DREXEL UNIVERSITY
Goodwin College
of Professional Studies

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DREXEL INSTITUTE

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About Goodwin: Undergraduate

Goodwin's programs prepare adult learners to successfully navigate within and contribute to the multidisciplinary workplace. The College serves a diverse student body with full-time day and part-time evening, weekend and online degree and degree-completion programs.

Goodwin responds to the demands of today's learner by offering competitive educational programs that tailor a student's learning experience to her/his professional career aspirations. The College offers several degree completion options to students with busy schedules or wishing to complete previous studies.

Programs are regionally accredited by the Middle States Association of Colleges and Secondary Schools. Two undergraduate degrees are also distinguished with significant industry accreditations: Engineering Technology by ABET and Construction Management by the American Council for Construction Education (ACCE).

Majors

Minors

Certificates

About the College

About the Curriculum

Requirements for the degrees are provided by individual programs according to the requirements for each major. The minimum number of credits required for the degree of Bachelor of Science varies from one program to another. All graduating students, regardless of the program, must have earned a grade point average of 2.0 or higher for all coursework undertaken at Drexel University.

Degree Completion Options

Accelerated Degree Programs

These programs are designed for people who already have earned an associate's degree or equivalent and for working adults and professionals. The types of programs available are listed below:

- Corporate onsite degree completion
- Saturday Scholars (http://goodwin.drexel.edu/ae/about_ss.php) Degree Completion Program

Part-time Evening Studies

The College offers several partnership programs with other colleges and schools at the University. These degree programs are housed in the respective day departments, and are offered in the evening for students who cannot attend classes during the day. However, many of these degree programs may require courses during the day.

Off-site Programs

The Goodwin College brings high quality Drexel courses and faculty members to your facility, offering your employees an exceptional and convenient education. Through Drexel, companies may choose to offer their employees programs and certificates at their place of work. The College works seamlessly with organizations to provide the support and training that their employees want and that management needs in order to maintain a competitive edge in their industry. A Drexel education is a benefit that makes sense for both employers and employees. It enhances an organization's reputation, improves employee retention rates, and makes for a skilled and talented workforce.

Drexel University and Burlington County College (BCC) programs

Drexel University and Burlington County College (BCC) have joined together to create a unique educational opportunity: Drexel at BCC. This partnership enables BCC students to earn a bachelor's degree from Drexel University while remaining on BCC's Mount Laurel campus. Currently available programs include:

- Engineering Technology
- Computing and Security Technology
- Construction Management
- Hospitality Management

For more information, visit the Drexel at BCC (http://www.drexelatbcc.org) web site.

Facilities

The College of Professional Studies is housed in One Drexel Plaza, 3001 Market Street, across from the 30th Street Train Station in Philadelphia. The College provides its students with access to seven state-of-the-art computer labs, equipped with advanced and updated software, desktop publishing and scanner capabilities. Additional resources include a state-of-the-art teleconferencing/smart room, and PLC, electronics, and machine tools educational laboratories to support the applied engineering technology program.

The major facility of the Hospitality Management, Culinary Arts and Food Science programs is located on the sixth floor of the Academic Building. It is a 6,500 square foot space that includes three state-of-the-art commercial kitchens and the Academic Bistro (http://goodwin.drexel.edu/hcfs/bistro.php), the student-run restaurant, bar and lounge. The facility also includes a conference room and the Les Dames d'Escoffier Library, which currently holds over 1,200 publications.

Communications and Applied Technology

Bachelor of Science Degree: 180.0 quarter credits

About the Program

The Bachelor of Science in Communications and Applied Technology is a multidisciplinary program designed for individuals who want to increase their knowledge of all aspects of business communications and relevant communication technologies, while understanding the business principles that are necessary to achieve corporate goals.

The major offers a multidisciplinary approach combining theoretical and applied learning principles and encompasses the spectrum of internal and external communications that organizations utilize in their management and marketing functions. The program is tailored to meet the needs of people who sell, communicate, and manage in industries that are heavily customer oriented and are involved in or affected by world markets. The goal of the program is to increase students' understanding of communication, management, applicable technology, business, the world economy, and relationships within their corporate culture.

Curriculum

To complete the Bachelor of Science degree in Communications and Applied Technology, students must earn a minimum of 180 quarter credits comprising the following:

- English Composition
- Humanities
- Social Sciences
- Physical Sciences
- Mathematics

- Business
- Computing Technology
- Customer Operations

For additional information, please visit the Communications and Applied Technology (http://goodwin.drexel.edu/sotaps/ugcat.php) web page.

Degree Requirements

English Composition Requirements		
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
Mathematics Requirements		
MATH 181	Mathematical Analysis I	3.0
MATH 182	Mathematical Analysis II	3.0
MATH 183	Mathematical Analysis III	3.0
College Requirements		
GSTD 200	Lifelong Learn Theory & Prac	3.0
Natural Science Electives *		9.0
Liberal Studies Electives **		33.0
Free Electives		36.0
Business Minor Requirements ***		
Select six of the following:		24.0
ACCT 115	Financial Accounting Foundations	
BLAW 201	Business Law I	
ECON 201	Principles of Microeconomics	
ECON 202	Principles of Macroeconomics	
FIN 301	Introduction to Finance	
MKTG 301	Introduction to Marketing Management	
ORGB 300 [WI]	Organizational Behavior	
OPM 200	Operations Management	
STAT 201	Introduction to Business Statistics	
Communications and Applied Technology		
CAT 201 [WI]	Interpersonal Communication	3.0
CAT 302	Customer Service Theory and Practice	3.0
CAT 303	Client Relations Management	3.0
CAT 360	Applied Organizational Research	3.0
CAT 491	Senior Project in Communications and Applied Technology I	3.0
CAT 492	Senior Project in Communications and Applied Technology	3.0
COM 111	Principles of Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 240	New Technologies In Communication	3.0
COM 270 [WI]	Business Communication	3.0
COM 330	Professional Presentations	3.0
COM 335	Electronic Publishing	3.0
COM 370 [WI]	Advanced Business Writing	3.0

CT 230	Web Development I	3.0
CT 240	Web Development II	3.0
CT 385	Web Development III [****]	3.0
PHIL 323	Organizational Ethics	3.0
PROJ 301	Introduction to Project Management	3.0
PRST 303	Interpersonal Skills for Virtual Teams	3.0
Total Credits		180.0

[*]   Students select 9.0 credits from any of the following sciences: ANAT, BIO, CHEM, ENVR, FDSC, NFS, PHEV, PHYS. Courses from other departments may be considered with advisor approval.

[**] Africana studies, anthropology, fine arts (history of architecture, art, film, music, theatre), foreign language, history, linguistics, literature, philosophy, political science, psychology, sociology, women's studies, writing.

[***] No more than 2 transferred courses may be used to complete the minor. A grade of C (2.0) or better must be earned in each courses in the Minor in Business.

[****] After completion of CT 230, CT 240 and CT 385, students can sit for the Certified Internet Webmaster (CIW) exam. Additional self-study may be necessary.

Program Delivery

An attractive feature of the degree-completion program in Communications and Applied Technology is the flexible delivery options. This program can be completed in a variety of formats so that students can complete their degree in the design that best fits their lifestyle.

On-campus Option

Students who prefer to study on Drexel's main campus in University City may do so during the day, evening, or on Saturdays. All but five of the courses can be completed during the day or evening. Finally, students who already have an associate's degree or equivalent credits may complete their degree entirely on Saturdays through Drexel's innovative Saturday Scholars program, providing virtually no interruption to their weekday routine. Please visit the Saturday Scholars Program (http://goodwin.drexel.edu/ae/about_ss.php) web site for more information.

Online Option

Students who desire a quality Drexel education but who do not live or work in close proximity to the university can complete their degree entirely online. The same distinguished Drexel full-time and adjunct faculty that teach on campus also teach online courses using the same syllabus and learning objectives. Please visit the Drexel E-Learning (http://www.drexel.com/Fields_of_Study/business/CAT/index.shtml) web site for more information.

Career Opportunities

The program provides excellent preparation for management positions in corporate communication, client relations management, and sales. Because communication is integral to success in all industries, the degree prepares students from almost any industry to advance into management positions. Students who want to pursue a graduate degree will find this program's broad foundation and writing intensive nature to be excellent preparation. Graduates have gone on to pursue master's degrees in law, business, information technology, communication, human services, and health care management.

Visit the Drexel Steinbright Career Development Center (http://www.drexel.edu/scdc) page for information on opportunities after graduation.

Computing and Security Technology

Bachelor of Science Degree: 185.0 quarter credits

About the Program

The Computing and Security Technology (CST) major is developed to prepare students for the hands-on computer application work in business and industry. The program, which may be completed entirely online, through the accelerated Saturday Scholars program or through the Drexel at BCC program, places emphasis on practical education and fundamental concepts.

The curriculum centers on the application of software and hardware technology to solve real-world problems. Attention is given to maintenance and administration of information systems, with courses covering each of the major components of computer infrastructure: hardware, servers, Linux, Windows, networks, web, security, databases and OO programming.

The BS in Computing and Security Technology program is supported by state-of-the-art computer labs in the Goodwin College building, at the Burlington County College campus (BCC) and in a virtual environment. Faculty are selected based on their academic credentials and industry experience.

Students have an opportunity to pursue two educational paths: a concentration in Computing Technology or a concentration in Computing Security. Each concentration consists of 96.0 credits, divided into 60.0 credits of core courses and 36.0 credits of required courses in the specific concentration. In both concentrations, the curriculum focuses on the maintenance and administration of information systems.

Additional Information

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For additional information, visit the School of Technology and Professional Studies (http://goodwin.drexel.edu/cst) website.

Degree Requirements

Students completing this major must select either a concentration in computing technology or a concentration in computing security.

English Requirements

COM 230	Techniques of Speaking	3.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0

ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
Mathematics Requirements		
MATH 181	Mathematical Analysis I	3.0
MATH 182	Mathematical Analysis II	3.0
MATH 183	Mathematical Analysis III	3.0
Natural Science Electives [*]		9.0
Liberal Studies Electives [**]		12.0
Free Electives		47.0
Computing and Security Technology Core Requirements		
CT 200	Server I	3.0
CT 320	Server II	3.0
CT 140	Network Administration I	3.0
CT 330	Network Administration II	3.0
CT 350	Network Administration III	3.0
CT 210	Linux I	3.0
CT 310	Linux II	3.0
CT 340	Operating Systems Architecture I	3.0
CT 360	Operating Systems Architecture II	3.0
CT 380	Operating Systems Architecture III	3.0
CT 230	Web Development I	3.0
CT 240	Web Development II	3.0
CT 400	Network Security	3.0
CT 395	Information Technology Security I	3.0
CT 420	Information Technology Security II	3.0
CT 491	Senior Project I	3.0
CT 496	Senior Project II	3.0
Students completing this major must select either a concentration in Computing Technology or a concentration in Computing Security. See below.		45.0
Total Credits		**185.0**

[*] Students select 9.0 credits from the following subject areas: ANAT, BIO, CHEM, ENVS, FDSC, NFS, PHEV, and PHYS. Courses from other departments may be considered with advisor approval.

[**] Students must complete 12.0 credits in Liberal Studies covering a range of subject areas in the humanities and/or social sciences: anthropology, psychology, sociology, political science, history, philosophy, literature, economics, communication, music or art.

Concentration in Computing Technology

Computing Technology Concentration Requirements

CT 100	Microcomputer Hardware	3.0
CT 120	Microcomputer Operating System	3.0
CT 220	Database I	3.0
CT 375	Database II	3.0
CT 425	Database III	3.0
CT 370	Object Oriented Systems Analysis	3.0
CT 290	Client Side Programming	3.0
CT 431	Project Management	3.0
Computing Technology Electives		
Select three of the following:		9.0
CT 339	Computing and Security Technology Practicum	

CT 385	Web Development III	
CT 390	Server Side Programming	
CT 392	Web Development IV	
CT 405	Enterprise Programming	
CT 410	Linux III	
CT 430	Database IV	
CT 435	Database V	
CT 438	Database VI	
Additional Security Electives		
Students select any four (4) Security courses from the list of required Computing Security Concentration Courses or from the list of Computing Security electives.		12.0
Total Credits		**45.0**

Concentration in Computing Security

Computing Security Concentration Requirements

CT 300	Security Technology Models and Architecture I	3.0
CT 312	Access Control and Intrusion Detection Technology	3.0
CT 315	Security Management Practice	3.0
CT 325	Operating System Security Architecture I	3.0
CT 336	Internet Protocol Security and Virtual Private Network Technology	3.0
CT 393	Information Technology Security Risk Assessment	3.0
CT 402	Network Security II	3.0
CT 412	Information Technology Security Policies	3.0
CT 415	Disaster Recovery and Continuity Planning	3.0
CT 422	Incident Response Best Practices	3.0
CT 432	Information Technology Security Systems Audits	3.0
CT 472	Security Defense Countermeasures	3.0
Computing Security Electives		
Select three of the following:		9.0
CT 212	Computer Forensics I: Fundamentals	
CT 214	Computer Forensics II: Forensics and Investigations	
CT 215	Computer Forensics III: Advanced Computer Forensics	
CT 222	Security and Information Warfare	
CT 225	Data Mining Technology for Security	
CT 295	Public Key Infrastructure Technology	
CT 326	Operating System Security Architecture II	
CT 339	Computing and Security Technology Practicum	
CT 355	Wireless Network Security Technology	
CT 362	Network Auditing Tools	
CT 382	Applied Cryptography	
CT 407	Network Security III	
CT 427	E-Commerce and Web Security Technology	
Total Credits		**45.0**

Concentrations: Sample Plans of Study

Computing Technology Concentration (3rd + 4th year)

Third Year

Fall		Credits
CT 140	Network Administration I	3.0
CT 210	Linux I	3.0
CT 230	Web Development I	3.0
CT 340	Operating Systems Architecture I	3.0
CT 395	Information Technology Security I	3.0
	Term Credits	**15.0**
Winter		
CT 240	Web Development II	3.0
CT 310	Linux II	3.0
CT 330	Network Administration II	3.0
CT 360	Operating Systems Architecture II	3.0
CT 420	Information Technology Security II	3.0
	Term Credits	**15.0**
Spring		
CT 200	Server I	3.0
CT 350	Network Administration III	3.0
CT 370	Object Oriented Systems Analysis	3.0
CT 380	Operating Systems Architecture III	3.0
CT 400	Network Security	3.0
	Term Credits	**15.0**

Fourth Year

Fall		
CT 220	Database I	3.0
CT 320	Server II	3.0
Computing Technology electives		6.0
Computing Security elective		3.0
	Term Credits	**15.0**
Winter		
CT 290	Client Side Programming	3.0
CT 375	Database II	3.0
CT 431	Project Management	3.0
CT 491	Senior Project I	3.0
Computing Security elective		3.0
	Term Credits	**15.0**
Spring		
CT 425	Database III	3.0
CT 496	Senior Project II	3.0
Computing Technology elective		3.0
Computing Security electives		6.0
	Term Credits	**15.0**

Total Credit: 90.0

Computing Security Concentration (3rd + 4th year)

Third Year

Fall		Credits
CT 140	Network Administration I	3.0
CT 210	Linux I	3.0
CT 230	Web Development I	3.0
CT 340	Operating Systems Architecture I	3.0
CT 395	Information Technology Security I	3.0
	Term Credits	**15.0**
Winter		
CT 240	Web Development II	3.0
CT 310	Linux II	3.0
CT 330	Network Administration II	3.0
CT 360	Operating Systems Architecture II	3.0
CT 420	Information Technology Security II	3.0
	Term Credits	**15.0**
Spring		
CT 200	Server I	3.0
CT 350	Network Administration III	3.0
CT 380	Operating Systems Architecture III	3.0
CT 400	Network Security	3.0
Computing Security elective		3.0
	Term Credits	**15.0**

Fourth Year

Fall		
CT 312	Access Control and Intrusion Detection Technology	3.0
CT 315	Security Management Practice	3.0
CT 320	Server II	3.0
CT 402	Network Security II	3.0
CT 415	Disaster Recovery and Continuity Planning	3.0
	Term Credits	**15.0**
Winter		
CT 336	Internet Protocol Security and Virtual Private Network Technology	3.0
CT 393	Information Technology Security Risk Assessment	3.0
CT 412	Information Technology Security Policies	3.0
CT 472	Security Defense Countermeasures	3.0
CT 491	Senior Project I	3.0
Computing Security elective		3.0
	Term Credits	**18.0**
Spring		
CT 300	Security Technology Models and Architecture I	3.0
CT 325	Operating System Security Architecture I	3.0
CT 422	Incident Response Best Practices	3.0
CT 432	Information Technology Security Systems Audits	3.0
CT 496	Senior Project II	3.0
Computing Security elective		3.0
	Term Credits	**18.0**

Total Credit: 96.0

Career Opportunities

Graduates of the Computing and Security Technology program who complete a concentration in Computing Technology can pursue careers as information technologists and advanced technicians in a wide range of industries. Information technologists are capable of performing multiple

IT tasks and accessing various information resources. The program gives students a unique set of applied skills that allow them to fill a number of roles as part of the information systems team. Potential careers include the following:

- Network administrators
- Database administrators
- Database developers
- Web developers
- Security specialists

Graduates with a concentration in Computing Security pursue careers as advanced technicians who operate and administer the security tools, technologists who create and install security solutions, and leaders who define the security policies. Potential careers include the following:

- Security technicians
- Security administrators
- Security analysts
- Security managers
- Chief information security officers

Visit the Drexel Steinbright Career Development Center (http://www.drexel.edu/scdc) page for more information on career opportunities.

Construction Management

Bachelor of Science Degree: 184.5 quarter credits

About the Program

Construction management is a dynamic profession that is a combination of art and science. While an understanding of the technical aspects of construction is extremely important, it is also essential that construction professionals have knowledge of the business and management aspects of the profession. While construction has traditionally been a very conservative industry, the increasing rate of technological development and competition in the industry serves to accelerate the development of new construction methods, equipment, materials, and management techniques. As a result of these forces, there is an increasing need for innovative and professionally competent construction professionals.

The Construction Management major prepares students for all phases of operation and management of the construction organization including cost estimating, project scheduling, and planning. Students are able to choose from a wide range of subjects in the social sciences and humanities to satisfy electives in the liberal arts and free elective requirements. Pursuing part-time, degree completion on average takes six years.

Students in Drexel's Construction Management program receive broad academic, technical, business, and construction management courses that are designed to produce well-rounded construction professionals. Students interested in extending their construction management studies into real estate development should consider the concentration in real estate. This concentration in real estate is designed for students to attain the knowledge and skills required to create and maintain built environments for living, working and entertainment purposes, as well as to explore issues in the real estate development process and the industry as a whole.

Program Delivery Options

Program delivery options for the Construction Management program include:

- A traditional 5-year with co-op
- A part-time study option
- The Drexel University and Burlington County College (BCC) (http://www.drexelatbcc.org) option:
  Drexel University and Burlington County College (BCC) have joined together to create a unique educational opportunity: Drexel at BCC. This partnership enables BCC students to earn a bachelor's degree from Drexel University while remaining on BCC's Mount Laurel campus.

Additional Information

For additional information, visit the Construction Management (http://goodwin.drexel.edu/cmgt) website or contact:

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215.895.6024
tsafosjm@drexel.edu

Degree Requirements

English/Communication

ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
COM 230	Techniques of Speaking	3.0
COM 270 [WI]	Business Communication	3.0
COM 310 [WI]	Technical Communication	3.0
COM 330	Professional Presentations	3.0
Mathematics		
MATH 110	Precalculus	3.0
MATH 121	Calculus I	4.0
Science		
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
ENVS 260	Environmental Science and Society	3.0
GEO 101	Physical Geology	4.0
PHYS 182	Applied Physics I	3.0
Business		
ACCT 115	Financial Accounting Foundations	4.0
BLAW 201	Business Law I	4.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
FIN 301	Introduction to Finance	4.0
HRMT 323	Principles of Human Resource Administration	4.0
ORGB 300 [WI]	Organizational Behavior	4.0
STAT 201	Introduction to Business Statistics	4.0
Humanities and Social Science		
PHIL 301	Business Ethics	3.0

Three Humanities and Social Science Electives		9.0
Professional Core - Construction Science		
CMGT 161	Building Materials and Construction Methods I	3.0
CMGT 162	Building Materials and Construction Methods II	3.0
CMGT 163	Building Materials and Construction Methods III	3.0
CMGT 251	Construction Surveying	3.0
CMGT 263	Understanding Construction Drawings	3.0
CMGT 266	Building Systems I	3.0
CMGT 267	Building Systems II	3.0
CMGT 365	Soil Mechanics in Construction	4.0
CMGT 371	Structural Aspects in Construction I	3.0
CMGT 372	Structural Aspects in Construction II	3.0
Professional Core - Construction		
CMGT 101	Introduction to Construction Management	3.0
CMGT 240	Economic Planning for Construction	3.0
CMGT 261	Construction Safety	3.0
CMGT 262	Building Codes	3.0
CMGT 361	Contracts And Specifications I	3.0
CMGT 362	Contracts and Specifications II	3.0
CMGT 363	Estimating I	3.0
CMGT 364	Estimating II	3.0
CMGT 450	Construction Management of Field Operations	3.0
CMGT 461	Construction Management	3.0
CMGT 463	Value Engineering	3.0
CMGT 467	Techniques of Project Control	4.0
Construction Electives		
Select four of the following:		12.0
CMGT 265	Information Technologies in Construction	
CMGT 355	Introduction to Sustainability in Construction	
CMGT 451	Heavy Construction Principles & Practices	
CMGT 465	Marketing Construction Services	
CMGT 468	Real Estate	
CMGT 469	Construction Seminar: Contemporary Issues	
CMGT 470	Productivity in Construction	
Other Approved CMGT Elective [*]		
Construction Capstone		
CMGT 499	Construction Management Independent Study Project	3.0
University Requirements		
UNIV G101	The Drexel Experience	2.0
Free Electives		12.0
Total Credits		184.5

[*]   Students may choose another construction elective but the permission of the Program is required.

Sample Plan of Study

Term 1		Credits
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
CMGT 101	Introduction to Construction Management	3.0
CMGT 161	Building Materials and Construction Methods I	3.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
MATH 110	Precalculus	3.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**18.5**
Term 2		
ACCT 115	Financial Accounting Foundations	4.0
CMGT 162	Building Materials and Construction Methods II	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
MATH 121	Calculus I	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**15.0**
Term 3		
CMGT 163	Building Materials and Construction Methods III	3.0
CMGT 263	Understanding Construction Drawings	3.0
ECON 201	Principles of Microeconomics	4.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
PHYS 182	Applied Physics I	3.0
	Term Credits	**16.0**
Term 4		
CMGT 261	Construction Safety	3.0
COM 230	Techniques of Speaking	3.0
ECON 202	Principles of Macroeconomics	4.0
Free elective		3.0
	Term Credits	**13.0**
Term 5		
CMGT 262	Building Codes	3.0
COM 270 [WI]	Business Communication	3.0
GEO 101	Physical Geology	4.0
PHIL 301	Business Ethics	3.0
Humanities/Social science elective		3.0
	Term Credits	**16.0**
Term 6		
CMGT 240	Economic Planning for Construction	3.0
CMGT 266	Building Systems I	3.0
CMGT 371	Structural Aspects in Construction I	3.0
COM 310 [WI]	Technical Communication	3.0
ORGB 300 [WI]	Organizational Behavior	4.0
	Term Credits	**16.0**
Term 7		
BLAW 201	Business Law I	4.0
CMGT 267	Building Systems II	3.0
CMGT 371	Structural Aspects in Construction I	3.0
COM 330	Professional Presentations	3.0
Free elective		3.0
	Term Credits	**16.0**

Term 8

CMGT 251	Construction Surveying	3.0
CMGT 361	Contracts And Specifications I	3.0
CMGT 363	Estimating I	3.0
ENVS 260	Environmental Science and Society	3.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	**16.0**

Term 9

CMGT 362	Contracts and Specifications II	3.0
CMGT 364	Estimating II	3.0
HRMT 323	Principles of Human Resource Administration	4.0
Construction Management elective[*]		3.0
Humanities/Social science elective		3.0
	Term Credits	**16.0**

Term 10

CMGT 365	Soil Mechanics in Construction	4.0
CMGT 450	Construction Management of Field Operations	3.0
CMGT 467	Techniques of Project Control	4.0
FIN 301	Introduction to Finance	4.0
	Term Credits	**15.0**

Term 11

CMGT 461	Construction Management	3.0
Two Construction Management electives[*]		6.0
Humanities/Social science elective		3.0
Free elective		3.0
	Term Credits	**15.0**

Term 12

CMGT 463	Value Engineering	3.0
CMGT 499	Construction Management Independent Study Project	3.0
Construction Management elective[*]		3.0
Free elective		3.0
	Term Credits	**12.0**

Total Credit: 184.5

Real Estate Concentration

The concentration in real estate provides students with training in issues such as project finance, real estate as investment, design and construction, operations, development law, environmental remediation, public policy, market analysis, and architecture. For this specialization, students take the same Construction Management (CMGT) core requirements, replacing some electives with the concentration-specific courses.

English/Communication

ENGL 101	Expository Writing and Reading	3.0
ENGL 102	Persuasive Writing and Reading	3.0
ENGL 103	Analytical Writing and Reading	3.0
COM 230	Techniques of Speaking	3.0
COM 270 [WI]	Business Communication	3.0
COM 310 [WI]	Technical Communication	3.0
COM 330	Professional Presentations	3.0

Mathematics

MATH 110	Precalculus	3.0
MATH 121	Calculus I	4.0

Science

ENVS 260	Environmental Science and Society I	3.0
ENVS 272	Physical Geology	4.0
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
PHYS 182	Applied Physics I	3.0

Business

ACCT 115	Financial Accounting Foundations	4.0
BLAW 201	Business Law I	4.0
ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
FIN 301	Introduction to Finance	4.0
HRMT 323	Principles of Human Resource Administration	4.0
ORGB 300 [WI]	Organizational Behavior	4.0
STAT 201	Introduction to Business Statistics	4.0

Humanities and Social Science

PHIL 301	Business Ethics	3.0
Three Humanities and Social Science Electives		9.0

Professional Core - Construction Science

CMGT 161	Building Materials and Construction Methods I	3.0
CMGT 162	Building Materials and Construction Methods II	3.0
CMGT 163	Building Materials and Construction Methods III	3.0
CMGT 251	Construction Surveying	3.0
CMGT 263	Understanding Construction Drawings	3.0
CMGT 266	Building Systems I	3.0
CMGT 267	Building Systems II	3.0
CMGT 365	Soil Mechanics in Construction	4.0
CMGT 371	Structural Aspects in Construction I	3.0
CMGT 372	Structural Aspects in Construction II	3.0

Professional Core - Construction

CMGT 240	Economic Planning for Construction	3.0
CMGT 101	Introduction to Construction Management	3.0
CMGT 261	Construction Safety	3.0
CMGT 262	Building Codes	3.0
CMGT 361	Contracts And Specifications I	3.0
CMGT 362	Contracts and Specifications II	3.0
CMGT 363	Estimating I	3.0
CMGT 364	Estimating II	3.0
CMGT 450	Construction Management of Field Operations	3.0
CMGT 461	Construction Management	3.0
CMGT 463	Value Engineering	3.0
CMGT 467	Techniques of Project Control	4.0

Concentration in Real Estate

ARCH 432	The Development Process	3.0
CMGT 468	Real Estate	3.0
REAL 310	Introduction to Real Estate	3.0
REAL 320	Real Estate Law - Principle & Practice	3.0
REAL 330	Facilities & Property Management	3.0

REAL 470	Real Estate Investments - Market & Feasibility Analysis	3.0
University Requirements		
UNIV 101	The Drexel Experience	2.0
Free Electives		9.0
Total Credits		184.5

Career Opportunities

The graduates of the construction management program have secured positions as project managers, estimators, schedulers, and field superintendents for general contractors, subcontractors, and construction managers. Many are employed as owner representatives working for architectural firms, consulting engineering firms, commercial companies and institutions that have needs for building or other construction projects. Some have risen to executive positions within companies while others own their own firms. Graduates have also returned to the program after obtaining positions in the field to teach and share expertise.

The Goodwin College of Professional Studies offers a Bachelor of Science in Construction Management as well as a Certificate Program in Construction Management. Depending on student goals, each option provides a strong educational foundation for successful performance and/or entrance into the construction industry.

Employers

Some of the companies that have hired Drexel students as co-op or full-time employees:

- Gilbane Building Company
- L.F. Driscoll Construction Company
- American Infrastructure
- Pennoni Associates
- Brandywine Realty Trust
- Turner Construction Company
- Intech Construction Managers
- Urban Engineers, Inc.

Potential Careers

Construction Manager: Coordinates a venture from its initial development through final construction. Develops a schedule and ensures the project is completed on time and within budget. Obtains necessary licenses and permits and oversees the progress of the project.

Cost Estimator: Prepares information about costs that are necessary for a business to bid on a contract or to determine the profitability of a proposed product. Assembles information about factors that can influence costs such as materials, labor, location, and special machinery requirements, including computer hardware and software.

Project Manager: Develops requirements, budgets, and timetables for a firm's construction plans to ensure that the projects are successful. Determines the tasks to complete, assigns responsibilities to team members, and sees the project through from conception to completion.

Visit the Drexel Steinbright Career Development Center (http://www.drexel.edu/scdc) page for more information on career opportunities.

Minor in Construction Management

Students in civil engineering, architectural engineering and architecture may select to pursue construction management as a minor area of study. Because construction is inherently related to design in these disciplines, the construction management minor can be a natural extension of each field of study.

The requirements for the minor include:

- completion of a minimum of 24.0 credits
- courses used to fulfill general education requirements may not be counted toward an academic minor
- up to nine credits earned within the student's major may be counted toward the minor with minor department approval.
- prerequisite courses may be counted toward the minor if recommended by the minor department.

Required Courses

CMGT 161	Building Materials and Construction Methods I	3.0
CMGT 162	Building Materials and Construction Methods II	3.0
CMGT 361	Contracts And Specifications I	3.0
CMGT 362	Contracts and Specifications II	3.0
CMGT 363	Estimating I	3.0
CMGT 467	Techniques of Project Control	4.0
Select two of the following: [*]		6.0
CMGT 261	Construction Safety	
CMGT 263	Understanding Construction Drawings	
CMGT 364	Estimating II	
CMGT 461	Construction Management	
CMGT 463	Value Engineering	
CMGT 465	Marketing Construction Services	

[*] Choice of electives must be approved by the department based on the student's major field and prior experience.

Certain courses within the student's major may also be used to meet the minor requirements. These include:

ARCH 261	Environmental Systems I	3.0
ARCH 262	Environmental Systems II	3.0
CIVE 240 [WI]	Engineering Economic Analysis	3.0
ARCH 161	Architectural Construction [*]	3.0
Total Credits		12.0

[*] ARCH 161 can be substituted for CMGT 161 for Architects. An elective may be substituted for CMGT 162.

Culinary Arts

Bachelor of Science Degree: 184.0 quarter credits

About the Program

The major in culinary arts prepares students for leadership positions in the fine foods segment of the hospitality industry. This baccalaureate degree in culinary arts is among the first of its kind in the United States. This program comprises approximately equal parts liberal arts, business, hospitality management, and culinary arts.The aim of the program is to

prepare students as independent thinkers who can work collaboratively in the field of culinary arts.

Students completing this program also receive a business minor with a choice of one of the following areas:

- Business Administration
- Marketing
- Entrepreneurship

Alternatively, students may meet with their Advisor to select a minor that is more in line with their personal and professional goals.

For more information, visit the Culinary Arts (http://goodwin.drexel.edu/sotaps/ugca.php) page on the College's website.

Program Delivery Options

Drexel's BS degrees include courses in the liberal arts, the humanities, sciences, hospitality management and culinary arts. Three business minors are also offered. The BS degree can be completed on a full-time or part-time basis:

Traditional Four-year option, with one co-op experience:
This option includes one six-month period of full-time employment in the junior year.

Four plus One option BS/MBA combined degree, with co-op experience:
This option combines the four-year BS degree followed by the one-year Professional MBA to qualify freshmen applicants. Incoming freshmen will generally have a minimum of 1300 on the SAT, a GPA of 3.5 or higher, and be in the top 10% of their high school graduating class. For MBA requirements visit the LeBow College Professional MBA web site.

Full-time Status Evening option without co-op experience:
To be eligible, students should have a minimum of two years full-time work experience related to students' majors, and a minimum of one year of college level work. Full-time students are eligible for full-time financial aid packages.

Part-time option without co-op experience:
Students work closely with academic advisors to develop a customized plan of study toward degree completion.

London option:
(Available for Hospitality Management and Culinary Arts students.) Students are invited to spend a term in their sophomore, junior or senior year in the Study Abroad Program (http://www.drexel.edu/studyabroad), Drexel in London, while earning up to 18 credits. The program's emphasis is on the global implications of and opportunities within the hospitality industry.

Drexel University and Burlington County College (BCC) option:
(Available for Hospitality Management and Culinary Arts students.) Drexel University and Burlington County College (BCC) have joined together to create a unique educational opportunity: Drexel at BCC. This partnership enables BCC students to earn a bachelor's degree from Drexel University while remaining on BCC's Mount Laurel campus. For more information about a BS in Hospitality or a BS in Culinary Arts, visit the Drexel at BCC (http://www.drexelatbcc.org) web site.

Degree Requirements

General Education Requirements

ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
NFS 101	Introduction to Nutrition & Food	3.0
MATH 101	Introduction to Analysis I	4.0
FDSC 154	Foods: Composition, Interaction and Formulation	4.0
UNIV G101	The Drexel Experience	2.0
Arts and Humanities Electives [**]		9.0
Social Science Electives [***]		6.0
ANTH 101	Introduction to Cultural Diversity	
Free Electives		15.0-19.0
Program Requirements		
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 110	Introduction to the Hospitality Industry	3.0
HRM 120	Principles of Food-Service Management	3.0
HRM 150	Customer Service	3.0
HRM 160	Laws of the Hospitality Industry	3.0
HRM 200	Software for Hospitality Industry	3.0
HRM 215	Commercial Food Production	4.0
HRM 220	Purchasing for the Hospitality Industry	3.0
HRM 225	Equipment Design and Layout	3.0
HRM 310	Hospitality Accounting Systems	3.0
HRM 320	Hospitality Management Information Systems	3.0
HRM 330	Hotel and Restaurant Marketing	3.0
HRM 335	Beverage Management	3.0
HRM 350	Cost Controls in Hospitality	3.0
HRM 360	Hospitality Industry Public Relations	3.0
HRM 455	Hospitality Human Resources Management	3.0
Culinary Arts Requirements		
CULA 120	Techniques and Traditions I	3.0
CULA 121	Techniques and Traditions II	3.0
CULA 125	Foundations of Professional Baking	3.0
CULA 216	A la Carte	3.0
CULA 220	Patisserie I	2.0
CULA 225	Patisserie II	2.0
CULA 235	Professional Dining Room Management	3.0
CULA 300	Fundamentals of Vegetarian Cuisine	3.0
CULA 305	Fundamentals of Italian Cuisine	3.0
CULA 310	Fundamentals of French Cuisine	3.0
CULA 315	Fundamentals of American Cuisine	3.0
CULA 316	Butchery Laboratory	2.0
CULA 325	Garde Manger Laboratory	3.0
CULA 405 [WI]	Culture and Gastronomy I	3.0
CULA 410	Culture and Gastronomy II	3.0
CULA 415	Food Styling and Show Competition	3.0
CULA 420	Senior Design Project	3.0
Culinary Arts (CULA) Electives		6.0-9.0

Business Minor Requirements (See Options Below)   24.0

Total Credits	180.0-187.0

*   Students who wish to minor in Business Administration must take MATH 101 *and* MATH 102 *or* MATH 181,182 and 183. Marketing and Entrepreneurship minors need only take MATH 101.

**   Students choose three classes from the following subject areas: ARTH, COM, ENGL, FMVD, HIST, HUM, JUDA, LING, MUSC, PHIL, PHTO, PRST, PSCI, THTR, WMST. Students can also select any of the language courses to fulfill Arts and Humanities requirements.

***   Students must take ANTH 101 and choose one additional course from AFAS, ANTH, PSY, and SOC courses to fulfill the Social Sciences requirement.

Business Minor Requirements

Students have the option of satisfying the business minor requirement by completing one of three possible business minors: **General Business Administration, Marketing or Entrepreneurship.**

Business Administration Minor Option

ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
FIN 301	Introduction to Finance	4.0
MKTG 301	Introduction to Marketing Management	4.0
ORGB 300 [WI]	Organizational Behavior	4.0
STAT 201	Introduction to Business Statistics	4.0
Total Credits		24.0

Entrepreneurship Minor Option

ACCT 120	Accounting Essentials for New Ventures	4.0
MGMT 260	Introduction to Entrepreneurship	4.0
MGMT 364	Technology Management	4.0
MGMT 365	Business Plan for Entrepreneurs	4.0
Select two of the following:		8.0
BLAW 346	Entrepreneurial Law	
FIN 301	Introduction to Finance *	
FIN 335	Entrepreneurial Finance	
MKTG 347	New Product Development	
MGMT 363	Directed Study in Entrepreneurship	
ORGB 300 [WI]	Organizational Behavior	
Total Credits		24.0

*   Prerequisites must be taken as unrestricted electives.

Marketing Minor Option

MKTG 301	Introduction to Marketing Management	4.0
MKTG 380	Seminar in Marketing Strategy	4.0
Select four of the following:		16.0
MKTG 321	Selling and Sales Management	
MKTG 322	Advertising & Integrated Marketing Communications	
MKTG 324	Marketing Channels and Distribution Systems	
MKTG 326	Marketing Research	
MKTG 344	Professional Personal Selling	
MKTG 347	New Product Development	
MKTG 348	Services Marketing	
MKTG 351	Marketing for Non-Profit Organizations	
MKTG 353	Business-to-Business Marketing	
MKTG 355	Interactive Marketing	
MKTG 356	Consumer Behavior	
MKTG 357	Global Marketing	
MKTG 358	Transportation and Logistics	
Total Credits		24.0

Sample Plans of Study

BS in Culinary Arts: Minor in Business Administration
(See below for the additional plans illustrating the other Business Minor options)

Term 1		Credits
CHEM 101	General Chemistry I	3.5
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
HRM 110	Introduction to the Hospitality Industry	3.0
MATH 101	Introduction to Analysis I	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**14.5**
Term 2		
ANTH 101	Introduction to Cultural Diversity	3.0
CHEM 102	General Chemistry II	4.5
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
MATH 102	Introduction to Analysis II	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**15.5**
Term 3		
CHEM 103	General Chemistry III	5.0
CULA 120	Techniques and Traditions I	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
FDSC 154	Foods: Composition, Interaction and Formulation	4.0
MATH 239	Mathematics for the Life Sciences	4.0
	Term Credits	**19.0**
Term 4		
BIO 122	Cells and Genetics	4.5
HRM 120	Principles of Food-Service Management	3.0
NFS 215	Nutritional Chemistry	3.0
NFS 217	Nutrient Quality & Composition	1.0
NFS 230	Intermediate Nutrition	4.0
	Term Credits	**15.5**
Term 5		
CULA 315	Fundamentals of American Cuisine	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 215	Commercial Food Production	4.0

Culinary Arts (CULA) or HRM (Hospitality Management) elective		3.0
	Term Credits	**14.0**
Term 6		
BIO 126	Physiology and Ecology	4.5
ECON 201	Principles of Microeconomics	4.0
ORGB 300 [WI]	Organizational Behavior	4.0
Free Elective		3.0
	Term Credits	**15.5**
Term 7		
COM 230	Techniques of Speaking	3.0
COOP 101	Career Management and Professional Development	0.0
CULA 291	Culinary Arts Practicum II	6.0
ECON 202	Principles of Macroeconomics	4.0
Culinary Arts (CULA) or HRM (Hospitality Management) elective		3.0
	Term Credits	**16.0**
Term 8		
CULA 310	Fundamentals of French Cuisine	3.0
FDSC 350	Experimental Foods: Product Development	3.0
FDSC 456	Food Preservation Processes	3.0
PHYS 103	General Physics I	4.0
	Term Credits	**13.0**
Term 9		
FDSC 460	Food Chemistry	3.0
FDSC 468	Functional Foods	3.0
NFS 365 [WI]	Nutrition Laboratory: Food and Nutrient Analysis	4.0
PHYS 104	General Physics II	4.0
	Term Credits	**14.0**
Term 10		
CULA 125	Foundations of Professional Baking	3.0
CULA 405 [WI]	Culture and Gastronomy I	3.0
FDSC 450	Food Microbiology	3.0
FDSC 451	Food Microbiology Laboratory	2.0
MKTG 301	Introduction to Marketing Management	4.0
	Term Credits	**15.0**
Term 11		
CULA 410	Culture and Gastronomy II	3.0
FDSC 454	Microbiology & Chemistry of Food Safety	3.0
FDSC 461	Food Analysis	3.0
FDSC 491	Senior Project I	2.0
MKTG 347	New Product Development	4.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	**19.0**
Term 12		
COM 310 [WI]	Technical Communication	3.0
FDSC 490	Seminar in Food Science	1.0
FDSC 492	Senior Project II	2.0
STAT 202	Business Statistics II	4.0

Free Elective		3.0
	Term Credits	**13.0**

Total Credit: 184.0

BS in Culinary Arts: Minor in Entrepreneurship

Term 1		**Credits**
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
HRM 110	Introduction to the Hospitality Industry	3.0
HRM 200	Software for Hospitality Industry	3.0
MATH 181	Mathematical Analysis I	3.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**13.0**
Term 2		
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 150	Customer Service	3.0
MATH 182	Mathematical Analysis II	3.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**14.0**
Term 3		
CULA 120	Techniques and Traditions I	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
HRM 120	Principles of Food-Service Management	3.0
HRM 160	Laws of the Hospitality Industry	3.0
MATH 183	Mathematical Analysis III	3.0
NFS 101	Introduction to Nutrition & Food	3.0
	Term Credits	**18.0**
Term 4		
CULA 121	Techniques and Traditions II	3.0
CULA 125	Foundations of Professional Baking	3.0
HRM 220	Purchasing for the Hospitality Industry	3.0
MGMT 260	Introduction to Entrepreneurship	4.0
Free Elective		3.0
	Term Credits	**16.0**
Term 5		
CULA 315	Fundamentals of American Cuisine	3.0
CULA 325	Garde Manger Laboratory	3.0
HRM 215	Commercial Food Production	4.0
MGMT 364	Technology Management	4.0
Arts and Humanities Elective		3.0
	Term Credits	**17.0**
Term 6		
ACCT 120	Accounting Essentials for New Ventures	4.0
CULA 216	A la Carte	3.0
CULA 220	Patisserie I	2.0
CULA 235	Professional Dining Room Management	2.0
FDSC 154	Foods: Composition, Interaction and Formulation	4.0
	Term Credits	**15.0**

Term 7

COOP 101	Career Management and Professional Development	0.0
CULA 300	Fundamentals of Vegetarian Cuisine	3.0
CULA 305	Fundamentals of Italian Cuisine	3.0
MGMT 365	Business Plan for Entrepreneurs	4.0
Arts and Humanities Elective		3.0
Free Elective		3.0
	Term Credits	**16.0**

Term 8

CULA 225	Patisserie II	2.0
CULA 310	Fundamentals of French Cuisine	3.0
CULA 405 [WI]	Culture and Gastronomy I	3.0
CULA 415	Food Styling and Show Competition	3.0
Free Elective		3.0
	Term Credits	**14.0**

Term 9

CULA 410	Culture and Gastronomy II	3.0
HRM 225	Equipment Design and Layout	3.0
HRM 310	Hospitality Accounting Systems	3.0
HRM 360	Hospitality Industry Public Relations	3.0
Free Elective		3.0
	Term Credits	**15.0**

Term 10

CULA 316	Butchery Laboratory	2.0
Free Elective		2.0
Culinary Arts (CULA) Elective		2.0
Arts and Humanities Elective		3.0
Entrepreneurship Elective[*]		4.0
Social Science Elective		3.0
	Term Credits	**16.0**

Term 11

HRM 320	Hospitality Management Information Systems	3.0
HRM 335	Beverage Management	3.0
HRM 350	Cost Controls in Hospitality	3.0
Culinary Arts (CULA) Elective		3.0
Free Elective		3.0
	Term Credits	**15.0**

Term 12

CULA 420	Senior Design Project	3.0
HRM 455	Hospitality Human Resources Management	3.0
Culinary Arts (CULA) Elective		2.0
Social Science Elective		3.0
Entrepreneurship Elective[*]		4.0
	Term Credits	**15.0**

Total Credit: 184.0

[*]   See degree requirements (p. 13).

BS in Culinary Arts: Minor in Marketing

Term 1

		Credits
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
HRM 110	Introduction to the Hospitality Industry	3.0
HRM 200	Software for Hospitality Industry	3.0
MATH 181	Mathematical Analysis I	3.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**13.0**

Term 2

ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 150	Customer Service	3.0
MATH 182	Mathematical Analysis II	3.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**14.0**

Term 3

CULA 120	Techniques and Traditions I	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
HRM 120	Principles of Food-Service Management	3.0
HRM 160	Laws of the Hospitality Industry	3.0
MATH 183	Mathematical Analysis III	3.0
NFS 101	Introduction to Nutrition & Food	3.0
	Term Credits	**18.0**

Term 4

CULA 121	Techniques and Traditions II	3.0
CULA 125	Foundations of Professional Baking	3.0
HRM 220	Purchasing for the Hospitality Industry	3.0
Free Elective		3.0
Social Science Elective		3.0
	Term Credits	**15.0**

Term 5

CULA 315	Fundamentals of American Cuisine	3.0
CULA 325	Garde Manger Laboratory	3.0
HRM 215	Commercial Food Production	4.0
Social science Elective		3.0
Arts and Humanities Elective		3.0
	Term Credits	**16.0**

Term 6

CULA 216	A la Carte	3.0
CULA 220	Patisserie I	2.0
CULA 235	Professional Dining Room Management	2.0
FDSC 154	Foods: Composition, Interaction and Formulation	4.0
Free Elective		3.0
	Term Credits	**14.0**

Term 7

COOP 101	Career Management and Professional Development	0.0
CULA 300	Fundamentals of Vegetarian Cuisine	3.0
CULA 305	Fundamentals of Italian Cuisine	3.0

MKTG 301	Introduction to Marketing Management	4.0
Free Elective		3.0
Arts and Humanities Elective		3.0
	Term Credits	**16.0**
Term 8		
CULA 225	Patisserie II	2.0
CULA 310	Fundamentals of French Cuisine	3.0
CULA 405 [WI]	Culture and Gastronomy I	3.0
CULA 415	Food Styling and Show Competition	3.0
Marketing (MKTG) Elective		4.0
Free Elective		3.0
	Term Credits	**18.0**
Term 9		
CULA 410	Culture and Gastronomy II	3.0
HRM 225	Equipment Design and Layout	3.0
HRM 310	Hospitality Accounting Systems	3.0
HRM 360	Hospitality Industry Public Relations	3.0
Culinary Arts (CULA) Elective		2.0
	Term Credits	**14.0**
Term 10		
CULA 316	Butchery Laboratory	2.0
Culinary Arts (CULA) Elective		2.0
Marketing (MKTG) Elective		4.0
Free Elective		2.0
Arts and Humanities Elective		3.0
	Term Credits	**13.0**
Term 11		
HRM 320	Hospitality Management Information Systems	3.0
HRM 335	Beverage Management	3.0
HRM 350	Cost Controls in Hospitality	3.0
MKTG 380	Seminar in Marketing Strategy	4.0
Marketing (MKTG) Elective		4.0
	Term Credits	**17.0**
Term 12		
CULA 420	Senior Design Project	3.0
HRM 455	Hospitality Human Resources Management	3.0
Marketing (MKTG) Elective		4.0
Culinary Arts (CULA) Elective		3.0
Free Elective		3.0
	Term Credits	**16.0**

Total Credit: 184.0

Co-op/Career Opportunities

The hospitality industry employs 15 million people nationwide. According to the National Restaurant Association statistics, employment is growing at the rate of eleven percent each year, making this industry one of the fastest growing in the country. The Hospitality Management program enjoys close relationships with the finest hotels, restaurants and tourism partners in the greater Philadelphia area, as well as interaction with professional organizations that represent the industry on a regional,

national and international level. These relationships result in over $80,000 a year in scholarship funding for our students.

Typical career paths for graduates include the following:

- Restaurants and private clubs, which employ over 9 million people in the US
- Hotels Resorts & Casinos with almost 2.5 million employees
- Airlines, tour operating companies, travel agencies and tourism consulting
- Convention, special events, meeting planning, and tourism agencies
- Cruise lines, the fastest growing segment of the industry
- Retirement and life-care facilities
- Food service and beverage brokers, distributors, and suppliers to the industry

Co-Op Opportunities

Drexel University has long been known for its co-operative education/ internship programs, which allow students to mix periods of full-time, career-related employment with their studies. All traditional Hospitality Management students pursue the 6-month co-op employment. This six-month experience during the junior year is in a supervisory or managerial capacity. The following hotels, facilities, restaurants and clubs have recently offered co-op positions to Drexel's Hospitality Management students. Although many of these examples are located in the Philadelphia area, co-op jobs are not limited to any region.

- Four Seasons Hotel
- Jose Garces - Garces Group
- Mark Vetri - Vetri Family of Restaurants
- Marriott Hotels and Resorts
- Philadelphia Convention and Visitors Bureau
- America's Test Kitchen
- Philadelphia Chamber of Commerce
- Frog Commissary Catering
- Ritz-Carlton Hotel
- Sbraga Restaurant
- Restaurant Business Magazine
- Union League (private club)
- Walt Disney World

Visit the Drexel Steinbright Career Development Center (http://www.drexel.edu/scdc) page for more detailed information on co-op and post-graduate opportunities.

Minor in Culinary Arts

The minor in culinary arts is designed for students pursuing a variety of majors who also have an interest in food and cuisine. The required courses introduce the major cuisines, and develop necessary culinary technical skills and fundamental knowledge of foods and food preparation. Students are able to select elective courses in various cuisines or can explore more theoretical areas of the field through topics including gastronomy, food history, and food writing.

Required Courses

CULA 115	Culinary Fundamentals	3.0
or CULA 120	Techniques and Traditions I	

CULA 305	Fundamentals of Italian Cuisine	3.0
CULA 310	Fundamentals of French Cuisine	3.0
CULA 315	Fundamentals of American Cuisine	3.0
HRM 215	Commercial Food Production	4.0
Select three of the following:		8.0
CULA 121	Techniques and Traditions II	
CULA 125	Foundations of Professional Baking	
CULA 216	A la Carte	
CULA 220	Patisserie I	
CULA 225	Patisserie II	
CULA 226	Patisserie III	
CULA 240	Fundamentals of Chinese Cuisine	
CULA 306	Advanced Italian Cuisine	
CULA 311	Advanced French Technique	
CULA 320	Advanced Culinary Studio	
CULA 325	Garde Manger Laboratory	
CULA 316	Butchery Laboratory	
CULA 330	Charcuterie	
CULA 335	Fundamentals of Indian Cuisine	
CULA 400	Directed Studies with a Master Chef	
CULA 405 [WI]	Culture and Gastronomy I	
CULA 410	Culture and Gastronomy II	
CULA 415	Food Styling and Show Competition	
CULA 425	The Kitchen Garden	
CULA 426	The Kitchen Garden: Summer	
CULA 427	The Kitchen Garden: Fall	
HRM 315	Continental, Ethnic, and Regional Cuisine	
HRM 415	Fine Dining and Services	
Total Credits		24.0

Facilities

The major facility of the Hospitality Management, Culinary Arts and Food Science programs is located on the sixth floor of the Academic Building (http://goodwin.drexel.edu/hcfs/bistro.php). It is a 6,500 square foot space that includes three state-of-the-art commercial kitchens, bakery and laboratories, as well as the Academic Bistro, the student-run restaurant, bar and lounge. The facility also includes a sensory analysis lab, hospitality and gaming lab, conference room and the Les Dames d'Escoffier Library.

Philadelphia Location

A unique feature of the Hospitality Management program at Drexel is that it is located in Philadelphia, with close proximity to New York City, Baltimore, and Washington, as well as the resort centers on the Atlantic seacoast and in the Pocono Mountains. These regions include hundreds of hotels, restaurants, resorts, and casinos that are used for field trips and campus visits by hospitality resource professionals. Students also gain hands-on experience through faculty-directed field trips throughout the region.

Culinary Science

Bachelor of Science Degree: 185.0 quarter credits

About the Program

The Bachelor of Science (BS) in Culinary Science program at Goodwin College combines the creative spirit of the culinary arts with the technical and scientific expertise of the food scientist. Combining courses in culinary arts, hospitality management, and food science, the program includes a strong base in the basic sciences and business.

Culinary scientists learn to integrate and apply knowledge from the disciplines One of chemistry, microbiology, culinary arts, hospitality management, food science, and nutrition in order to preserve, process, package, and distribute foods that are safe, nutritious, and delicious. Students majoring in culinary science are prepared for careers in the food industry such as a research chef or product developer. In such positions, graduates can combine their creative and aesthetic talents with their technical expertise as food scientists.

Career possibilities for someone with a degree in culinary science include numerous positions in food companies such as research and development technologist, quality assurance manager, corporate executive chef, research and development chef, senior culinary research technologist, flavor development laboratory manager, and technical sales representative.

The Culinary Science program is committed to providing a professional, comprehensive, and challenging college experience as it prepares students for a variety of rewarding careers in the culinary field and food science and manufacturing industries. In order to provide students with a well-rounded educational experience, the culinary science curriculum is composed of approximately equal amounts of coursework in liberal arts, business administration, food science, natural sciences, and culinary arts. As part of the Culinary Science BS program, students choose from minors in business administration, entrepreneurship, marketing, or they can select a science concentration.

For more information, visit Goodwin College's Culinary Science (http://goodwin.drexel.edu/sotaps/ugcs.php) web page.

Program Delivery Options

Drexel's BS degrees include courses in the liberal arts, the humanities, sciences, hospitality management and culinary arts. Three business minors are also offered. The BS degree can be completed on a full-time or part-time basis:

Traditional 4-year option, with one co-op experience

Traditional 5-year option, with 3 co-op experiences

Four plus One option BS/MBA combined degree, with co-op experience:
This option combines the four-year BS degree followed by the one-year Professional MBA to qualify freshmen applicants. Incoming freshmen will generally have a minimum of 1300 on the SAT, a GPA of 3.5 or higher, and be in the top 10% of their high school graduating class. For MBA requirements visit the LeBow College Professional MBA web site.

Full-time Status Evening option without co-op experience:
To be eligible, students should have a minimum of two years full-time work experience related to students' majors, and a minimum of one year of college level work. Full-time students are eligible for full-time financial aid packages.

Part-time option without co-op experience:

Students work closely with academic advisors to develop a customized plan of study toward degree completion.

London option:
Students are invited to spend a term in their sophomore, junior or senior year in the Study Abroad Program (http://www.drexel.edu/studyabroad), Drexel in London, while earning up to 18 credits. The program's emphasis is on the global implications of and opportunities within the hospitality industry.

Drexel University and Burlington County College (BCC) option:
(Available for Hospitality Management and Culinary Arts students.) Drexel University and Burlington County College (BCC) have joined together to create a unique educational opportunity: Drexel at BCC. This partnership enables BCC students to earn a bachelor's degree from Drexel University while remaining on BCC's Mount Laurel campus. For more information about the BS in Hospitality, visit the Drexel at BCC (http://www.drexelatbcc.org) web site.

Degree Requirements

Written Analysis and Communication

COM 230	Techniques of Speaking	3.0
COM 310 [WI]	Technical Communication	3.0
ENGL 101	Expository Writing and Reading	3.0
ENGL 102	Persuasive Writing and Reading	3.0
ENGL 103	Analytical Writing and Reading	3.0
UNIV G101	The Drexel Experience	2.0

Mathematical Analysis and Statistics

MATH 101	Introduction to Analysis I [*]	4.0
MATH 102	Introduction to Analysis II [*]	4.0
MATH 239	Mathematics for the Life Sciences	4.0
STAT 201	Introduction to Business Statistics	4.0
STAT 202	Business Statistics II	4.0

Nutrition

NFS 230	Intermediate Nutrition	4.0
NFS 365 [WI]	Nutrition Laboratory: Food and Nutrient Analysis	4.0

Humanities and Social Science

ANTH 101	Introduction to Cultural Diversity	3.0

Biological Sciences

BIO 122	Cells and Genetics	4.5
BIO 126	Physiology and Ecology	4.5

Chemistry

CHEM 101	General Chemistry I	3.5
CHEM 102	General Chemistry II	4.5
CHEM 103	General Chemistry III	5.0
NFS 215	Nutritional Chemistry	3.0
NFS 217	Nutrient Quality & Composition	1.0

Physics

PHYS 103	General Physics I	4.0
PHYS 104	General Physics II	4.0

Food Science Requirements

FDSC 154	Foods: Composition, Interaction and Formulation	4.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
FDSC 350	Experimental Foods: Product Development	3.0
FDSC 450	Food Microbiology	3.0
FDSC 451	Food Microbiology Laboratory	2.0
FDSC 454	Microbiology & Chemistry of Food Safety	3.0
FDSC 456	Food Preservation Processes	3.0
FDSC 460	Food Chemistry	3.0
FDSC 461	Food Analysis	3.0
FDSC 468	Functional Foods	3.0
FDSC 490	Seminar in Food Science	1.0
FDSC 491	Senior Project I	2.0
FDSC 492	Senior Project II	2.0

Hospitality Management/Culinary Arts Requirements

HRM 110	Introduction to the Hospitality Industry	3.0
HRM 120	Principles of Food-Service Management	3.0
HRM 215	Commercial Food Production	4.0
CULA 120	Techniques and Traditions I	3.0
CULA 125	Foundations of Professional Baking	3.0
CULA 291	Culinary Arts Practicum II	6.0
CULA 310	Fundamentals of French Cuisine	3.0
CULA 315	Fundamentals of American Cuisine	3.0
CULA 405 [WI]	Culture and Gastronomy I	3.0
CULA 410	Culture and Gastronomy II	3.0
Business Minor or Science Requirements (see below)		18.0-32.0

Hospitality Management/Culinary Arts Electives

Two CULA or HRM electives	6.0
Free Electives	9.0
Total Credits	185.0-199.0

[*] Students may substitute MATH 181, MATH 182, and MATH 183 with permission from an advisor.

Concentration Requirements 18.0 - 32.0 Credits

Students have the option of either satisfying the requirements for a business minor or completing a science concentration.

Science Concentration Option Requirements

CHEM 230	Quantitative Analysis	4.0
CHEM 231 [WI]	Quantitative Analysis Laboratory	2.0
CHEM 241	Organic Chemistry I	4.0
CHEM 242	Organic Chemistry II	4.0
Select two of the following: [*]		5.0-10.0
BIO 221 & BIO 222	Microbiology and Microbiology Laboratory	
BIO 312	Genetically Modified Foods	
BIO 424	Microbial Physiology	
CHEM 243	Organic Chemistry III	
CHEM 256	Physical Chemistry for Biological Sciences	
CHEM 430	Analytical Chemistry I	
CHEM 431 [WI]	Analytical Chemistry II	
Total Credits		19.0-24.0

[*] BIO 221 + BIO 222 counts as one course.

Business Administration Minor Option

ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
MKTG 301	Introduction to Marketing Management	4.0
MKTG 347	New Product Development	4.0
ORGB 300 [WI]	Organizational Behavior	4.0
Total Credits		20.0

Entrepreneurship Minor Option

ACCT 120	Accounting Essentials for New Ventures	4.0
MGMT 260	Introduction to Entrepreneurship	4.0
MGMT 364	Technology Management	4.0
MGMT 365	Business Plan for Entrepreneurs	4.0
MKTG 301	Introduction to Marketing Management	4.0
MKTG 347	New Product Development	4.0
ORGB 300 [WI]	Organizational Behavior	4.0
Total Credits		28.0

Marketing Minor Option

MKTG 301	Introduction to Marketing Management	4.0
MKTG 347	New Product Development	4.0
MKTG 380	Seminar in Marketing Strategy	4.0
Select three of the following:		12.0
MKTG 324	Marketing Channels and Distribution Systems	
MKTG 326	Marketing Research	
MKTG 353	Business-to-Business Marketing	
MKTG 356	Consumer Behavior	
MKTG 357	Global Marketing	
MKTG 358	Transportation and Logistics	
Total Credits		24.0

Sample Plans of Study

BS in Culinary Science: Science concentration

(See below for the additional plans illustrating the other Business Minor options)

Term 1		Credits
CHEM 101	General Chemistry I	3.5
ENGL 101	Expository Writing and Reading	3.0
HRM 110	Introduction to the Hospitality Industry	3.0
MATH 101	Introduction to Analysis I	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	14.5
Term 2		
ANTH 101	Introduction to Cultural Diversity	3.0
CHEM 102	General Chemistry II	4.5
ENGL 102	Persuasive Writing and Reading	3.0
MATH 102	Introduction to Analysis II	4.0

UNIV G101	The Drexel Experience	1.0
	Term Credits	15.5
Term 3		
CHEM 103	General Chemistry III	5.0
CULA 120	Techniques and Traditions I	3.0
ENGL 103	Analytical Writing and Reading	3.0
FDSC 154	Foods: Composition, Interaction and Formulation	4.0
MATH 239	Mathematics for the Life Sciences	4.0
	Term Credits	19.0
Term 4		
BIO 122	Cells and Genetics	4.5
HRM 120	Principles of Food-Service Management	3.0
NFS 215	Nutritional Chemistry	3.0
NFS 217	Nutrient Quality & Composition	1.0
NFS 230	Intermediate Nutrition	4.0
	Term Credits	15.5
Term 5		
CULA 315	Fundamentals of American Cuisine	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 215	Commercial Food Production	4.0
Free Elective		3.0
	Term Credits	14.0
Term 6		
BIO 126	Physiology and Ecology	4.5
CHEM 230	Quantitative Analysis	4.0
CHEM 231 [WI]	Quantitative Analysis Laboratory	2.0
CHEM 241	Organic Chemistry I	4.0
Culinary Arts (CULA) or HRM (Hospitality Management) elective		3.0
	Term Credits	17.5
Term 7		
CHEM 242	Organic Chemistry II	4.0
COM 230	Techniques of Speaking	3.0
COOP 101	Career Management and Professional Development	0.0
CULA 291	Culinary Arts Practicum II	6.0
Culinary Arts (CULA) or HRM (Hospitality Management) elective		3.0
	Term Credits	16.0
Term 8		
CULA 310	Fundamentals of French Cuisine	3.0
FDSC 350	Experimental Foods: Product Development	3.0
FDSC 456	Food Preservation Processes	3.0
PHYS 103	General Physics I	4.0
Science concentration elective[*]		4.0
	Term Credits	17.0
Term 9		
FDSC 454	Microbiology & Chemistry of Food Safety	3.0
FDSC 461	Food Analysis	3.0
NFS 365 [WI]	Nutrition Laboratory: Food and Nutrient Analysis	4.0
PHYS 104	General Physics II	4.0
	Term Credits	14.0
Term 10		

CULA 125	Foundations of Professional Baking	3.0
CULA 405 [WI]	Culture and Gastronomy I	3.0
FDSC 450	Food Microbiology	3.0
FDSC 451	Food Microbiology Laboratory	2.0
Science concentration elective[*]		4.0
	Term Credits	**15.0**
Term 11		
CULA 410	Culture and Gastronomy II	3.0
FDSC 460	Food Chemistry	3.0
FDSC 468	Functional Foods	3.0
FDSC 491	Senior Project I	2.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	**15.0**
Term 12		
COM 310 [WI]	Technical Communication	3.0
FDSC 490	Seminar in Food Science	1.0
FDSC 492	Senior Project II	2.0
STAT 202	Business Statistics II	4.0
Free Elective		3.0
	Term Credits	**13.0**

Total Credit: 186.0

[*]   See degree requirements (p. 19).

BS in Culinary Science: Minor in Business Administration

Term 1		**Credits**
CHEM 101	General Chemistry I	3.5
ENGL 101	Expository Writing and Reading	3.0
HRM 110	Introduction to the Hospitality Industry	3.0
MATH 101	Introduction to Analysis I	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**14.5**
Term 2		
ANTH 101	Introduction to Cultural Diversity	3.0
CHEM 102	General Chemistry II	4.5
ENGL 102	Persuasive Writing and Reading	3.0
MATH 102	Introduction to Analysis II	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**15.5**
Term 3		
CHEM 103	General Chemistry III	5.0
CULA 120	Techniques and Traditions I	3.0
ENGL 103	Analytical Writing and Reading	3.0
FDSC 154	Foods: Composition, Interaction and Formulation	4.0
MATH 239	Mathematics for the Life Sciences	4.0
	Term Credits	**19.0**
Term 4		
BIO 122	Cells and Genetics	4.5
HRM 120	Principles of Food-Service Management	3.0

NFS 215	Nutritional Chemistry	3.0
NFS 217	Nutrient Quality & Composition	1.0
NFS 230	Intermediate Nutrition	4.0
	Term Credits	**15.5**
Term 5		
CULA 315	Fundamentals of American Cuisine	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 215	Commercial Food Production	4.0
Culinary Arts (CULA) or HRM (Hospitality Management) elective		3.0
	Term Credits	**14.0**
Term 6		
BIO 126	Physiology and Ecology	4.5
ECON 201	Principles of Microeconomics	4.0
ORGB 300 [WI]	Organizational Behavior	4.0
Free Elective		3.0
	Term Credits	**15.5**
Term 7		
COM 230	Techniques of Speaking	3.0
COOP 101	Career Management and Professional Development	0.0
CULA 291	Culinary Arts Practicum II	6.0
ECON 202	Principles of Macroeconomics	4.0
Culinary Arts (CULA) or HRM (Hospitality Management) elective		3.0
	Term Credits	**16.0**
Term 8		
CULA 310	Fundamentals of French Cuisine	3.0
FDSC 350	Experimental Foods: Product Development	3.0
FDSC 456	Food Preservation Processes	3.0
PHYS 103	General Physics I	4.0
	Term Credits	**13.0**
Term 9		
FDSC 460	Food Chemistry	3.0
FDSC 468	Functional Foods	3.0
NFS 365 [WI]	Nutrition Laboratory: Food and Nutrient Analysis	4.0
PHYS 104	General Physics II	4.0
	Term Credits	**14.0**
Term 10		
CULA 125	Foundations of Professional Baking	3.0
CULA 405 [WI]	Culture and Gastronomy I	3.0
FDSC 450	Food Microbiology	3.0
FDSC 451	Food Microbiology Laboratory	2.0
MKTG 301	Introduction to Marketing Management	4.0
	Term Credits	**15.0**
Term 11		
CULA 410	Culture and Gastronomy II	3.0
FDSC 454	Microbiology & Chemistry of Food Safety	3.0
FDSC 461	Food Analysis	3.0
FDSC 491	Senior Project I	2.0
MKTG 347	New Product Development	4.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	**19.0**

Term 12

COM 310 [WI]	Technical Communication	3.0
FDSC 490	Seminar in Food Science	1.0
FDSC 492	Senior Project II	2.0
STAT 202	Business Statistics II	4.0
Free elective		4.0
	Term Credits	**14.0**

Total Credit: 185.0

BS in Culinary Science: Minor in Entrepreneurship

Term 1

		Credits
CHEM 101	General Chemistry I	3.5
ENGL 101	Expository Writing and Reading	3.0
HRM 110	Introduction to the Hospitality Industry	3.0
MATH 101	Introduction to Analysis I	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**14.5**

Term 2

ANTH 101	Introduction to Cultural Diversity	3.0
CHEM 102	General Chemistry II	4.5
ENGL 102	Persuasive Writing and Reading	3.0
MATH 102	Introduction to Analysis II	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**15.5**

Term 3

CHEM 103	General Chemistry III	5.0
CULA 120	Techniques and Traditions I	3.0
ENGL 103	Analytical Writing and Reading	3.0
FDSC 154	Foods: Composition, Interaction and Formulation	4.0
MATH 239	Mathematics for the Life Sciences	4.0
	Term Credits	**19.0**

Term 4

BIO 122	Cells and Genetics	4.5
HRM 120	Principles of Food-Service Management	3.0
NFS 215	Nutritional Chemistry	3.0
NFS 217	Nutrient Quality & Composition	1.0
NFS 230	Intermediate Nutrition	4.0
	Term Credits	**15.5**

Term 5

COM 230	Techniques of Speaking	3.0
CULA 315	Fundamentals of American Cuisine	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 215	Commercial Food Production	4.0
	Term Credits	**14.0**

Term 6

ACCT 120	Accounting Essentials for New Ventures	4.0
BIO 126	Physiology and Ecology	4.5
MGMT 260	Introduction to Entrepreneurship	4.0

ORGB 300 [WI]	Organizational Behavior	4.0
	Term Credits	**16.5**

Term 7

COOP 101	Career Management and Professional Development	0.0
CULA 291	Culinary Arts Practicum II	6.0
MGMT 365	Business Plan for Entrepreneurs	4.0
Culinary Arts (CULA) or HRM (Hospitality Management) elective		3.0
	Term Credits	**13.0**

Term 8

CULA 310	Fundamentals of French Cuisine	3.0
FDSC 350	Experimental Foods: Product Development	3.0
FDSC 456	Food Preservation Processes	3.0
PHYS 103	General Physics I	4.0
	Term Credits	**13.0**

Term 9

FDSC 454	Microbiology & Chemistry of Food Safety	3.0
FDSC 461	Food Analysis	3.0
MGMT 364	Technology Management	4.0
NFS 365 [WI]	Nutrition Laboratory: Food and Nutrient Analysis	4.0
PHYS 104	General Physics II	4.0
	Term Credits	**18.0**

Term 10

CULA 125	Foundations of Professional Baking	3.0
CULA 405 [WI]	Culture and Gastronomy I	3.0
FDSC 450	Food Microbiology	3.0
FDSC 451	Food Microbiology Laboratory	2.0
MKTG 301	Introduction to Marketing Management	4.0
	Term Credits	**15.0**

Term 11

CULA 410	Culture and Gastronomy II	3.0
FDSC 460	Food Chemistry	3.0
FDSC 468	Functional Foods	3.0
FDSC 491	Senior Project I	2.0
MKTG 347	New Product Development	4.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	**19.0**

Term 12

COM 310 [WI]	Technical Communication	3.0
FDSC 490	Seminar in Food Science	1.0
FDSC 492	Senior Project II	2.0
STAT 202	Business Statistics II	4.0
Culinary Arts (CULA) or HRM (Hospitality Management) elective		3.0
	Term Credits	**13.0**

Total Credit: 186.0

BS in Culinary Science: Minor in Marketing

Term 1

		Credits
CHEM 101	General Chemistry I	3.5

ENGL 101	Expository Writing and Reading	3.0
HRM 110	Introduction to the Hospitality Industry	3.0
MATH 101	Introduction to Analysis I	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**14.5**
Term 2		
ANTH 101	Introduction to Cultural Diversity	3.0
CHEM 102	General Chemistry II	4.5
ENGL 102	Persuasive Writing and Reading	3.0
MATH 102	Introduction to Analysis II	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**15.5**
Term 3		
CHEM 103	General Chemistry III	5.0
CULA 120	Techniques and Traditions I	3.0
ENGL 103	Analytical Writing and Reading	3.0
FDSC 154	Foods: Composition, Interaction and Formulation	4.0
MATH 239	Mathematics for the Life Sciences	4.0
	Term Credits	**19.0**
Term 4		
BIO 122	Cells and Genetics	4.5
HRM 120	Principles of Food-Service Management	3.0
NFS 215	Nutritional Chemistry	3.0
NFS 217	Nutrient Quality & Composition	1.0
NFS 230	Intermediate Nutrition	4.0
	Term Credits	**15.5**
Term 5		
COM 230	Techniques of Speaking	3.0
CULA 315	Fundamentals of American Cuisine	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
Culinary Arts (CULA) or HRM (Hospitality Management) elective		3.0
	Term Credits	**13.0**
Term 6		
BIO 126	Physiology and Ecology	4.5
HRM 215	Commercial Food Production	4.0
STAT 201	Introduction to Business Statistics	4.0
Free Elective		3.0
	Term Credits	**15.5**
Term 7		
COOP 101	Career Management and Professional Development	0.0
CULA 291	Culinary Arts Practicum II	6.0
MKTG 301	Introduction to Marketing Management	4.0
STAT 202	Business Statistics II	4.0
Culinary Arts (CULA) or HRM (Hospitality Management) elective		3.0
	Term Credits	**17.0**
Term 8		
CULA 310	Fundamentals of French Cuisine	3.0
FDSC 350	Experimental Foods: Product Development	3.0
FDSC 456	Food Preservation Processes	3.0
PHYS 103	General Physics I	4.0

Marketing (MKTG) elective		4.0
	Term Credits	**17.0**
Term 9		
FDSC 454	Microbiology & Chemistry of Food Safety	3.0
FDSC 461	Food Analysis	3.0
NFS 365 [WI]	Nutrition Laboratory: Food and Nutrient Analysis	4.0
PHYS 104	General Physics II	4.0
	Term Credits	**14.0**
Term 10		
CULA 125	Foundations of Professional Baking	3.0
CULA 405 [WI]	Culture and Gastronomy I	3.0
FDSC 450	Food Microbiology	3.0
FDSC 451	Food Microbiology Laboratory	2.0
Marketing (MKTG) elective		4.0
	Term Credits	**15.0**
Term 11		
CULA 410	Culture and Gastronomy II	3.0
FDSC 460	Food Chemistry	3.0
FDSC 468	Functional Foods	3.0
FDSC 491	Senior Project I	2.0
MKTG 347	New Product Development	4.0
	Term Credits	**15.0**
Term 12		
COM 310 [WI]	Technical Communication	3.0
FDSC 490	Seminar in Food Science	1.0
FDSC 491	Senior Project I	2.0
MKTG 380	Seminar in Marketing Strategy	4.0
Marketing (MKTG) elective		4.0
	Term Credits	**14.0**

Total Credit: 185.0

Co-op/Career Opportunities

Career Outlook

Depending on what measures one uses, the food processing industry is the largest manufacturing segment of all industries in the US. Employment opportunities for college graduates in the food processing industry are expected to remain strong over the next five years. In fact, an estimated 20,000 positions in food and agriculture are filled by people who have had training in an allied field. The Central Atlantic region is home to a number of food processors and companies that supply ingredients to the food industry, but the industry is global in scope.

Typical career paths for culinary science graduates include the following:

- Food product developer
- Research chef
- Ingredient marketing and sales
- Food quality assurance manager
- Food microbiologist
- Food chemist

- Research food scientist

Co-Op Opportunities

Drexel University has long been known for its co-operative education/ internship programs, which allow students to mix periods of full-time, career-related employment with their studies. All traditional Culinary Science students pursue the 6-month co-op employment. This six-month experience during the junior year can be completed locally or nationally. The following employers have recently offered positions to Drexel's Culinary Science majors:

- Keystone Foods Corporation
- Campbell Soup Company
- Ottens Flavors
- Victory Brewing Company
- David Michael & Company
- Barry-Callebaut
- Virginia Dare Company
- Sweet Ovations

Visit the Drexel Steinbright Career Development Center (http://www.drexel.edu/scdc) page for more detailed information on co-op and post-graduate opportunities.

Facilities

The major facility of the Hospitality Management, Culinary Arts and Food Science programs is located on the sixth floor of the Academic Building (http://goodwin.drexel.edu/hcfs/bistro.php). It is a 6,500 square foot space that includes three state-of-the-art commercial kitchens, bakery and laboratories, as well as the Academic Bistro, the student-run restaurant, bar and lounge. The facility also includes a sensory analysis lab, hospitality and gaming lab, conference room and the Les Dames d'Escoffier Library.

Philadelphia Location

A unique feature of the Hospitality Management program at Drexel is that it is located in Philadelphia, with close proximity to New York City, Baltimore, and Washington, as well as the resort centers on the Atlantic seacoast and in the Pocono Mountains. These regions include hundreds of hotels, restaurants, resorts, and casinos that are used for field trips and campus visits by hospitality resource professionals. Students also gain hands-on experience through faculty-directed field trips throughout the region.

Program Delivery Options

Drexel's BS degrees include courses in the liberal arts, the humanities, sciences, hospitality management and culinary arts. Three business minors are also offered. The BS degree can be completed on a full-time or part-time basis:

Traditional Four-year option, with one co-op experience:
This option includes one six-month period of full-time employment in the junior year.

Four plus One option BS/MBA combined degree, with co-op experience:
This option combines the four-year BS degree followed by the one-year Professional MBA to qualify freshmen applicants. Incoming freshmen will generally have a minimum of 1300 on the SAT, a GPA of 3.5 or higher,

and be in the top 10% of their high school graduating class. For MBA requirements visit the LeBow College Professional MBA web site.

Full-time Status Evening option without co-op experience:
To be eligible, students should have a minimum of two years full-time work experience related to students' majors, and a minimum of one year of college level work. Full-time students are eligible for full-time financial aid packages.

Part-time option without co-op experience:
Students work closely with academic advisors to develop a customized plan of study toward degree completion.

Study Abroad in London:
Students are invited to spend a term in their sophomore, junior or senior year in the Study Abroad Program (http://www.drexel.edu/studyabroad), Drexel in London, while earning up to 18 credits. The program's emphasis is on the global implications of and opportunities within the hospitality industry.

Study Abroad in Osnabruck Germany:
Students have the opportunity to participate in a two week interdisciplinary program which focuses on the practical application of state of the art food processing techniques.

Drexel University and Burlington County College (BCC) option:
(Available for Hospitality Management students.) Drexel University and Burlington County College (BCC) have joined together to create a unique educational opportunity: Drexel at BCC. This partnership enables BCC students to earn a bachelor's degree from Drexel University while remaining on BCC's Mount Laurel campus. For more information about the BS in Hospitality, visit the Drexel at BCC (http://www.drexelatbcc.org) web site.

Engineering Technology

Bachelor of Science: 187.5 - 189.0 quarter credits

About the Program

The BS in Engineering Technology program is designed for students who plan to pursue careers in a variety of design-, production-, and service-related positions. The program provides an integrated educational experience directed towards developing the ability to apply fundamental knowledge to the solution of practical problems in the engineering technology specialty.

Graduates will be able to fill the gap that exists between the engineer/ scientist and the technical and/or production workforce. Concentrations are available in biomedical, electrical, mechanical, and industrial engineering technology.

The engineering technology major provides an integrated educational experience directed toward the development of fundamental knowledge to the solution of practical technological problems. All students enrolled in the program are required to take general education courses, including mathematics, sciences and liberal arts. During their sophomore year, students need to choose one of the four available concentrations:

- Biomedical Engineering Technology (p. 26)
- Electrical Engineering Technology (p. 28)
- Industrial Engineering Technology (p. 29)
- Mechanical Engineering Technology (p. 31)

These concentrations consist of core fundamental courses, technical electives, free electives, and a three-term senior design project reflecting industrial practices. The program distinguishes itself from traditional engineering programs by placing emphasis on the application of theory, by integrating most courses with laboratory experience, and by incorporating faculty with extensive industrial experience.

The program includes full-time and part-time enrollment options. Students pursuing the full-time option can opt for a four-year program with a six-month internship or a five-year program with three six-month co-op cycles.

Engineering technology graduates are uniquely qualified to serve in a variety of functions requiring traditional and nontraditional technological skills. The program also prepares students for graduate study in a variety of fields, including engineering technology, engineering management, business administration, and health-care.

Mission

The mission of the Engineering Technology program is to provide contemporary students with an academic foundation and practical education in engineering technology through an outstanding curriculum and applied research program, and the participation of our students in one of the nation's most successful cooperative educational programs.

Engineering Technology Program Educational Objectives

The Engineering Technology program produces graduates who:

1. Apply discipline-specific theory, experiments and real world experience to interpret, analyze and solve current and emerging technical problems.
2. Communicate clearly and persuasively with technical and non-technical people in oral, written and graphical forms.
3. Function individually and on teams to design quality systems, components or processes in a timely, responsible and creative manner.
4. Demonstrate behavior consistent with professional ethics and are cognizant of social concerns as they relate to the practice of engineering technology.
5. Strive for professional growth and engage in lifelong learning.

Engineering Technology Program Outcomes

The program's outcomes reflect the skills and abilities that the curriculum is designed to provide to students by the time they graduate. These are:

a. an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities.
b. an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies.
c. an ability to conduct standard tests and measurements. to conduct, analyze, and interpret experiments. and to apply experimental results to improve processes.
d. an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives.
e. an ability to function effectively as a member or leader on a technical team.

f. an ability to identify, analyze, and solve broadly-defined engineering technology problems.
g. an ability to apply written, oral, and graphical communication in both technical and non-technical environments. and an ability to identify and use appropriate technical literature.
h. an understanding of the need for and an ability to engage in self-directed continuing professional development.
i. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity.
j. a knowledge of the impact of engineering technology solutions in a societal and global context.
k. a commitment to quality, timeliness, and continuous improvement.

Additional Information

The BS in Engineering Technology program been accredited by the Engineering Technology Accreditation Commission of ABET, Inc., the recognized accreditor of college and university programs in applied science, computing, engineering, and technology.

For additional information, please visit the Engineering Technology (http://goodwin.drexel.edu/sotaps/ugaet.php) web page.

Career Opportunities

Upon graduation, engineering technologists will be able to participate in the design, development, testing, and manufacturing of industrial and electrical equipment, medical devices, consumer products, and other automation equipment. Engineering technologists will serve in industry in many capacities, including:

- Automation design and process engineering
- Mechanical/production engineering
- Electrical engineering and electronics
- Field engineering
- Systems engineering and management
- Environmental engineering
- Quality control
- Sales
- Systems/programming
- Testing engineering

Visit the Drexel Steinbright Career Development Center (http://www.drexel.edu/scdc) page for more detailed information on post-graduate opportunities.

Dual/Accelerated Degree

Transfer Articulation Agreements

The Goodwin College of Professional Studies has transfer articulation agreements with Delaware County Community College (http://www.dccc.edu) (DCCC), Burlington County College (BCC), and Pennsylvania Institute of Technology (PIT), leading to concurrent AS and BS degrees in appropriate areas of study.

Through a unique articulation agreement, students can earn a Bachelor of Science in Engineering Technology from Drexel as well as an Associate of Applied Science Degree at DCCC, BCC, or PIT.

As an added benefit, students can earn certifications recognized by industry and required by employers for entry into the workforce. Each certificate program, usually completed in six months to one year, provides credits that automatically apply to a student's degrees.

For more information contact:

Goodwin College of Professional Studies
Gerry Marekova, Program Manager
gtm23@drexel.edu
215-895- 6253

Delaware County Community College
Admissions Office
admiss@dccc.edu
610-359-5050

Burlington County College
Owen Schugsta, Assistant Director
Ocs23@drexel.edu
856-222-9311 ext. 2053

Pennsylvania Institute of Technology
Gerry Marekova, Program Manager
gtm23@drexel.edu
215-895-6253

Engineering Technology

Biomedical Engineering Technology Concentration

The biomedical engineering technology concentration focuses on the practice of medical equipment operation and support in the clinical environment. This concentration provides students with the knowledge they need to work in the medical field operating complicated diagnostic and patient care equipment.

During the first three years, students of all concentrations in engineering technology take electrical, mechanical, and industrial courses to get a solid, systematic background in different engineering fields. Students are required to complete general and concentration engineering technology courses, technical electives, and free elective courses that permit students great latitude in tailoring the program of study to match their career goals.

Biomedical Engineering Technology Concentration

Degree Requirements

Humanities and Social Sciences Requirements

ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
COM 111	Principles of Communication	3.0
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
HIST 285	Technology in Historical Perspective	3.0
PHIL 315	Engineering Ethics	3.0
Liberal Studies electives		9.0

Basic Science Requirements

CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
PHYS 103	General Physics I	4.0
PHYS 104	General Physics II	4.0

Mathematics Requirements

MATH 110	Precalculus	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
STAT 201	Introduction to Business Statistics	4.0

Engineering Technology Core

EET 201	Circuit Analysis I	4.0
EET 202	Circuit Analysis II	4.0
EET 204	Introduction to Nanotechnology	3.0
EET 205	Digital Electronics with Laboratory	4.0
EET 207	Introduction to Laboratory and Process Control	3.0
EET 311	Modeling of Engineering Systems	4.0
EET 319	PLC Fundamentals	4.0
EET 401	Applied Microcontrollers	3.0
EET 333 [WI]	Non-Destructive Evaluation of Materials	4.0
MET 100	Graphical Communication	3.0
MET 101	Manufacturing Materials	4.0
MET 204	Applied Quality Control	3.0
MET 205	Robotics and Mechatronics	3.0
MET 209	Fluid Power	3.0
MET 213	Applied Mechanics	4.0
MHT 205	Thermodynamics I	3.0
MHT 226	Measurement Techniques and Instrumentation	3.0
INDE 240	Technology Economics	3.0
INDE 370	Industrial Project Management	3.0

Biomedical Engineering Technology Concentration Requirements

BET 301	Healthcare Technology	3.0
BET 302	Biomedical Electronics	4.0
BET 303	Medical Imaging Systems	3.0
BET 305	Clinical Laboratory Equipment	3.0
BIO 107	Cells, Genetics & Physiology	3.0
BIO 108	Cells, Genetics and Physiology Laboratory	1.0
BMES 302	Laboratory II: Biomeasurements	2.0
BMES 335	Biomedical Informatics I	3.0
BMES 391	Biomedical Instrumentation I	3.0
BMES 488	Medical Device Development	3.0

Technical Electives

Students select 6.0 additional credits from any BET, EET, MET, MHT, or INDE courses not already required. See advisor for specific courses.	6.0

Capstone Course Requirements

MET 421 [WI]	Senior Design Project I	3.0
MET 422	Senior Design Project II	3.0
MET 423 [WI]	Senior Design Project III	3.0

Miscellaneous

EET 102	Introduction to Engineering Technology	3.0
UNIV G101	The Drexel Experience	2.0
Free Electives		12.0
Total Credits		187.5

Biomedical Engineering Technology Concentration

Sample Plan of Study

5 YR UG Co-op Concentration

Term 1		Credits
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
EET 102	Introduction to Engineering Technology	3.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
MATH 110	Precalculus	3.0
PHYS 103	General Physics I	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**19.5**
Term 2		
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
MATH 121	Calculus I	4.0
MET 100	Graphical Communication	3.0
PHYS 104	General Physics II	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**15.0**
Term 3		
EET 201	Circuit Analysis I	4.0
EET 207	Introduction to Laboratory and Process Control	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
MATH 122	Calculus II	4.0
MET 101	Manufacturing Materials	4.0
	Term Credits	**18.0**
Term 4		
COM 111	Principles of Communication	3.0
EET 202	Circuit Analysis II	4.0
EET 205	Digital Electronics with Laboratory	4.0
MHT 226	Measurement Techniques and Instrumentation	3.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	**18.0**
Term 5		
EET 204	Introduction to Nanotechnology	3.0
EET 333 [WI]	Non-Destructive Evaluation of Materials	4.0
HIST 285	Technology in Historical Perspective	3.0
MET 205	Robotics and Mechatronics	3.0
MHT 205	Thermodynamics I	3.0
	Term Credits	**16.0**

Term 6		
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
EET 311	Modeling of Engineering Systems	4.0
EET 319	PLC Fundamentals	4.0
MET 213	Applied Mechanics	4.0
	Term Credits	**19.0**
Term 7		
EET 401	Applied Microcontrollers	3.0
INDE 240	Technology Economics	3.0
MET 204	Applied Quality Control	3.0
MET 209	Fluid Power	3.0
PHIL 315	Engineering Ethics	3.0
	Term Credits	**15.0**
Term 8		
BET 301	Healthcare Technology	3.0
BET 302	Biomedical Electronics	4.0
BIO 107	Cells, Genetics & Physiology	3.0
BIO 108	Cells, Genetics and Physiology Laboratory	1.0
BMES 302	Laboratory II: Biomeasurements	2.0
Free Elective		3.0
	Term Credits	**16.0**
Term 9		
BET 303	Medical Imaging Systems	3.0
BET 305	Clinical Laboratory Equipment	3.0
BMES 391	Biomedical Instrumentation I	3.0
BMES 488	Medical Device Development	3.0
INDE 370	Industrial Project Management	3.0
	Term Credits	**15.0**
Term 10		
BMES 335	Biomedical Informatics I	3.0
MET 421 [WI]	Senior Design Project I	3.0
Liberal Studies Elective		3.0
Free Elective		3.0
	Term Credits	**12.0**
Term 11		
MET 422	Senior Design Project II	3.0
Liberal Studies Elective		3.0
Free Elective		3.0
Technical Elective		3.0
	Term Credits	**12.0**
Term 12		
MET 423 [WI]	Senior Design Project III	3.0
Technical elective		3.0
Liberal studies elective		3.0
Free elective		3.0
	Term Credits	**12.0**

Total Credit: 187.5

Engineering Technology

Electrical Engineering Technology Concentration

The electrical engineering technology concentration provides an extensive background in electric circuit analysis and electronics. Students are required to study digital and analog electronics, digital computer design, analysis of electric power systems, and renewable energy.

During the first three years, students of all concentrations in engineering technology take electrical, mechanical, and industrial courses to get a solid, systematic background in different engineering fields. Students are required to complete general and concentration engineering technology courses, technical electives, and free elective courses that permit students great latitude in tailoring the program of study to match their career goals.

Electrical Engineering Technology Concentration

Degree Requirements

Humanites and Social Sciences Requirements

ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
COM 111	Principles of Communication	3.0
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
HIST 285	Technology in Historical Perspective	3.0
PHIL 315	Engineering Ethics	3.0
Liberal studies electives		9.0

Basic Science Requirements

CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
PHYS 103	General Physics I	4.0
PHYS 104	General Physics II	4.0

Mathematics Requirements

MATH 110	Precalculus	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
STAT 201	Introduction to Business Statistics	4.0

Engineering Technology Core

EET 201	Circuit Analysis I	4.0
EET 202	Circuit Analysis II	4.0
EET 204	Introduction to Nanotechnology	3.0
EET 205	Digital Electronics with Laboratory	4.0
EET 207	Introduction to Laboratory and Process Control	3.0
EET 311	Modeling of Engineering Systems	4.0
EET 319	PLC Fundamentals	4.0
EET 333 [WI]	Non-Destructive Evaluation of Materials	4.0
EET 401	Applied Microcontrollers	3.0
MET 100	Graphical Communication	3.0
MET 101	Manufacturing Materials	4.0
MET 204	Applied Quality Control	3.0
MET 205	Robotics and Mechatronics	3.0
MET 209	Fluid Power	3.0
MET 213	Applied Mechanics	4.0
MHT 205	Thermodynamics I	3.0
MHT 226	Measurement Techniques and Instrumentation	3.0
INDE 240	Technology Economics	3.0
INDE 370	Industrial Project Management	3.0

Electrical Engineering Technology Concentration Requirements

EET 206	Analog Electronics I	4.0
EET 313	Signals and Systems I	4.0
EET 317	Analog Electronics II	4.0
EET 322	Electrical Energy Conversion	4.0
EET 323	Electrical Systems Design	3.0
EET 324	Power Electronics	4.0
EET 325	Microprocessors	3.0

Electrical Engineering Technology (EET) Electives	6.0

Select 6.0 additional credits from any BET, EET, MET, MHT or INDE courses not already required. See advisor for specific courses.

Capstone Course Requirements

MET 421 [WI]	Senior Design Project I	3.0
MET 422	Senior Design Project II	3.0
MET 423 [WI]	Senior Design Project III	3.0

Miscellaneous

EET 102	Introduction to Engineering Technology	3.0
UNIV G101	The Drexel Experience	2.0
Free electives		14.0
Total Credits		187.5

Electrical Engineering Technology Concentration

Sample Plan of Study

5 YR UG Co-op

Term 1		Credits
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
EET 102	Introduction to Engineering Technology	3.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
MATH 110	Precalculus	3.0
PHYS 103	General Physics I	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**19.5**

Term 2		
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
MATH 121	Calculus I	4.0
MET 100	Graphical Communication	3.0

PHYS 104	General Physics II	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**15.0**
Term 3		
EET 201	Circuit Analysis I	4.0
EET 207	Introduction to Laboratory and Process Control	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
MATH 122	Calculus II	4.0
MET 101	Manufacturing Materials	4.0
	Term Credits	**18.0**
Term 4		
COM 111	Principles of Communication	3.0
EET 202	Circuit Analysis II	4.0
EET 205	Digital Electronics with Laboratory	4.0
MHT 226	Measurement Techniques and Instrumentation	3.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	**18.0**
Term 5		
EET 204	Introduction to Nanotechnology	3.0
EET 333 [WI]	Non-Destructive Evaluation of Materials	4.0
HIST 285	Technology in Historical Perspective	3.0
MET 205	Robotics and Mechatronics	3.0
MHT 205	Thermodynamics I	3.0
	Term Credits	**16.0**
Term 6		
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
EET 311	Modeling of Engineering Systems	4.0
EET 319	PLC Fundamentals	4.0
MET 213	Applied Mechanics	4.0
	Term Credits	**19.0**
Term 7		
EET 401	Applied Microcontrollers	3.0
INDE 240	Technology Economics	3.0
MET 204	Applied Quality Control	3.0
MET 209	Fluid Power	3.0
PHIL 315	Engineering Ethics	3.0
	Term Credits	**15.0**
Term 8		
EET 206	Analog Electronics I	4.0
EET 322	Electrical Energy Conversion	4.0
EET 325	Microprocessors	3.0
Free elective		3.0
	Term Credits	**14.0**
Term 9		
EET 313	Signals and Systems I	4.0
EET 317	Analog Electronics II	4.0
EET 323	Electrical Systems Design	3.0
INDE 370	Industrial Project Management	3.0
	Term Credits	**14.0**
Term 10		

EET 324	Power Electronics	4.0
MET 421 [WI]	Senior Design Project I	3.0
Liberal studies elective		3.0
Free elective		4.0
	Term Credits	**14.0**
Term 11		
MET 422	Senior Design Project II	3.0
Technical elective		3.0
Liberal studies elective		3.0
Free elective		3.0
	Term Credits	**12.0**
Term 12		
MET 423 [WI]	Senior Design Project III	3.0
Technical elective		3.0
Liberal studies elective		3.0
Free elective		4.0
	Term Credits	**13.0**

Total Credit: 187.5

Engineering Technology

Industrial Engineering Technology Concentration

The industrial engineering technology concentration provides students with knowledge and skills in management and relevant engineering technology disciplines for manufacturing, service, and healthcare enterprises, including automation, logistics, scheduling, simulation, maintainability, and advanced manufacturing processes. Students learn how to co-ordinate, integrate, and optimize people, machines, materials, and energy to improve efficiency, sustainability, quality, and environment.

During the first three years, students of all concentrations in engineering technology take electrical, mechanical, and industrial courses to get a solid, systematic background in different engineering fields. Students are required to complete general and concentration engineering technology courses, technical electives, and free elective courses that permit students great latitude in tailoring the program of study to match their career goals.

Industrial Engineering Technology Concentration

Degree Requirements

Humanities and Social Sciences Requirements

ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
COM 111	Principles of Communication	3.0
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
HIST 285	Technology in Historical Perspective	3.0

PHIL 315	Engineering Ethics	3.0
Liberal Studies electives		9.0
Basic Science Requirements		
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
PHYS 103	General Physics I	4.0
PHYS 104	General Physics II	4.0
Mathematics Requirements		
MATH 110	Precalculus	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
STAT 201	Introduction to Business Statistics	4.0
Engineering Technology Core		
EET 201	Circuit Analysis I	4.0
EET 202	Circuit Analysis II	4.0
EET 204	Introduction to Nanotechnology	3.0
EET 205	Digital Electronics with Laboratory	4.0
EET 207	Introduction to Laboratory and Process Control	3.0
EET 311	Modeling of Engineering Systems	4.0
EET 319	PLC Fundamentals	4.0
EET 333 [WI]	Non-Destructive Evaluation of Materials	4.0
EET 401	Applied Microcontrollers	3.0
MET 100	Graphical Communication	3.0
MET 101	Manufacturing Materials	4.0
MET 204	Applied Quality Control	3.0
MET 205	Robotics and Mechatronics	3.0
MET 209	Fluid Power	3.0
MET 213	Applied Mechanics	4.0
MHT 205	Thermodynamics I	3.0
MHT 226	Measurement Techniques and Instrumentation	3.0
INDE 240	Technology Economics	3.0
INDE 370	Industrial Project Management	3.0
Industrial Engineering Technology Concentration Requirements		
ACCT 115	Financial Accounting Foundations	4.0
ECON 202	Principles of Macroeconomics	4.0
FIN 301	Introduction to Finance	4.0
INDE 300	Quality Management	3.0
INDE 350	Industrial Engineering Simulation	3.0
INDE 363	Operations Research for Engineering II	3.0
INDE 365	Systems Analysis Methods I	3.0
INDE 366	Systems Analysis Methods II	3.0
INDE 375	Quality Improvement by Experimental Design	4.0
IET Technical Electives		
Students select 6.0 additional credits from any BET, EET, MET, MHT, INDE, OPM, or MKT courses not already required. See advisor for specific courses.		6.0
Capstone Course Requirements		
MET 421 [WI]	Senior Design Project I	3.0
MET 422	Senior Design Project II	3.0
MET 423 [WI]	Senior Design Project III	3.0
Miscellaneous		
EET 102	Introduction to Engineering Technology	3.0

UNIV G101	The Drexel Experience	2.0
Free Electives		8.0
Total Credits		186.5

Industrial Engineering Technology Concentration

Sample Plan of Study

5 YR UG Co-op Concentration

Term 1		Credits
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
EET 102	Introduction to Engineering Technology	3.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
MATH 110	Precalculus	3.0
PHYS 103	General Physics I	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**19.5**
Term 2		
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
MATH 121	Calculus I	4.0
MET 100	Graphical Communication	3.0
PHYS 104	General Physics II	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**15.0**
Term 3		
EET 201	Circuit Analysis I	4.0
EET 207	Introduction to Laboratory and Process Control	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
MATH 122	Calculus II	4.0
MET 101	Manufacturing Materials	4.0
	Term Credits	**18.0**
Term 4		
COM 111	Principles of Communication	3.0
EET 202	Circuit Analysis II	4.0
EET 205	Digital Electronics with Laboratory	4.0
MHT 226	Measurement Techniques and Instrumentation	3.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	**18.0**
Term 5		
EET 204	Introduction to Nanotechnology	3.0
EET 333 [WI]	Non-Destructive Evaluation of Materials	4.0
HIST 285	Technology in Historical Perspective	3.0
MET 205	Robotics and Mechatronics	3.0
MHT 205	Thermodynamics I	3.0
	Term Credits	**16.0**
Term 6		
COM 230	Techniques of Speaking	3.0

ECON 201	Principles of Microeconomics	4.0
EET 311	Modeling of Engineering Systems	4.0
EET 319	PLC Fundamentals	4.0
MET 213	Applied Mechanics	4.0
	Term Credits	**19.0**
Term 7		
EET 401	Applied Microcontrollers	3.0
INDE 240	Technology Economics	3.0
MET 204	Applied Quality Control	3.0
MET 209	Fluid Power	3.0
PHIL 315	Engineering Ethics	3.0
	Term Credits	**15.0**
Term 8		
ACCT 115	Financial Accounting Foundations	4.0
ECON 202	Principles of Macroeconomics	4.0
INDE 300	Quality Management	3.0
INDE 350	Industrial Engineering Simulation	3.0
	Term Credits	**14.0**
Term 9		
FIN 301	Introduction to Finance	4.0
INDE 363	Operations Research for Engineering II	3.0
INDE 365	Systems Analysis Methods I	3.0
INDE 370	Industrial Project Management	3.0
	Term Credits	**13.0**
Term 10		
INDE 366	Systems Analysis Methods II	3.0
MET 421 [WI]	Senior Design Project I	3.0
Liberal studies elective		3.0
Free electives		5.0
	Term Credits	**14.0**
Term 11		
INDE 375	Quality Improvement by Experimental Design	4.0
MET 422	Senior Design Project II	3.0
Technical elective (See advisor)		4.0
Liberal studies elective		3.0
	Term Credits	**14.0**
Term 12		
MET 423 [WI]	Senior Design Project III	3.0
Technical elective (See advisor)		3.0
Liberal studies elective		3.0
Free elective		3.0
	Term Credits	**12.0**

Total Credit: 187.5

Engineering Technology

Mechanical Engineering Technology Concentration

The mechanical engineering technology concentration stresses on the design, development, testing, and manufacturing of industrial machinery, consumer and biomedical products, CNC (Computer Numerical Control), prototyping machinery, and similar equipment. The concentration includes study in computer graphics, statics, dynamics, stress analysis, fluid dynamics, and Computer Aided Engineering (CAE) tools, including instrumentation and testing procedures of various industrial systems.

During the first three years, students of all concentrations in engineering technology take electrical, mechanical, and industrial courses to get a solid, systematic background in different engineering fields. Students are required to complete general and concentration engineering technology courses, technical electives, and free elective courses that permit students great latitude in tailoring the program of study to match their career goals.

Mechanical Engineering Technology Concentration

Degree Requirements

Humanities and Social Sciences Requirements

ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
COM 111	Principles of Communication	3.0
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
HIST 285	Technology in Historical Perspective	3.0
PHIL 315	Engineering Ethics	3.0
Liberal Studies electives		9.0
Basic Science Requirements		
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
PHYS 103	General Physics I	4.0
PHYS 104	General Physics II	4.0
Mathematics Requirements		
MATH 110	Precalculus	3.0
MATH 121	Calculus I	4.0
MATH 122	Calculus II	4.0
STAT 201	Introduction to Business Statistics	4.0
Engineering Technology Core		
EET 201	Circuit Analysis I	4.0
EET 202	Circuit Analysis II	4.0
EET 204	Introduction to Nanotechnology	3.0
EET 205	Digital Electronics with Laboratory	4.0
EET 311	Modeling of Engineering Systems	4.0
EET 207	Introduction to Laboratory and Process Control	3.0
EET 319	PLC Fundamentals	4.0
EET 333 [WI]	Non-Destructive Evaluation of Materials	4.0
EET 401	Applied Microcontrollers	3.0
MET 100	Graphical Communication	3.0
MET 101	Manufacturing Materials	4.0
MET 204	Applied Quality Control	3.0
MET 205	Robotics and Mechatronics	3.0
MET 209	Fluid Power	3.0

MET 213	Applied Mechanics	4.0
MHT 205	Thermodynamics I	3.0
MHT 226	Measurement Techniques and Instrumentation	3.0
INDE 240	Technology Economics	3.0
INDE 370	Industrial Project Management	3.0
Mechanical Engineering Technology Concentration Requirements		
MET 316	Computer Numerical Control	3.0
MET 407	Manufacturing Processes	3.0
MET 408	MFG Information Management	3.0
MHT 206	Thermodynamics II	3.0
MHT 222	Applied Dynamics I	3.0
MHT 301	Fluid Mechanics I	3.0
MHT 314	Thermo and Heat Transfer Analysis	3.0
MHT 401	Mechanical Design I	4.0
MHT Technical Electives		
Students select 6.0 additional credits from any BET, EET, MET, MHT or INDE courses not already required. See advisor for specific courses.		6.0
Capstone Course Requirements		
MET 421 [WI]	Senior Design Project I	3.0
MET 422	Senior Design Project II	3.0
MET 423 [WI]	Senior Design Project III	3.0
Miscellaneous		
EET 102	Introduction to Engineering Technology	3.0
UNIV G101	The Drexel Experience	2.0
Free Electives		15.0
Total Credits		187.5

Mechanical Engineering Technology Concentration

Plan of Study

5 YR UG Co-op Concentration

Term 1		Credits
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
EET 102	Introduction to Engineering Technology	3.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
MATH 110	Precalculus	3.0
PHYS 103	General Physics I	4.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**19.5**
Term 2		
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
MATH 121	Calculus I	4.0
MET 100	Graphical Communication	3.0
PHYS 104	General Physics II	4.0

UNIV G101	The Drexel Experience	1.0
	Term Credits	**15.0**
Term 3		
EET 201	Circuit Analysis I	4.0
EET 207	Introduction to Laboratory and Process Control	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
MATH 122	Calculus II	4.0
MET 101	Manufacturing Materials	4.0
	Term Credits	**18.0**
Term 4		
COM 111	Principles of Communication	3.0
EET 202	Circuit Analysis II	4.0
EET 205	Digital Electronics with Laboratory	4.0
MHT 226	Measurement Techniques and Instrumentation	3.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	**18.0**
Term 5		
EET 204	Introduction to Nanotechnology	3.0
EET 333 [WI]	Non-Destructive Evaluation of Materials	4.0
HIST 285	Technology in Historical Perspective	3.0
MET 205	Robotics and Mechatronics	3.0
MHT 205	Thermodynamics I	3.0
	Term Credits	**16.0**
Term 6		
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
EET 311	Modeling of Engineering Systems	4.0
EET 319	PLC Fundamentals	4.0
MET 213	Applied Mechanics	4.0
	Term Credits	**19.0**
Term 7		
EET 401	Applied Microcontrollers	3.0
INDE 240	Technology Economics	3.0
MET 204	Applied Quality Control	3.0
MET 209	Fluid Power	3.0
PHIL 315	Engineering Ethics	3.0
	Term Credits	**15.0**
Term 8		
MET 316	Computer Numerical Control	3.0
MET 408	MFG Information Management	3.0
MHT 206	Thermodynamics II	3.0
MHT 222	Applied Dynamics I	3.0
MHT 301	Fluid Mechanics I	3.0
	Term Credits	**15.0**
Term 9		
INDE 370	Industrial Project Management	3.0
MET 407	Manufacturing Processes	3.0
MHT 314	Thermo and Heat Transfer Analysis	3.0
MHT 401	Mechanical Design I	4.0
	Term Credits	**13.0**
Term 10		

MET 421 [WI]	Senior Design Project I	3.0
Liberal studies elective		3.0
Free electives		7.0
	Term Credits	**13.0**
Term 11		
MET 422	Senior Design Project II	3.0
Technical elective (See advisor)		3.0
Liberal etudies elective		3.0
Free elective		4.0
	Term Credits	**13.0**
Term 12		
MET 423 [WI]	Senior Design Project III	3.0
Technical elective (See advisor)		3.0
Liberal studies Elective		3.0
Free elective		4.0
	Term Credits	**13.0**

Total Credit: 187.5

General Studies

Bachelor of Science Degree: 180.0 quarter credits

About the Program

The BS in General Studies program is designed for students who wish to gain a breadth of knowledge in the humanities, social sciences, and natural sciences. In addition, general studies students focus on a particular area of interest by following one of the concentrations that exist in the program:

Individualized Studies

This is a concentration designed for individuals with a diverse college background and varied educational interests that cannot be captured in a single degree program. In consultation with their academic advisor, students select a specialization within the concentration according to their interests. Students have the opportunity to experiment in a variety of academic subjects through a generous amount of free electives. An attractive feature is that students can complete certificate programs en route to their BS degree.

Liberal Studies

The concentration in liberal studies provides a broad-based liberal arts education that increases one's appreciation of the world at large and lays the necessary groundwork for graduate study. All liberal studies students take courses in communication, art or architecture history, literature, philosophy, history, political science, psychology, anthropology/sociology, and liberal studies electives. The final 36.0 credits in the course of study comprise the student's concentration requirements. Students choose to concentrate in either humanities or social sciences. The humanities concentration usually appeals to students interested in focusing on the fine arts, foreign language, literature, or writing. The social science concentration is excellent preparation for graduate school (including law school), research, and careers in which one would deal extensively with people.

Physical Sciences

A concentration in physical sciences can lead to graduate school, careers in research and, with the selection of natural science courses, medical ,

dental, pharmacy, and veterinary school. Students take courses in the following areas: calculus, biology, chemistry, and physics.

Faculty

The major in general studies draws on the strengths of faculty teaching out of several departments, schools and colleges at Drexel University. Students take advantage of the University's faculty in the areas of arts and humanities, social sciences, business, as well as science and technology.

Advising

Students in the BS in General Studies program are advised by an academic advisor (determined alphabetically by last name) who serves as an important resource to students as they progress and manage their educational and career goals.

Students receive one-on-one personal advisement to insure that educational and professional objectives are met within the course of study.

In addition, all the full-time faculty serve as advising resources on career exploration and opportunities. Due to the small nature of the General Studies program, a large majority of the students forge strong relationships with staff and faculty.

For more information on this major, visit Goodwin College's General Studies (http://goodwin.drexel.edu/sotaps/uggs.php) web page.

Individualized Studies Concentration

This is a concentration designed for individuals with a diverse college background and varied educational interests that cannot be captured in a single degree program. In consultation with their academic advisor, students select a specialization within the concentration according to their interests. Students have the opportunity to experiment in a variety of academic subjects through a generous amount of free electives. An attractive feature is that students can complete certificate programs en route to their BS degree.

College Requirements		
GSTD 200	Lifelong Learn Theory & Prac	3.0
GSTD 491	Senior Project in General Studies	3.0
English and Speech Requirements		
ENGL 101	Expository Writing and Reading	3.0
ENGL 102	Persuasive Writing and Reading	3.0
ENGL 103	Analytical Writing and Reading	3.0
COM 230	Techniques of Speaking	3.0
Mathematics Requirements		
MATH 181	Mathematical Analysis I	3.0
MATH 182	Mathematical Analysis II	3.0
MATH 183	Mathematical Analysis III	3.0
Computing Requirement *		
Select one of the following:		3.0
CS 161	Introduction to Computing	
CS 171	Computer Programming I	
CT 220	Database I	
CT 230	Web Development I	
PRST 211	Computer Applications for Professionals	

| PRST 212 | Creative Studies in the World Wide Web | |
| Additional computing course options, with Advisor approval | | |

Upper Level Course Requirements

As students choose electives from the categories below, a minimum of 36.0 credits must be upper-level courses (typically 300-level and above).

Natural Science Electives

Students select 9.0 credits from the following: ANAT, BIO, CHEM, FDSC, NFS, PHEV, PHYS. Courses from other departments may be considered with advisor approval.	9.0

Specialization Requirements

Students must complete 45.0 credits within an area of specialization. The specialization is a set of courses built around a cohesive area of study. An academic advisor must pre-approve the specialization. The specialization will not appear on the student transcript.	45.0

Liberal Studies Requirements

Students must complete 36.0 credits in Liberal Studies, covering a range of subject areas in the humanities and/or social sciences: anthropology, psychology, sociology, political science, history, philosophy, religion, literature and fine arts. (Arts history or appreciation courses, rather than applied courses.)	36.0

Free Electives	60.0
Total Credits	180.0

*   Courses older than three years will not be transferred into the curriculum.

Liberal Studies Concentration

A concentration in Liberal Studies provides a broad-based liberal arts education that increases one's appreciation of the world at large and lays the necessary groundwork for graduate study. All liberal studies students take courses in communication, art or architecture history, literature, philosophy, history, political science, psychology, anthropology, sociology, and liberal studies electives.

The final 36.0 credits in the course of study comprise the student's concentration requirements. Students choose to concentrate in either humanities or social sciences. The humanities concentration usually appeals to students interested in focusing on the fine arts, foreign language, literature, or writing. The social science concentration is excellent preparation for graduate school (including law school), research, and careers in which one would deal extensively with people.

College Requirements

GSTD 200	Lifelong Learn Theory & Prac	3.0
GSTD 491	Senior Project in General Studies	3.0

English and Speech Requirements

ENGL 101	Expository Writing and Reading	3.0
ENGL 102	Persuasive Writing and Reading	3.0
ENGL 103	Analytical Writing and Reading	3.0
COM 230	Techniques of Speaking	3.0

Mathematics Requirements

MATH 181	Mathematical Analysis I	3.0
MATH 182	Mathematical Analysis II	3.0
Computing Requirement *		3.0

Select one of the following:

CS 161	Introduction to Computing	
CS 171	Computer Programming I	
CT 230	Web Development I	
CT 220	Database I	
PRST 211	Computer Applications for Professionals	
PRST 212	Creative Studies in the World Wide Web	
Additional computing course options, with Advisor approval.		

Natural Science Electives

Students selct 9.0 credits from the following: ANAT, BIO, CHEM, ENVS, FDSC, FNS, PHEV, PHYS. Couress from other departments may be considered with advisor approval.	9.0

Arts and Humanities Electives

Fine Arts (ARTH, MUSC, THTR)	9.0
History (HIST)	9.0
Literature (ENGL)	9.0
Phillosophy (PHIL) or Religion	9.0

Social Science Electives

Anthropology (ANTH) or Sociology (SOC)	9.0
Communication (COM) or Writing (WRIT)	9.0
Political Science (PSCI)	9.0
Psychology (PSY)	9.0
Africana (AFAS) or Women's Studies (WMS)	3.0

Concentration Requirements

Students must complete 36.0 credits within an area of concentration focusing on the humanities and/or social sciences. Courses must be upper level with at least 18.0 credits selected from one discipline. Social Science students are required to take CAT 360 Applied Organizational Research or SOC 250.	36.0

Free Electives	33.0
Total Credits	180.0

*   Courses older than three years will not be transferred into the curriculum.

Physical Science Concentration

The Physical Sciences concentration provides individuals with the opportunity to focus on coursework in mathematics and the natural sciences. The concentration can lead to graduate school, careers in research and, with the selection of natural science courses, medical , dental, pharmacy, and veterinary school. Students take courses in the following areas: calculus, biology, chemistry, and physics.

College Requirements

GSTD 200	Lifelong Learn Theory & Prac	3.0
GSTD 491	Senior Project in General Studies	3.0

English and Communication Requirements

ENGL 101	Expository Writing and Reading	3.0
ENGL 102	Persuasive Writing and Reading	3.0
ENGL 103	Analytical Writing and Reading	3.0
COM 230	Techniques of Speaking	3.0
COM 310 [WI]	Technical Communication	3.0
Mathematics Requirements		9.0-12.0

Select one of the following sequences:

	Mathematical Analysis		
MATH 181	Mathematical Analysis I	
MATH 182	Mathematical Analysis II	
MATH 183	Mathematical Analysis III	
	Calculus	
MATH 121	Calculus I	
MATH 122	Calculus II	
MATH 123	Calculus III	

Computing Requirement [*]

Select one of the following:		3.0
CS 161	Introduction to Computing	
CS 171	Computer Programming I	
CT 220	Database I	
CT 230	Web Development I	
PRST 211	Computer Applications for Professionals	
PRST 212	Creative Studies in the World Wide Web	
	Additional computing course options, with Advisor approval.	

Historical Perspectives in Science

Select one of the following:		3.0
HIST 280	History of Science: Ancient to Medieval	
HIST 281	History of Science: Enlightenment to Modernity	
HIST 282	History of Science: Medieval to Enlightenment	
HIST 285	Technology in Historical Perspective	
HIST 286	Exploration in Technology and Gender	

Philosophical Issues in Science

Select one of the following:		3.0
BMES 338	Biomedical Ethics and Law	
PHIL 321	Biomedical Ethics	
PHIL 351	Philosophy of Technology	
PHIL 361	Philosophy of Science	

Physical Science Requirements

Biology [*]

BIO 161	General Biology I	3.0
BIO 162	General Biology II	3.0
BIO 163	General Biology III	3.0

Chemistry

CHEM 161	General Chemistry I	3.0
CHEM 162	General Chemistry II	3.0
CHEM 163	General Chemistry III	3.0
CHEM 164	General Chemistry Laboratory I	2.0
CHEM 165	General Chemistry Laboratory II	2.5

Physics 9.0-15.0

	Select one of the following sequences	
	Applied Physics	
PHYS 182	Applied Physics I	
PHYS 183	Applied Physics II	
PHYS 184	Applied Physics III	
	Fundamentals of Physics	
PHYS 185	Fundamentals of Physics Lecture I	
PHYS 186	Physics I-A	
PHYS 188	Physics II-A	
PHYS 189	Fundamentals of Physics Lecture II	

PHYS 280	Fundamentals of Physics Lecture III	
PHYS 282	Fundamentals of Physics Laboratory III	

Physical Science Electives	
Students must complete 27.0 credits of natural science electives. Courses must be upper level in biology, chemistry, physics or environmental science.	27.0
Liberal Studies Electives	
Students must complete 27.0 credits covering a range of subjects that may include: anthropology, economics, fine arts, history, literature, music philosophy, political science, psychology, sociology, etc.	27.0
Free Electives	55.5
Total Credits	180.0-189.0

[*] Courses older than three years will not be transferred into the curriculum.

Co-op/Career Opportunities

A well-rounded education results in an enriched view of the world. Students majoring in General Studies find careers in diverse areas, taking skills they learn at Drexel to their future endeavors.

- The physical science concentration can lead to careers in scientific research.
- The liberal studies concentration can lead to careers or graduate study in the humanities or the fields that deal extensively with people.
- The individualized studies concentration is extremely flexible. Individualized studies students are generally self-directed and want a program they can tailor to their personal and professional interests.

Some General Studies students are already established in their careers and simply need a bachelor's degree to move into higher positions within their organizations and industries and/or to pursue a master's degree.

Goodwin College 's General Studies BS degree is designed for students planning to pursue graduate studies in professional areas such as law, dental, medical, pharmacy, and veterinary school.

Hospitality Management

About the Program

Bachelor of Science: 182.0 quarter credits

The hospitality management major at Drexel University prepares students for leadership positions in the lodging, food service, and tourism and gaming industries. It also provides the necessary foundation for graduate school.

The hospitality management program recognizes the critical importance of an interdisciplinary education with a global perspective for tomorrow's leaders and managers. Committed to building student knowledge across functional areas and contributing disciplines, the program allows for increased specialization with concentrations in one of four areas:

- Food and Beverage Management
- Gaming and Resort Management
- Travel and Tourism
- Hotel Administration

Home to one of the top hospitality programs in the region, Drexel prides itself on its reputation for progressive, high-quality education. The thriving metropolis of Philadelphia serves as the learning lab for these unique programs. As the sixth largest city in the United States, Philadelphia is in the midst of a restaurant renaissance featuring world-class cuisine and entertainment. Student-focused faculty members are recognized for their professional affiliations, research, published work, and above all, teaching.

Students also receive a business minor with a choice of one of three areas:

- Business Administration
- Marketing
- Entrepreneurship

For more information, visit the Hospitality Management Programs (http://goodwin.drexel.edu/sotaps/ughm.php) web site.

Program Delivery Options

Drexel's BS degrees include courses in the liberal arts, the humanities, sciences, hospitality management and culinary arts. Three business minors are also offered. The BS degree can be completed on a full-time or part-time basis:

Traditional Four-year option, with one co-op experience:
This option includes one six-month period of full-time employment in the junior year.

Four plus One option BS/MBA combined degree, with co-op experience:
This option combines the four-year BS degree followed by the one-year Professional MBA to qualify freshmen applicants. Incoming freshmen will generally have a minimum of 1300 on the SAT, a GPA of 3.5 or higher, and be in the top 10% of their high school graduating class. For MBA requirements visit the LeBow College Professional MBA web site.

Full-time Status Evening option without co-op experience:
To be eligible, students should have a minimum of two years full-time work experience related to students' majors, and a minimum of one year of college level work. Full-time students are eligible for full-time financial aid packages.

Part-time option without co-op experience:
Students work closely with academic advisors to develop a customized plan of study toward degree completion.

London option:
Students are invited to spend a term in their sophomore, junior or senior year in the Study Abroad Program (http://www.drexel.edu/studyabroad), Drexel in London, while earning up to 18 credits. The program's emphasis is on the global implications of and opportunities within the hospitality industry.

Drexel University and Burlington County College (BCC) option:
(Available for Hospitality Management and Culinary Arts students.) Drexel University and Burlington County College (BCC) have joined together to create a unique educational opportunity: Drexel at BCC. This partnership enables BCC students to earn a bachelor's degree from Drexel University while remaining on BCC's Mount Laurel campus. For

more information about the BS in Hospitality, visit the Drexel at BCC (http://www.drexelatbcc.org) web site.

Degree Requirements

General Education Requirements

COM 230	Techniques of Speaking	3.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
MATH 101	Introduction to Analysis I	4.0
NFS 101	Introduction to Nutrition & Food	3.0
UNIV G101	The Drexel Experience	2.0
Foreign Language Courses or Arts and Humanities Electives [*]		12.0
Social Sciences		
ANTH 101	Introduction to Cultural Diversity	3.0
Social Science Electives [†]		9.0
Hospitality Major Requirements		
CULA 115	Culinary Fundamentals	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 110	Introduction to the Hospitality Industry	3.0
HRM 120	Principles of Food-Service Management	3.0
HRM 130	Tourism I	3.0
HRM 135	Tourism II	3.0
HRM 150	Customer Service	3.0
HRM 160	Laws of the Hospitality Industry	3.0
HRM 200	Software for Hospitality Industry	3.0
HRM 215	Commercial Food Production	4.0
HRM 220	Purchasing for the Hospitality Industry	3.0
HRM 225	Equipment Design and Layout	3.0
HRM 310	Hospitality Accounting Systems	3.0
HRM 320	Hospitality Management Information Systems	3.0
HRM 325	Hotel Rooms Division Management	3.0
HRM 330	Hotel and Restaurant Marketing	3.0
HRM 335	Beverage Management	3.0
HRM 360	Hospitality Industry Public Relations	3.0
HRM 415	Fine Dining and Services	4.0
HRM 455	Hospitality Human Resources Management	3.0
HRM 460	Hospitality Leadership	4.0
Concentration Courses		15.0-21.0
Business Minor Requirements (See Options Below)		24.0
Program Electives [‡]		15.0
Free Electives		16.0
Total Credits		182.0-188.0

[*] Students choose three/four classes from the following subject areas: ARTH, COM, ENGL, FMVD, HIST, HUM, JUDA, LING, MUSC, PHIL, PHTO, PRST, PSCI, THTR, WMST. Students can also select any of the language courses to fulfill Arts and Humanities requirements.

[†] Students may choose from AFAS, ANTH, PSY, and SOC courses.

‡ The number of program electives depends on the chosen concentration. Students in the F & B concentration take 15.0 program electives; Students in the HA concentration take 14.0 program electives; students in the T & T concentration take 15.0 program electives; and students in the GRM concentration students take 9.0 program electives.The total number of concentration credits + program electives should come to 30.0 credits.

Concentrations

Food and Beverage Management (F&B)

HRM 250	Contract Foodservice Management	3.0
HRM 315	Continental, Ethnic, and Regional Cuisine	3.0
HRM 340	Catering Management	3.0
HRM 350	Cost Controls in Hospitality	3.0
HRM 435	Wine and Spirits	3.0
Total Credits		15.0

Hotel Management Administration

HRM 326	Hotel Rooms Division Management II	3.0
HRM 345	Convention Management	3.0
HRM 355	Resort Management	3.0
HRM 425	Hospitality Industry Administration	3.0
MKTG 348	Services Marketing	4.0
Total Credits		16.0

Travel and Tourism

HRM 345	Convention Management	3.0
HRM 365	Heritage Tourism	3.0
HRM 385	Tourism Guest Lecture Series	3.0
HRM 395	Economics of Tourism	3.0
HRM 405	Current Issues in Travel and Tourism	3.0
Total Credits		15.0

Gaming and Resort Management

Select three of the following:		9.0
HRM 355	Resort Management	
HRM 370	Gaming and Casino Management I	
HRM 371	Gaming and Casino Management II	
HRM 375	Security and Loss Prevention	
HRM 470	Gaming Legislation, Policy and Law	
HRM 472	Gaming Information Systems	
HRM 475	Current Issues in Gaming	
Total Credits		9.0

Business Minor Requirements

Students have the option of satisfying the business minor requirement by completing one of three possible business minors: General Business Administration, Marketing or Entrepreneurship.

Business Administration Minor Option

ECON 201	Principles of Microeconomics	4.0
ECON 202	Principles of Macroeconomics	4.0
FIN 301	Introduction to Finance	4.0
MKTG 301	Introduction to Marketing Management	4.0
ORGB 300 [WI]	Organizational Behavior (Online version not Writing-Intensive)	4.0
STAT 201	Introduction to Business Statistics	4.0
Total Credits		24.0

Entrepreneurship Minor Option

ACCT 120	Accounting Essentials for New Ventures	4.0
MGMT 260	Introduction to Entrepreneurship	4.0
MGMT 364	Technology Management	4.0
MGMT 365	Business Plan for Entrepreneurs	4.0
Select two of the following: [*]		8.0
BLAW 346	Entrepreneurial Law	
FIN 301	Introduction to Finance [**]	
FIN 335	Entrepreneurial Finance	
MKTG 347	New Product Development	
MGMT 363	Directed Study in Entrepreneurship	
ORGB 300 [WI]	Organizational Behavior (Online version not Writing-Intensive)	
Total Credits		24.0

[*] Students select two of the following (or 8 credits of courses from a different college/school with approval from the Department of Management (http://www.lebow.drexel.edu/Faculty/Departments/Management)).

[**] Prerequisites must be taken as unrestricted electives.

Marketing Minor Option

MKTG 301	Introduction to Marketing Management	4.0
MKTG 380	Seminar in Marketing Strategy	4.0
Select four of the following:		16.0
MKTG 321	Selling and Sales Management	
MKTG 322	Advertising & Integrated Marketing Communications	
MKTG 324	Marketing Channels and Distribution Systems	
MKTG 326	Marketing Research	
MKTG 344	Professional Personal Selling	
MKTG 347	New Product Development	
MKTG 348	Services Marketing	
MKTG 351	Marketing for Non-Profit Organizations	
MKTG 353	Business-to-Business Marketing	
MKTG 355	Interactive Marketing	
MKTG 356	Consumer Behavior	
MKTG 357	Global Marketing	
MKTG 358	Transportation and Logistics	
Total Credits		24.0

Sample Plan of Study

4 YR UG Co-op Concentration Gen. Business Minor

Term 1

		Credits
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
HRM 110	Introduction to the Hospitality Industry	3.0
HRM 130	Tourism I	3.0
HRM 200	Software for Hospitality Industry	3.0
MATH 181	Mathematical Analysis I	3.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**16.0**

Term 2

ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 135	Tourism II	3.0
HRM 150	Customer Service	3.0
MATH 182	Mathematical Analysis II	3.0
UNIV G101	The Drexel Experience	1.0
	Term Credits	**17.0**

Term 3

CULA 115	Culinary Fundamentals	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
HRM 120	Principles of Food-Service Management	3.0
HRM 160	Laws of the Hospitality Industry	3.0
MATH 183	Mathematical Analysis III	3.0
NFS 101	Introduction to Nutrition & Food	3.0
	Term Credits	**18.0**

Term 4

ECON 201	Principles of Microeconomics	4.0
HRM 215	Commercial Food Production	4.0
HRM 220	Purchasing for the Hospitality Industry	3.0
HRM 325	Hotel Rooms Division Management	3.0
Concentration Requirement*		3.0
	Term Credits	**17.0**

Term 5

COM 230	Techniques of Speaking	3.0
ECON 202	Principles of Macroeconomics	4.0
HRM 310	Hospitality Accounting Systems	3.0
Concentration Requirement*		3.0
Free Elective		3.0
	Term Credits	**16.0**

Term 6

STAT 201	Introduction to Business Statistics	4.0
Hospitality Management Program Electives (See department for options)		6.0
Concentration Requirement*		3.0
Arts and Humanities Elective		3.0
	Term Credits	**16.0**

Term 7

COOP 101	Career Management and Professional Development	0.0
MKTG 301	Introduction to Marketing Management	4.0
Arts and Humanities Elective		3.0
Concentration Requirement*		3.0
Hospitality Management Program Elective*		3.0
	Term Credits	**13.0**

Term 8

Free Electives		9.0
Arts and Humanities Electives		6.0
	Term Credits	**15.0**

Term 9

HRM 225	Equipment Design and Layout	3.0
HRM 360	Hospitality Industry Public Relations	3.0
Social Science Elective		3.0
Hospitality Management Program Elective (See department for options)		3.0
	Term Credits	**12.0**

Term 10

HRM 330	Hotel and Restaurant Marketing	3.0
ORGB 300 [WI]	Organizational Behavior	4.0
Arts and Humanities Elective		3.0
Concentration Requirement*		4.0
	Term Credits	**14.0**

Term 11

HRM 320	Hospitality Management Information Systems	3.0
HRM 335	Beverage Management	3.0
HRM 450	Course HRM 450 Not Found	3.0
Concentration Requirement*		3.0
Free Elective		3.0
	Term Credits	**15.0**

Term 12

FIN 301	Introduction to Finance	4.0
HRM 455	Hospitality Human Resources Management	3.0
Concentration Requirement*		3.0
Social Science Elective		3.0
	Term Credits	**13.0**

Total Credit: 182.0

*   &See degree requirements (p. 36).

Facilities

The major facility of the Hospitality Management, Culinary Arts and Food Science programs is located on the sixth floor of the Academic Building (http://goodwin.drexel.edu/hcfs/bistro.php). It is a 6,500 square foot space that includes three state-of-the-art commercial kitchens, bakery and laboratories, as well as the Academic Bistro, the student-run restaurant, bar and lounge. The facility also includes a sensory analysis

lab, hospitality and gaming lab, conference room and the Les Dames d'Escoffier Library.

Philadelphia Location

A unique feature of the Hospitality Management program at Drexel is that it is located in Philadelphia, with close proximity to New York City, Baltimore, and Washington, as well as the resort centers on the Atlantic seacoast and in the Pocono Mountains. These regions include hundreds of hotels, restaurants, resorts, and casinos that are used for field trips and campus visits by hospitality resource professionals. Students also gain hands-on experience through faculty-directed field trips throughout the region.

Professional Studies

Bachelor of Science Degree: 180.0 quarter credits

About the Program

The Bachelor of Science in Professional Studies program is a multidisciplinary major that prepares students to move into the professional ranks of an organization. Coursework for the major is constructed around five domains that are central to modern professional life—social science (understanding people in a diverse world), critical thinking, creativity, communication, and business. The curriculum is designed to enable students to become professionals in their field of choice, building on their prior education and experience.

The program is designed for aspiring professionals in any industry. Students are encouraged to take the technical knowledge they already possess in their fields, and learn to utilize it as creative and innovative leaders and communicators.

Career Opportunities

The program helps students from a variety of industries improve their professional skills and strengthen their position in the job market. Industries with employees that may benefit from the Professional Studies include, but are not limited to:

- Telecommunications
- Aerospace
- Pharmaceutical
- Retail

Opportunities for Professional Studies graduates include:

- Career advancement within students' current organizations and industries
- Preparation to pursue a master's degree in a variety of areas

For more information about this major, visit Goodwin College's Professional Studies (http://goodwin.drexel.edu/sotaps/ugps.php) web page.

Degree Requirements

English Composition Requirements

ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
Corporate Communication Requirements		
COM 111	Principles of Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 270 [WI]	Business Communication	3.0
Mathematics Requirements		
MATH 181	Mathematical Analysis I	3.0
MATH 182	Mathematical Analysis II	3.0
MATH 183	Mathematical Analysis III	3.0
College Requirements		
GSTD 200	Lifelong Learning Theory & Practice	3.0
Natural Science Requirements		
Students select 9.0 credits from the following: ANAT, BIO, CHEM, FDSC, NFS, PHEV, or PHYS. Courses from other departments may be considered with Departmental approval.		9.0
Humanities and Social and Behavioral Science Requirements		
ANTH 101	Introduction to Cultural Diversity	3.0
PHIL 323	Organizational Ethics	3.0
PSY 101	General Psychology I	3.0
SOC 101	Introduction to Sociology	3.0
Select one of the following:		3.0
PSY 140	Approaches to Personality	
PSY 150	Introduction to Social Psychology	
PSY 240 [WI]	Abnormal Psychology	
PSY 244	Culture and Personality	
Select one of the following:		3.0
SOC 110	Sociology of the Future	
SOC 210	Race and Ethnic Relations	
SOC 230	Women & Men in a Changing Society	
Students select one internation or intercultural course. Suggested courses include the following:		3.0
COM 345	Intercultural Communication	
GSTD 150	Introduction to World Religions	
Humanities Elective [*]		3.0
Business Minor Requirements [**]		
Select six of the following		24.0
ACCT 115	Financial Accounting Foundations	
BLAW 201	Business Law I	
ECON 201	Principles of Microeconomics	
ECON 202	Principles of Macroeconomics	
FIN 301	Introduction to Finance	
MKTG 301	Introduction to Marketing Management	
ORGB 300 [WI]	Organizational Behavior	
OPM 200	Operations Management	
STAT 201	Introduction to Business Statistics	
Professional Studies Core		
CAT 201 [WI]	Interpersonal Communication	3.0
CAT 302	Customer Service Theory and Practice	3.0
CAT 360	Applied Organizational Research	3.0
CRTV 301	Foundations in Creativity	3.0

CRTV 302	Tools and Techniques in Creativity	3.0
CRTV 303	Creativity in the Workplace	3.0
PROJ 301	Introduction to Project Management	3.0
PRST 211	Computer Applications for Professionals	3.0
PRST 212	Creative Studies in the World Wide Web	3.0
PRST 303	Interpersonal Skills for Virtual Teams	3.0
PRST 330	Career & Professional Development	3.0
PRST 440	Policy Analysis	3.0
PRST 450	Creative Leadership for Professionals	3.0
PRST 491 [WI]	Professional Portfolio I (not available online)	3.0
PRST 492 [WI]	Professional Portfolio II (not available online)	3.0
Free Electives ****		48.0

Depending on transfer credits and professional goals, students may use free electives to pursue a minor/certificate. Students should see their advisor for details.

Total Credits		180.0

*   Students select one humanities elective, such as English (ENGL); history (HIST); philosophy (PHIL); fine arts, or a foreign language course.

**   No more than 2 transferred courses may be used to complete the minor. A grade of C (2.0) or better must be earned in each courses in the Minor in Business.

Property Management

Bachelor of Science Degree: 180.0 quarter credits

About the Program

The Bachelor of Science in Property Management program develops the necessary competencies to be successful in the multidimensional field of property management. The program requires the completion of a minor in Business Administration as well as a set of core property management courses that provide a solid foundation for all professionals.

Concentrations are available in residential property management, affordable housing administration, housing for an aging population, and commercial property management.

Designed for working professionals, Drexel's major in property management provides a strong multidisciplinary education, including a firm foundation in general education and social science, specialized study in property management and construction management, and advanced knowledge of real estate, law, marketing, and human behavior.

Students with prior college credits can complete the program through online study or in an accelerated blended (lecture-online hybrid) format through the Saturday Scholars® (http://goodwin.drexel.edu/academic_ae_ss.php) program.

For additional information, visit Godwin College's Property Management (http://goodwin.drexel.edu/sotaps/ugpm.php) page.

Degree Requirements

General Education Requirements

ANTH 101	Introduction to Cultural Diversity	3.0
COM 111	Principles of Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 280	Public Relations Principles and Theory	3.0
or COM 345	Intercultural Communication	
ENGL 101	Expository Writing and Reading	3.0
ENGL 102	Persuasive Writing and Reading	3.0
ENGL 103	Analytical Writing and Reading	3.0
Select one of the following sequences:		8.0-9.0
MATH 101 & MATH 102	Introduction to Analysis I and Introduction to Analysis II	
MATH 181 & MATH 182 & MATH 183	Mathematical Analysis I and Mathematical Analysis II and Mathematical Analysis III	
PHYS 182	Applied Physics I	3.0
Natural Science Electives *		6.0
PSY 101	General Psychology I	3.0
SOC 101	Introduction to Sociology	3.0
UNIV G101	The Drexel Experience	2.0
Humanities and Social Science Electives **		9.0
Minor in Business Administration ***		
ACCT 115	Financial Accounting Foundations	4.0
BLAW 201	Business Law I	4.0
FIN 301	Introduction to Finance	4.0
MKTG 301	Introduction to Marketing Management	4.0
ORGB 300 [WI]	Organizational Behavior	4.0
STAT 201	Introduction to Business Statistics	4.0
Property Management Core		
CAT 302	Customer Service Theory and Practice	3.0
CMGT 262	Building Codes	3.0
CRTV 301	Foundations in Creativity	3.0
REAL 310	Introduction to Real Estate	3.0
PROJ 301	Introduction to Project Management	3.0
PRST 211	Computer Applications for Professionals	3.0
PRMT 110	Introduction to Property Management	3.0
PRMT 210	Rental Property & Fair Housing Law	3.0
PRMT 215	Building Systems for PRMT I	3.0
PRMT 216	Building Systems for PRMT II	3.0
PRMT 225	Technical Drawings for Property Managers	3.0
PRMT 310	Property Financing & Valuation	3.0
PRMT 315	Property Risk Management	3.0
PRMT 320	Sustainable Property Management	3.0
PRMT 325	Human Resource Strategies - Property Management	3.0
PRMT 330	Property Management Technology	3.0
PRMT 333	Social Responsibility for Property Managers	3.0
PRMT 491	Senior Project in Property Management	3.0
Free Electives		32.0
Suggested Electives		
BACS 200	Foundation of Behavioral Health Care	
CAT 201 [WI]	Interpersonal Communication	
CAT 360	Applied Organizational Research	
CMGT 263	Understanding Construction Drawings	
CRTV 302	Tools and Techniques in Creativity	

CRTV 303	Creativity in the Workplace	
DSMR 231	Retail Principles	
HSAD 316	Health Care across Cultures	
HSAD 323	Health Services and the Elderly	
PHIL 323	Organizational Ethics	
PRMT 340	Managing and Marketing for Retail Properties	
PRMT 345	Managing & Marketing Housing for an Aging Population	
PRMT 350	Affordable Housing Management	
PRMT 356	Military Housing Management	
PRMT 360	Managing & Marketing for Commercial Properties	
PRMT 365	Commercial Property Appraisal	
PRMT 380	Special Topics in PRMT	
PRMT 399	Independent Study in Property Management	
PRST 450	Creative Leadership for Professionals	
SOC 120	Sociology of the Family	
SOC 210	Race and Ethnic Relations	
SOC 240	Urban Sociology	
Concentration Requirement		**15.0-16.0**
Total Credits		180.0-182.0

* Students select 6.0 credits from the following: ANAT, BIO, CHEM, ENVR, FDSC, NFS, PHEV, PHYS. Courses from other departments may be considered with advisor approval.

** Anthropology, African-American studies, fine arts (history of architecture, art, film, music, theatre) foreign language, history, linguistics, literature, philosophy, political science, psychology, sociology, women's studies, writing, etc.

*** No more than 2 transferred courses may be used to complete the Minor in Business. A grade of C (2.0) or better must be earned in each course in the Minor in Business.

Concentrations

Residential Property Management Concentration

PRMT 335	Marketing and Leasing for Residential Properties	3.0
Select four of the following:		12.0
PRMT 340	Managing and Marketing for Retail Properties	
PRMT 345	Managing & Marketing Housing for an Aging Population	
PRMT 350	Affordable Housing Management	
PRMT 355	Student Housing Management	
PRMT 356	Military Housing Management	
Total Credits		15.0

Housing for an Aging Population Concentration

HSAD 323	Health Services and the Elderly	3.0
NURS 370	Issues in Aging and Longevity	4.0
PRMT 335	Marketing and Leasing for Residential Properties	3.0
PRMT 345	Managing & Marketing Housing for an Aging Population	3.0
SOC 125	Sociology of Aging	3.0
Total Credits		16.0

Affordable Housing Administration Concentration

HSAD 323	Health Services and the Elderly	3.0
PRMT 335	Marketing and Leasing for Residential Properties	3.0
PRMT 350	Affordable Housing Management	3.0
SOC 210	Race and Ethnic Relations	3.0
SOC 240	Urban Sociology	3.0
Total Credits		15.0

Commercial Property Management Concentration

PRMT 340	Managing and Marketing for Retail Properties	3.0
PRMT 341	Managing and Marketing Office Buildings	3.0
PRMT 342	Managing and Marketing Industrial Properties	3.0
PRMT 363	Commercial Property Financial Reports	3.0
PRMT 365	Commercial Property Appraisal	3.0
Total Credits		15.0

Minor in Property Management

The minor in property management is designed to provide students with the basic competencies required for the management of residential and commercial real estate. The program presents a comprehensive overview of the multidisciplinary responsibilities of the professional property manager—from leasing a rental unit to maintaining the physical plant.

The minor in property management is a flexible, convenient undergraduate credential for full- or part-time students, both on campus and online. Courses are offered in the fall, winter, spring, and summer, allowing students an opportunity to complete all requirements within one year.

Required Courses

PRMT 110	Introduction to Property Management	3.0
PRMT 210	Rental Property & Fair Housing Law	3.0
PRMT 215	Building Systems for PRMT I	3.0
PRMT 310	Property Financing & Valuation	3.0
PRMT 315	Property Risk Management	3.0
PRMT 325	Human Resource Strategies - Property Management	3.0
PRMT 330	Property Management Technology	3.0
Select one of the following:		3.0
PRMT 216	Building Systems for PRMT II	
PRMT 225	Technical Drawings for Property Managers	
PRMT 335	Marketing and Leasing for Residential Properties	
Total Credits		24.0

Sport Management

Bachelor of Science Degree: 181.0 quarter credits

About the Program

The Bachelor of Science in Sport Management program is designed for students who plan to pursue careers in sport-oriented organizations such as business, media, law, marketing and other similar areas of concentration. This major draws on the strengths of many of the

University's academic programs, including business administration, communications and technology.

Through Drexel's Sport Management program (http://www.drexel.edu/goodwin/programs/smt/default.asp), students master the knowledge and skills necessary for success in professional sport organizations, collegiate athletics, event management and recreation industries.

The program incorporates four main points of emphasis: sport business, sport marketing, sport media and sport law. Covering a wide range of areas of study, this focus allows students to match their skills, abilities and interests with a specific niche within the sport industry. Through the program, students develop a professional portfolio that will include such items as a press kit, facility operations manual, sponsorship deck, and sports contract. Students will then refine their portfolio items and present the final product for review in their senior year.

Coursework

The sport management major consists of 181.0 credits. All students enrolled in the program are required to take 52.0 credits of general education courses plus 24.0 credits of general business. These courses are supplemented by 24.0 credits of free electives.

The balance of the program is based on technical elective courses drawn from four major concentrations, namely: sport business (21.0 credits); sport marketing (18.0 credits); sport law and ethics (21.0 credits); and sport media and technology (18.0 credits).

Degree Completion Options

The Bachelor of Science degree in sport management can be completed in either four or five years:

Five-year option, with co-op experience
This option allows for the greatest amount of employment experience, with three distinct six-month periods of employment included with studies. After the start of the sophomore year, students study or work through all terms, including summers.

Four-year option, with internship experience
This option includes just one six-month period of full-time employment. After the start of the sophomore year, students study or work through all terms, including summers.

For more information about this major, visit Goodwin College's Sport Management (http://www.drexel.edu/goodwin/undergrad/sportmgt.htm) web page.

Degree Requirements

General Education Requirements

ANTH 101	Introduction to Cultural Diversity	3.0
COM 230	Techniques of Speaking	3.0
COM 270 [WI]	Business Communication	3.0
CS 161	Introduction to Computing	3.0
or INFO 101	Introduction to Information Technology	
CT 230	Web Development I	3.0
CT 240	Web Development II	3.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0

ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
MATH 101	Introduction to Analysis I	4.0
MATH 102	Introduction to Analysis II	4.0
UNIV G101	The Drexel Experience	2.0
Three Natural Science Courses [*]		9.0
Two Social Science Courses [**]		6.0
General Business Requirements		
BLAW 201	Business Law I	4.0
BUSN 101	Foundations of Business I	4.0
ACCT 115	Financial Accounting Foundations	4.0
ECON 201	Principles of Microeconomics	4.0
ORGB 300 [WI]	Organizational Behavior	4.0
MKTG 301	Introduction to Marketing Management	4.0
Areas of Sport Management		
Sport Business Courses		
SMT 110	The Business of Sport	3.0
SMT 200	Introduction to Sport Facility and Event Management	3.0
SMT 225	Sports Budgeting	3.0
SMT 320	Economic Aspects of Sports Management	3.0
SMT 340 [WI]	International Aspects of Sport	3.0
Select two of the following:		6.0
SMT 220	Recreation, Wellness & Society	
SMT 240	Olympic Games	
SMT 270	Sports Facility Planning & Management	
SMT 275	Sports Event Management	
Sport Marketing Courses		
SMT 201	Sports Marketing, Promotion, and Public Relations	3.0
SMT 215	Sports Ticket Sales & Operations	3.0
SMT 300	Quantitative Analysis and Statistics for Sports	3.0
SMT 305	Fundraising in Sports	3.0
SMT 307	Corporate Sponsorship in Sports	3.0
Select one of the following:		3.0
SMT 309	Capital Campaigns in Athletics	
SMT 345	Fan Experience Management	
SMT 347	Sport Tourism	
Sport Law and Ethics Courses		
SMT 152	Leadership in Sports & Society	3.0
SMT 230	Sports and the Law	3.0
SMT 255	Legal Foundations of Title IX	3.0
SMT 310	Sports Contracts	3.0
PHIL 325	Ethics in Sports Management	3.0
or SMT 254	Women & Minority Opportunities in Sport	
SMT 260	Sports Agents & Labor Relations	3.0
or SMT 337	Risk Management in Sports	
SMT 235	Sports Administration and Governance	3.0
or SMT 245	NCAA Compliance	
Sport Media and Technology		
SMT 205	Sports Information	3.0

SMT 250 [WI]	Technology and Sport	3.0
SMT 290	Digital Media in Sport	3.0
COM 290	Sports and the Mass Media	3.0
Select two of the following:		6.0
COM 260 [WI]	Fundamentals of Journalism	
COM 280	Public Relations Principles and Theory	
COM 305	Sports Journalism	
COM 335	Electronic Publishing	
Portfolio Requirement		
SMT 401	Professional Portfolio	3.0
Electives		
Free Electives		24.0
Total Credits		181.0

* Natural science courses are any anatomy (ANAT), bioscience and biotechnology (BIO), chemistry (CHEM), food science (FDSC), nutrition and foods (NFS), physics-environmental (PHEV), and physics (PHYS) courses

** Social science courses are any psychology (PSY), sociology (SOC), anthropology (ANTH), and political science (PSCI) courses.

Sample Plan of Study

5 YR UG Co-op Concentration

Term 1		Credits
BUSN 101	Foundations of Business I	4.0
ENGL 101	Composition and Rhetoric I: Inquiry and Exploratory Research	3.0
MATH 101	Introduction to Analysis I	4.0
SMT 110	The Business of Sport	3.0
UNIV G101	The Drexel Experience	1.0
INFO 101 or CS 161	Introduction to Information Technology Introduction to Computing	3.0
	Term Credits	**18.0**
Term 2		
CT 230	Web Development I	3.0
ENGL 102	Composition and Rhetoric II: The Craft of Persuasion	3.0
MATH 102	Introduction to Analysis II	4.0
SMT 200	Introduction to Sport Facility and Event Management	3.0
UNIV G101	The Drexel Experience	1.0
Natural Science Elective		3.0
	Term Credits	**17.0**
Term 3		
ACCT 115	Financial Accounting Foundations	4.0
ANTH 101	Introduction to Cultural Diversity	3.0
CT 240	Web Development II	3.0
ENGL 103	Composition and Rhetoric III: Thematic Analysis Across Genres	3.0
SMT 340 [WI]	International Aspects of Sport	3.0
	Term Credits	**16.0**
Term 4		

BLAW 201	Business Law I	4.0
COM 290	Sports and the Mass Media	3.0
SMT 201	Sports Marketing, Promotion, and Public Relations	3.0
SMT 250 [WI]	Technology and Sport	3.0
Natural Science Elective		3.0
	Term Credits	**16.0**
Term 5		
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
SMT 225	Sports Budgeting	3.0
SMT 230	Sports and the Law	3.0
Natural Science Elective		3.0
	Term Credits	**16.0**
Term 6		
COM 270 [WI]	Business Communication	3.0
SMT 205	Sports Information	3.0
SMT 215	Sports Ticket Sales & Operations	3.0
SMT 255	Legal Foundations of Title IX	3.0
Free Elective		3.0
	Term Credits	**15.0**
Term 7		
MKTG 301	Introduction to Marketing Management	4.0
SMT 152	Leadership in Sports & Society	3.0
SMT 310	Sports Contracts	3.0
Social Science Elective		3.0
Sport Management 'Area' Elective*		3.0
	Term Credits	**16.0**
Term 8		
ORGB 300 [WI]	Organizational Behavior	4.0
SMT 290	Digital Media in Sport	3.0
Two Sport Management 'Area' Electives*		6.0
Free Elective		3.0
	Term Credits	**16.0**
Term 9		
SMT 307	Corporate Sponsorship in Sports	3.0
SMT 309	Capital Campaigns in Athletics	3.0
Sport Management 'Area' Elective*		3.0
Social Science Elective		3.0
Free Elective		3.0
	Term Credits	**15.0**
Term 10		
SMT 300	Quantitative Analysis and Statistics for Sports	3.0
SMT 305	Fundraising in Sports	3.0
Free Elective		3.0
Sport Management 'Area' Elective*		3.0
	Term Credits	**12.0**
Term 11		
Two Sport Management 'Area' Electives*		6.0

Free Electives		6.0
	Term Credits	**12.0**
Term 12		
SMT 401	Professional Portfolio	3.0
Free Electives		6.0
Sport Management 'Area' Elective[*]		3.0
	Term Credits	**12.0**

Total Credit: 181.0

[*]   See degree requirements .

Co-op/Career Opportunities

Co-op Opportunities

Drexel University has long been known for its co-operative education programs, through which students combine periods of full-time, career-related employment with their studies. Co-op employment is required for sport management students and is central to their experience.

Within the sport management major, co-operative education gives students experience in a range of sport related jobs and settings, from coaching to the business of sports to health-enhancing activities. Students may be placed with professional athletic teams, or with organizations aligned with sports (e.g., a sports agency). Co-op experiences are available with many of the region's sports, recreation, and health organizations, including professional sports teams, college athletic departments, sports media networks, non-profit organizations, law firms, youth fitness organizations, fitness centers, sports complexes, and others.

Career Opportunities

The multidisciplinary nature of the sport management program allows its graduates to be ready for a wide range of sport-related professions, including athletic management, sports and recreational activities at all levels (professional, semi-professional, collegiate, scholastic, and youth) within a range of organizations (public, private, community, recreation, scholastic, professional, and amateur), and for varying purposes (competitive, fitness, wellness, and rehabilitation).
Sports management graduates are uniquely qualified for leadership, support, or coaching positions in professional and amateur sports organizations, in recreation and community centers, in high schools and colleges, and in other sports venues, as well as in the health and wellness industry. The program also prepares students for graduate or professional study in a variety of fields including sport management, sports psychology, communication, law, education, business administration, and other fields.

Visit the Drexel Steinbright Career Development Center (http://www.drexel.edu/scdc) page for more information on career opportunities.

Minor in Coaching Leadership

The minor in coaching leadership, open to all undergraduate students across the University, provides the foundation for the effective coaching and managing of athletes at various levels.

On completion of the minor, students will have developed the ability to communicate and motivate athletes, enhance the social and emotional growth of athletes, develop sound physical training programs, use sport skills effectively, inform athletes about the principles of good nutrition, reduce injuries by managing roles better, effectively deal with equipment, facilities, scheduling and team logistics and understand the administrative facets of coaching.

SMT 101	Principles of Coaching	3.0
SMT 102	Principles of Coaching II	3.0
SMT 152	Leadership in Sports & Society	3.0
SMT 203	Sports Conditioning	3.0
SMT 210	Prevention and Care Athletic Injuries	3.0
PSY 245 [WI]	Sports Psychology	3.0
NFS 310	Nutrition and Sports	3.0
SMT 475	Sports Industry Practicum	3.0
Total Credits		24.0

Minor in Emergency Management

Natural or man-made disasters can strike at any time and anywhere. They take many forms—a hurricane, an earthquake, a tornado, a flood, a fire or a hazardous spill, an act of nature or an act of terrorism. Disasters can build over days or weeks, or hit suddenly, without warning. Every year, millions of people face disasters and their consequences.

This minor is designed to equip individuals with the fundamental competencies expected of professionals in the field of emergency management. It provides the knowledge, skills, and abilities necessary to be competent emergency managers.

Students interested in pursuing a minor in emergency management may include individuals majoring in architecture, civil engineering, construction management, criminal justice, political science, and professional studies.

Core Requirements

EMER 210	Hazard Mitigation	3.0
EMER 215	Public Management in Times of Crisis	3.0
EMER 220	Emergency Incident Risk Management	3.0
EMER 225	Infrastructure Disaster Recovery	3.0
Select four of the following:		12.0
CT 222	Security and Information Warfare	
CT 225	Data Mining Technology for Security	
CT 315	Security Management Practice	
CT 393	Information Technology Security Risk Assessment	
CT 395	Information Technology Security I	
CT 412	Information Technology Security Policies	
CT 415	Disaster Recovery and Continuity Planning	
CT 420	Information Technology Security II	
CT 422	Incident Response Best Practices	
CT 432	Information Technology Security Systems Audits	
CT 472	Security Defense Countermeasures	
EMER 235	Public Information Strategies	
EMER 245	Search and Rescue	
EMS 307	Critical Incident Stress Management	
EMS 445	Organizing Community Response in Disasters	
Total Credits		24.0

Minor in Food Science

The minor in food science is designed for students interested in applying the basic sciences to the world's largest industry. The minor should be especially attractive to students in chemistry, chemical engineering, nutrition, and biological sciences, as it provides a background for excellent employment and post-baccalaureate study opportunities in areas closely allied to their basic disciplines.

The minor consists of 25.0 credits. Interested students should consult with a culinary science faculty member to schedule courses appropriate for their background and goals.

Required Courses

FDSC 154	Foods: Composition, Interaction and Formulation	4.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
FDSC 350	Experimental Foods: Product Development	3.0
FDSC 450	Food Microbiology	3.0
FDSC 451	Food Microbiology Laboratory	2.0
FDSC 456	Food Preservation Processes	3.0
FDSC 460	Food Chemistry	3.0
FDSC 461	Food Analysis	3.0
Total Credits		25.0

Minor in Gaming and Casino Operations

The minor in gaming and casino operations provides individuals interested in careers in the casino resort industries with an in depth understanding of the unique aspects of casino and resort operations and management.

This minor focuses on the knowledge, skills, and abilities necessary to become a competent manager in a casino resort. The program is designed for people interested in a career in the casino industry or for existing casino employees looking to advance to higher levels of management.

Required Courses

HRM 110	Introduction to the Hospitality Industry	3.0
HRM 325	Hotel Rooms Division Management	3.0
HRM 355	Resort Management	3.0
HRM 370	Gaming and Casino Management I	3.0
HRM 371	Gaming and Casino Management II	3.0
HRM 470	Gaming Legislation, Policy and Law	3.0
HRM 472	Gaming Information Systems	3.0
HRM 475	Current Issues in Gaming	3.0
Total Credits		24.0

Minor in Real Estate

Designed for students in various disciplines (such as, architecture, business, civil engineering, architectural engineering, fashion merchandising and interior design) the minor in real estate provides the necessary knowledge, skills, and perspective to be successful in the real estate development process. Students will explore the knowledge and skill sets required to create and maintain built environments for living, working and entertainment purposes.

Required Courses

ARCH 432	The Development Process	3.0
CMGT 468	Real Estate	3.0
REAL 310	Introduction to Real Estate	3.0
REAL 320	Real Estate Law - Principle & Practice	3.0
REAL 330	Facilities & Property Management	3.0
REAL 470	Real Estate Investments - Market & Feasibility Analysis	3.0
Select two of the following:		6.0
REAL 471	Advanced Real Estate in Investment & Analysis	
REAL 472	Advanced Market Research & Analysis	
REAL 473	Sales & Marketing of Real Estate	
REAL 474	Real Estate Economics in Urban Markets	
REAL 475	Real Estate Finance	
REAL 476	Real Estate Valuation & Analysis	
Total Credits		24.0

Certificate in Affordable Housing Administration

For students having at least one year of college and two years of work experience, Drexel University offers several different certificate programs in property management. These certificates are designed to provide a professional background in a specified area of property management, and to assist in career goals or prompt additional study in the field.

Requirements

PRMT 110	Introduction to Property Management	3.0
HSAD 323	Health Services and the Elderly	3.0
PRMT 335	Marketing and Leasing for Residential Properties	3.0
PRMT 350	Affordable Housing Management	3.0
PRMT 345	Managing & Marketing Housing for an Aging Population	3.0
SOC 210	Race and Ethnic Relations	3.0
SOC 240	Urban Sociology	3.0
Total Credits		21.0

Certificate in Commerical Property Management

For students having at least one year of college and two years of work experience, Drexel University offers several different certificate programs in property management. These certificates are designed to provide a professional background in a specified area of property management, and to assist in career goals or prompt additional study in the field. Depending on a student's prior educational background, the total number of credits required may be higher due to prerequisites.

Requirements

PRMT 110	Introduction to Property Management	3.0
PRMT 340	Managing and Marketing for Retail Properties	3.0
PRMT 341	Managing and Marketing Office Buildings	3.0
PRMT 342	Managing and Marketing Industrial Properties	3.0
PRMT 363	Commercial Property Financial Reports	3.0
PRMT 365	Commercial Property Appraisal	3.0
Total Credits		18.0

Certificate in Computing Security

The computing security certificate is designed for computing technology professionals who have a BS degree in computing technology or considerable experience in the area, and who are seeking a career change or professional advancement with an additional focus on security.

The curriculum provides a deep understanding of the basic security-related issues and technologies as well as the flexibility to choose additional areas of study tailored to the needs of the individual student.

For additional information about this certificate program, visit the Goodwin School of Technology and Professional Studies (http://goodwin.drexel.edu/sotaps/certug_cst.php) web site.

Required Courses

CT 300	Security Technology Models and Architecture I	3.0
CT 312	Access Control and Intrusion Detection Technology	3.0
CT 325	Operating System Security Architecture I	3.0
CT 336	Internet Protocol Security and Virtual Private Network Technology	3.0
CT 402	Network Security II	3.0
CT 472	Security Defense Countermeasures	3.0
Select two of the following:		6.0
CT 212	Computer Forensics I: Fundamentals	
CT 222	Security and Information Warfare	
CT 295	Public Key Infrastructure Technology	
CT 315	Security Management Practice	
CT 326	Operating System Security Architecture II	
CT 355	Wireless Network Security Technology	
CT 362	Network Auditing Tools	
CT 382	Applied Cryptography	
CT 393	Information Technology Security Risk Assessment	
CT 412	Information Technology Security Policies	
CT 415	Disaster Recovery and Continuity Planning	
CT 422	Incident Response Best Practices	
CT 432	Information Technology Security Systems Audits	
Total Credits		24.0

Certificate in Construction Management

Construction Management I - Fundamentals

18.0 quarter credits

The Construction Management I - Fundamentals Certificate introduces students to the basic concepts of the construction industry.

Students interested in continuing their education after certification are able to apply their coursework and credits directly to the Bachelor of Science in Construction Management (http://www.drexel.edu/catalog/ug/goodwin/cmgt-).

Requirements

CMGT 101	Introduction to Construction Management	3.0
CMGT 161	Building Materials and Construction Methods I	3.0
CMGT 162	Building Materials and Construction Methods II	3.0
CMGT 163	Building Materials and Construction Methods III	3.0
CMGT 261	Construction Safety	3.0
CMGT 263	Understanding Construction Drawings	3.0
Total Credits		18.0

Construction Management II - Construction Science

18.0 quarter credits

The Construction Management II - Construction Science Certificate focuses on introducing students to design concepts relating to heating, ventilation, and air conditioning systems and the integration of these systems into the construction process. In addition, the certificate also

covers the process of estimating as well as building codes involved in construction projects.

Students interested in continuing their education after certification are able to apply their coursework and credits directly to the Bachelor of Science in Construction Management (http://www.drexel.edu/catalog/ug/goodwin/cmgt-).

Requirements

CMGT 266	Building Systems I	3.0
CMGT 267	Building Systems II	3.0
CMGT 363	Estimating I	3.0
CMGT 364	Estimating II	3.0
Select two of the following:		6.0
CMGT 262	Building Codes	
CMGT 264	Construction Management of Field Operations	
CMGT 265	Information Technologies in Construction	
Total Credits		18.0

Construction Management III - Management Concepts

19.0 quarter credits

The Construction Management III - Management Concepts Certificate focuses on construction contracts, specifications, and practices with regard to business law and liability. The certificate also covers value engineering and construction planning, scheduling, network systems, as well as the communications required for project control and claims prevention.

Students interested in continuing their education after certification are able to apply their coursework and credits directly to the Bachelor of Science in Construction Management (http://www.drexel.edu/catalog/ug/goodwin/cmgt-).

Requirements

CMGT 361	Contracts And Specifications I	3.0
CMGT 362	Contracts and Specifications II	3.0
CMGT 461	Construction Management	3.0
CMGT 463	Value Engineering	3.0
CMGT 465	Marketing Construction Services	3.0
CMGT 467	Techniques of Project Control	4.0
Total Credits		19.0

Construction Management IV - Customized Independent

18.0 quarter credits

The Construction Management IV - Customized Independent Certificate is designed to allow students to choose the higher-level courses that best suit their special needs and interests. Students must select all six of their courses at the start of the Certificate program.

Students interested in continuing their education after certification are able to apply their coursework and credits directly to the Bachelor of Science in Construction Management (http://www.drexel.edu/catalog/ug/goodwin/cmgt-).

Requirements

A minimum of six (6) 300-level or higher approved CMGT courses [*]	18.0

[*]   CIVE and CAEE majors may not include CMGT 371 or CMGT 372.

Certificate in Creativity and Innovation

The undergraduate certificate in Creativity and Innovation seeks to produce individuals who are equipped with the fundamental creative problem solving competencies that are indicative of creative leaders. The certificate is designed to provide knowledge of the major creativity theories, to enhance a student's latent creative strengths, to foster ability to apply creativity in the workplace, and to present methods for assessing creative strengths.

Students have the option of completing this undergraduate certificate as a stand-alone professional development credential or as a concentration within their baccalaureate degree.

Requirements

Core Courses		
CRTV 301	Foundations in Creativity	3.0
CRTV 302	Tools and Techniques in Creativity	3.0
PRST 450	Creative Leadership for Professionals	3.0
Electives		
Select three of the following:		9.0-11.0
CRTV 303	Creativity in the Workplace	
GSTD 210	Fact & Fiction in Film	
MGMT 260	Introduction to Entrepreneurship	
MGMT 364	Technology Management	
PRST 330	Career & Professional Development	
WRIT 220 [WI]	Creative Nonfiction Writing	
WRIT 225 [WI]	Creative Writing	
Total Credits		18.0-20.0

Certificate in Emergency Management

Natural or manmade disasters can strike at any time and anywhere. They take many forms—a hurricane, an earthquake, a tornado, a flood, a fire or a hazardous spill, an act of nature or an act of terrorism. Disasters can build over days or weeks, or hit suddenly, without warning. Every year, millions of people face disasters and their consequences.

The certificate program is designed to equip individuals with the fundamental competencies expected of professionals in the field of emergency management. The certificate provides the knowledge, skills, and abilities necessary to be competent emergency managers.

Individuals interested in pursuing this certificate may be employed in federal, state and municipal government positions, especially those involved in law enforcement, facilities, emergency medical personnel, fire personnel. The certificate is also designed to provide concerned citizens with knowledge in the field of emergency management.

Core Requirements

EMER 210	Hazard Mitigation	3.0

EMER 215	Public Management in Times of Crisis	3.0
EMER 220	Emergency Incident Risk Management	3.0
EMER 225	Infrastructure Disaster Recovery	3.0
Select two of the following:		6.0
EMER 235	Public Information Strategies	
EMER 245	Search and Rescue	
EMS 307	Critical Incident Stress Management	
EMS 445	Organizing Community Response in Disasters	
Total Credits		18.0

Certificate in the Fundamentals of Property Management

The fundamentals of property management certificate is designed to provide students with the basic competencies required for the management of residential and commercial real estate. This certificate presents a comprehensive overview of the multidisciplinary responsibilities of the professional property manager, from leasing a rental unit to maintaining the physical plant.

Requirements

PRMT 110	Introduction to Property Management	3.0
PRMT 210	Rental Property & Fair Housing Law	3.0
PRMT 215	Building Systems for PRMT I	3.0
PRMT 225	Technical Drawings for Property Managers	3.0
PRMT 330	Property Management Technology	3.0
Select one of the following:		3.0
PRMT 216	Building Systems for PRMT II	
PRMT 335	Marketing and Leasing for Residential Properties	
Total Credits		18.0

Certificate in Gaming and Casino Operations

The undergraduate certificate in gaming and casino operations provides individuals interested in careers in the casino resort industry with an in depth understanding of the unique aspects of casino and resort operations and management.

This certificate focuses on the knowledge, skills, and abilities necessary to become competent managers in a casino resort. The program is designed for people interested in a career in the casino industry or for existing casino employees looking to advance to higher levels of management. The certificate is delivered on line and can be obtained within one year by taking two courses at a time for three terms, or within two years by taking one course at a time for six terms.

For more information, visit Drexel Online's Undergraduate Certificate in Gaming and Casino Operations (http://www.drexel.com/online-degrees/bachelors-degrees/bach-cert-gaming-casino) web page.

Required Prerequisite Courses

HRM 110	Introduction to the Hospitality Industry	3.0
HRM 310	Hospitality Accounting Systems	3.0
or		

HRM 325	Hotel Rooms Division Management	3.0
MATH 101	Introduction to Analysis I	4.0
or MATH 181	Mathematical Analysis I	
Total Credits		13.0

Certificate Course Requirements

HRM 355	Resort Management	3.0
HRM 370	Gaming and Casino Management I	3.0
HRM 371	Gaming and Casino Management II	3.0
HRM 470	Gaming Legislation, Policy and Law	3.0
HRM 472	Gaming Information Systems	3.0
HRM 475	Current Issues in Gaming	3.0
Total Credits		18.0

Certificate in Housing for an Aging Population

For students having at least one year of college and two years of work experience, Drexel University offers several different certificate programs in property management. These certificates are designed to provide a professional background in a specified area of property management, and to assist in career goals or prompt additional study in the field.

Requirements

HSAD 323	Health Services and the Elderly	3.0
NURS 370	Issues in Aging and Longevity	4.0
PRMT 110	Introduction to Property Management	3.0
PRMT 335	Marketing and Leasing for Residential Properties	3.0
PRMT 345	Managing & Marketing Housing for an Aging Population	3.0
SOC 125	Sociology of Aging	3.0
Total Credits		19.0

Certificate in Residential Property Management

For students having at least one year of college and two years of work experience, Drexel University offers several different certificate programs in property management. These certificates are designed to provide a professional background in a specified area of property management, and to assist in career goals or prompt additional study in the field.

Requirements

PRMT 110	Introduction to Property Management	3.0
PRMT 335	Marketing and Leasing for Residential Properties	3.0
Select four of the following:		12.0
PRMT 340	Managing and Marketing for Retail Properties	
PRMT 345	Managing & Marketing Housing for an Aging Population	
PRMT 350	Affordable Housing Management	
PRMT 355	Student Housing Management	
PRMT 356	Military Housing Management	
Total Credits		18.0

Certificate in Retail Leadership

This certificate program, designed for people working in the retail industry, combines leadership, style, trends, and strategy to focus on key areas of the industry including:

- retail store management
- retail operations and strategy
- in-store visual merchandising
- retail store leadership

The certificate is also designed to help individuals wishing to enter the retail industry reach their career goals.

The program requires two core courses, and 12.0 - 14.0 credits of electives chosen from a list of courses.

Required Courses

DSMR 231	Retail Principles	3.0
DSMR 232	Retail Merchandise Planning	4.0
Select four of the following:		12.0-14.0
CAT 302	Customer Service Theory and Practice	
CRTV 301	Foundations in Creativity	
MGMT 260	Introduction to Entrepreneurship	
MKTG 301	Introduction to Marketing Management	
PRST 212	Creative Studies in the World Wide Web	
PRST 330	Career & Professional Development	
RETL 315	Power of Retail Brands	
RETL 325	Applied In-Store Visual Strategies	
RETL 400	Retail Leadership Capstone	
Total Credits		19.0-21.0

About Goodwin: Graduate

The Goodwin College of Professional Studies provides traditional and non-traditional students with programs of study in broad programmatic areas encompassing the following disciplines: construction management; creativity & innovation; engineering technology; hospitality management, culinary arts and food science; professional studies with concentrations in creativity & innovation, e-learning leadership, and homeland security management; project management; property management; and sport management. Curriculum is the result of a collaboration of research and scholarship with practical, industry-inspired experience.

The College of Professional Studies plays an important role within Drexel University by delivering diverse degree- and certificate-bearing programs offered through various modes of delivery: face-to-face day, weekend, and evening; as well as online.

Programs are regionally accredited by the Middle States Association of Colleges and Secondary Schools.

Majors

Certificates

About the College

The mission of the College of Professional Studies is to provide a transformational educational experience for all our students – traditional and non-traditional- through relevant, leading-edge and multidisciplinary academic programs in industry-specific career areas offered in different delivery modes.

This is accomplished in an environment that values continuous improvement of student learning and engagement through outcomes assessment; faculty with real-world experience who have the ability to blend theory with practice and engage in practice-impacting research and scholarship; as well as local and global outreach and partnerships, service learning, creativity and innovation, and diversity.

The College delivers programs that are professional and applied in nature. Students in our full-time day programs have opportunities for experiential learning through industry placement (co-ops) and internships. Faculty and staff are committed to academic excellence, quality instruction and advising, and student success. Many of our faculty are teacher-scholar-practitioners (TSPs) with several years of "real-world" experience and are involved in scholarly activities in their field.

All Goodwin programs are unique, aligning with market and industry needs, and blending theory with practice through laboratory experiments, field trips, and solid alliances with key businesses and industries.

Facilities

The College of Professional Studies is housed at One Drexel Plaza, 3001 Market Street, across from the 30th Street train station in Philadelphia. The college provides its students with access to state-of-the-art computer labs, and is home to the Learning Technologies Group, a leading provider of technology services and instructional design options at Drexel.

The Hospitality Management, Culinary Arts and Food Science program is located on the sixth floor of the Peck Problem Solving and Research Center at 33rd and Arch Streets. It is a 6,500 square foot space that includes commercial kitchens and the Academic Bistro, the student-run restaurant, bar and lounge. The facility also includes a conference room and the Les Dames d'Escoffier Library, which currently holds over 1,200 publications.

Master of Science in Construction Management

Master of Science: 45.0 quarter credits

About the Program

The Master of Science in Construction Management program gives professionals the opportunity to develop the multidisciplinary skills required of effective construction managers. The program focuses on training professionals to meet the challenge of increasing owner demands, tighter project delivery times and increasing regulation. The program provides the leadership skills professionals need to navigate the many daily challenges construction organizations face in successfully managing construction operations.

Three concentrations are available: construction project management, real estate, and sustainability and green construction.

Program Goals

The program is designed to increase the students' breadth and depth of knowledge in the principles and practices of construction management. The program serves as an excellent platform to develop senior management for the region's construction industry.

Graduates of the Master of Science in Construction Management program will:

- exhibit strong technical and managerial skills
- apply scientific methodologies to problem solving
- think critically
- exercise creativity and inject innovation into the process
- operate at the highest level of ethical practice

- employ principles of transformational leadership

Concentrations

Three concentrations are available:

Construction Project Management

This concentration provides the knowledge and skills required to successfully manage complex construction projects. Topics include he hard skills of project management, such as estimating and budgeting, time management, and planning. Other topics include managerial and legal aspects of construction contract administration, international construction practices,strategic planning, quality management, and productivity analysis.

Real Estate

In this concentration students explore the knowledge and skills required to create, maintain, and build environments for living, working and entertainment purposes. Relevant issues include project finance, real estate as investments, design and construction, operations, development law, environmental remediation, public policy, market analysis, and architecture.

Sustainability and Green Construction

Sustainable development means integrating the decision-making process across the project team, so that every decision is made with an eye to the greatest long-term benefits. Currently, in the Leadership in Energy and Environmental Design (LEED) green building rating system, the construction process represents a significant portion of the effort required to achieve high performance building programs.This concentration is intended to explore these concepts in detail.

For additional information, view the Goodwin College of Professional Studies' Construction Management (http://goodwin.drexel.edu/sotaps/gradcm.php) page.

Admissions Requirements

Admission to the program requires:

- A bachelor's degree in construction management or engineering, or a baccalaureate business or non-technical degree.
- A completed application
- Official transcripts from all universities or colleges and other post-secondary educational institutions (including trade schools) attended. Potential students must supply transcripts regardless of the number of credits earned or the type of school attended. If a potential student does not list all post-secondary institutions on his or her application, and these are listed on transcripts received from other institutions, processing of the application will be delayed until the remaining transcripts have been submitted.
- GPA of 3.0 or higher
- Two letters of recommendation (professional or academic)
- Up-to-date resume
- 500 word essay on why the applicant wishes to pursue graduate studies in this program
- International Students must submit a TOEFL score indicating a minimum of 600 (paper exam) or 250 (CBT exam). For more information regarding international applicant requirements, view the International Students Admissions Information (http://drexel.edu/isss/NewStudent.html) page.

Visit the Graduate Admissions (http://www.drexel.edu/grad/programs/goodwin/apply/requirements) website for more information about requirements and deadlines, as well as instructions for applying online.

Degree Requirements

The Master of Science in Construction Management curriculum includes a core of 5 required courses (15.0 credits), a concentration, and 6.0 credits of culminating experience. The culminating experience includes a capstone project in construction management.

Core Foundation Courses

CMGT 501	Leadership in Construction	3.0
CMGT 505	Construction Accounting and Financial Management	3.0
CMGT 510	Construction Control Techniques	3.0
CMGT 512	Cost Estimating and Bidding Strategies	3.0
CMGT 515	Risk Management in Construction	3.0
Concentrations		15.0-24.0
Students pursue a concentration in one of the following areas:		
Construction Management Project Management Concentration		
CMGT 525	Applied Construction Project Management	
CMGT 528	Construction Contract Administration	
CMGT 530	Equipment Applications and Economy	
CMGT 532	International Construction Practices	
CMGT 538	Strategic Management in Construction	
CMGT 540	Schedule Impact Analysis	
CMGT 548	Quality Management and Construction Performance	
CMGT 550	Productivity Analysis and Improvement	
Real Estate Concentration		
Select eight of the following:		
CMGT 535	Community Impact Analysis	
REAL 568	Real Estate Development	
REAL 571	Advanced Real Estate Investment & Analysis	
REAL 572	Advanced Market Research & Analysis	
REAL 573	Sales & Marketing of Real Estate	
REAL 574	Real Estate Economics in Urban Markets	
REAL 575	Real Estate Finance	
REAL 576	Real Estate Valuation & Analysis	
REAL 577	Legal Issues in Real Estate Development	
Sustainability and Green Construction Concentration		
CMGT 535	Community Impact Analysis	
CMGT 545	Sustainable Principles & Practices	
CMGT 546	Sustainable Technologies	
CMGT 547	LEED Concepts	
CMGT 558	Community Sustainability	
Culminating Experience		6.0
CMGT 696	Capstone Project in Construction Management I	
CMGT 697	Capstone Project in Construction Management II	
Total Credits		45.0

Master of Science in Creativity and Innovation

Master of Science: 45.0 quarter credits

About the Program

In a world of increasing complexity, change, and competition, generating new ideas and bringing them to the table is now essential for corporate management. Creativity is multidisciplinary – it is in all professional fields from chemistry to engineering, from education to computer science, and from sociology to business. Successful organizations, in all fields, view creativity as vital and are the ones that instill creativity throughout the organization. The application of creativity skills distinguishes managers who maintain the status quo from leaders who inspire a new direction or vision. By internalizing the spirit of creativity and the principles of creative problem solving, individuals can be transformed into change leaders. Upon successful completion of this program, students will be able to recognize problematic situations within various settings. They will also enable their organization to foster creative environments and identify creative problem-solvers within their workforce.

For more information, visit Drexel Online's MS in Creativity and Innovation (http://www.drexel.com/online-degrees/business-degrees/ms-creativity-innovation) website.

Degree Requirements

Required Courses

CRTV 501	Foundations in Creativity	3.0
CRTV 502	Tools and Techniques in Creativity	3.0
CRTV 503	Creativity in the Workplace	3.0
CRTV 610	Creativity and Change Leadership	3.0
CRTV 620	Research Methods and Assessment of Creative and Innovative Thinking	3.0
CRTV 630	Global Perspectives on Creativity	3.0
CRTV 640	Creativity & Innovation: 1500-Present	3.0
CRTV 650	Current Trends in Creativity & Innovation	3.0
CRTV 660	Diagnostic Creative Intervention	3.0
Professional Electives		**12.0**
Electives will be selected in consultation with the Program Director and/or Advisor.		
Suggested Electives		
Select two courses from the following options:		6.0
EDAM 500	Leading in Urban, Rural and Suburban Settings	
EDPO 620	Education Policy: Concepts, Issues, and Applications	
EDPO 628	American Educational Policy and U.S. Competitiveness	
EDPO 632	Ethics in Educational Policy Making	
EDHE 680	Foundations of Evaluation	
EDHE 682	The Evaluation Process	
EDLT 537	Technologies for Performance Support	
EDLT 538	New Media Literacies	
EDUC 516	Diversity and Today's Teacher	
EDUC 532	Designing Virtual Communities for Staff Development - Non-Field Experience	
EDUC 561	Mediating and Resolving Conflict in School Settings	
EDUC 702	School Leadership & Decision Making	
EDUC 800	Educational Leadership & Change	
EDUC 804	Program Evaluation in Organizations	
Total Credits		**45.0**

Master of Science in Engineering Technology

About the Program

Master of Science 45.0 quarter credits

The Master of Science in Engineering Technology offers courses focused on the technologies used in today's modern emerging industries. The program is designed to provide specialized engineering technology education to those who currently hold an accredited baccalaureate degrees in engineering technology or a related field. The flexibility of the program permits students to select a combination of courses relevant to their individual career goals or to provide the foundation for further advanced study. Courses will be delivered in several modes; face-to-face, on-line, or real-time videoconferencing.

The primary goal of the Master of Science in Engineering Technology is to develop advanced-level practitioners in resolving technical problems through the application of engineering principles and technology.

The program can be pursued in either a full- or part-time basis and permits students to select a combination of courses relevant to individual career goals in technology**.** The program is also designed to provide the foundation for further advanced study and allows practicing professionals the opportunity to update knowledge and skills based on the latest technological developments in the industrial environment and therefore advance in their chosen careers.

Program Goals

Graduates of the Master of Science in Engineering Technology will be expected to:

- Apply scientific and technological concepts to solving technological problems.
- Apply concepts and skills developed in a variety of technical and professional disciplines including computer applications and networking, materials properties and production processes, and quality control to improve production processes and techniques.
- Plan, facilitate, and integrate technology and problem solving techniques in the leadership functions of the industrial enterprise system.
- Engage in applied technical research in order to add to the knowledge of the discipline and to solve problems in an industrial environment.
- Apply theories, concepts, and principles of related disciplines to develop the communication skills required for technical-managers.

For additional information, view the Goodwin College of Professional Studies' Engineering Technology program (http://goodwin.drexel.edu/sotaps/gradet.php) web page.

Admission Requirements

Applicants must have a 3.0 grade point average in their undergraduate or upper division (junior and senior year) coursework.

International students who have their undergraduate degree from a country whose language is not English can be admitted with a Test of English as a Foreign Language (TOEFL) test score of 550 or better. For more information regarding international applicant requirements, view the International Students Admissions Information (http://drexel.edu/isss/NewStudent.html) page.

In addition to the general Drexel graduate admission requirements applicants must provide a preliminary proposal of their intended plan of study, which should include a general set of objectives, an outline of the courses to be taken, and identification of a master's project topic to be pursued.

Prerequisite courses

The following prerequisite courses must be completed at the undergraduate level with a minimum grade of C:

- Calculus 1
- Calculus 2
- Physics 1 (algebra-based)
- Physics 2 (algebra-based)
- DC/AC Circuit Analysis
- Digital Electronics
- Industrial Materials
- Statistics

Visit the Graduate Admissions (http://www.drexel.edu/grad/programs/goodwin/engineering-technology) website for more information about requirements and deadlines, as well as instructions for applying online.

Degree Requirements

Candidates for the MS in Engineering Technology must complete a minimum of 45.0 quarter credits. A minimum grade of B is required in all core courses and no more than two C grades in electives.

Of the 45.0 quarter credits required for the degree, 30.0 must be earned at Drexel University, including 24.0 credits of Engineering Technology (ET) courses. A maximum of 15.0 transfer credits may be allowed for graduate courses taken at other institutions, if they are appropriate to the student's plan of study.

Core Courses

ET 605	Materials for Emerging Technologies	3.0
ET 610	Networks for Industrial Environments	3.0
ET 615	Rapid Prototyping and Product Design	3.0
ET 619	Programmable Devices and Systems	3.0
ET 620	Microsystems and Microfabrication	3.0
ET 725	Sensors and Measurement Systems	3.0
ET 732	Modern Energy Conversion Technologies	3.0
PRST 503	Ethics for Professionals	3.0
PRST 504	Research Methods & Statistics	3.0
Electives		9.0
Select three of the following:		
ET 635	Engineering Quality Methods	
ET 675	Reliability Engineering	
ET 730	Lean Manufacturing Principles	
ET 755	Sustainable and Green Manufacturing	
PROJ 501	Introduction to Project Management	
PRST 512	Computing for Professionals	
Capstone Course		9.0
ET 775	Master's Project and Thesis in Engineering Technology (3-credit course, taken 3 times.)	
Total Credits		45.0

Master of Science in Food Science

Master of Science: 45.0 quarter credits

About the Program

The Master of Science (MS) in Food Science program at Goodwin College provides students with the opportunity to comprehensively study theoretical and applied aspects of the science, technology, and engineering of foods. Food scientists learn to integrate and apply knowledge from the disciplines of chemistry, physics, engineering, microbiology, and nutrition in order to preserve, process, package, and distribute foods that are safe, nutritious, enjoyable, and affordable.

The program provides a science-based professional education that encompasses classroom theory, practical research, and application. Food science is concerned with foods, their ingredients, and their physicochemical and biochemical interactions at the molecular and cellular levels. Students in the food science program participate in the research enterprise by completing a research project or designing and executing a thesis under faculty direction. Current research in food science includes:

- Thermal and non-thermal processing of foods and their impact on food quality
- Development of encapsulation systems for food ingredients
- Food product development
- Sensory analysis of foods

The program is designed for students who:

- are already working within the food industry and seeking professional advancement
- have an undergraduate degree in a general science-related area such as biology or chemistry, and would like to change fields or move into the more specialized field of food science

The MS in Food Science program offers students numerous opportunities for hands-on, real-world careers in applied science and technology. Potential employers include food product manufacturers, along with other companies providing services related to institutional feeding or supplying ingredients, processing equipment, and packaging materials. Technical and administrative positions are also available in various government agencies and with independent testing laboratories.

Food scientists are needed in the areas of:

- Food quality assessment and management
- Food processing and engineering
- Food product research and development
- Marketing and distribution
- Technical sales and support

Additional Information

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For additional information, view the Goodwin College Master of Science in Food Science (http://goodwin.drexel.edu/sotaps/gradfs.php) web page.

Admissions Requirements

The MS in Food Science program's approach to graduate study is quantitative; therefore, applicants are expected to demonstrate competency in the coursework or its equivalent listed in the following table. The graduate committee evaluates each applicant's transcripts at the time of application. In some cases, courses listed as prerequisites may be taken as corequisites during the first year of graduate study if deemed appropriate by the graduate admissions committee.

- general chemistry: one year
- organic chemistry: two terms or semesters
- biochemistry: one or two terms or semesters
- general biology: two courses to include genetics
- microbiology: one course
- mathematics: one year to include calculus
- statistics: one course
- physics: two terms or semesters

Visit the Drexel University Admissions (http://www.drexel.edu/grad/programs/goodwin/food-science) site to apply online.

Degree Requirements

Food Science Core Competency - Required

BIO 610	Biochemistry of Metabolism	3.0
or NFS 530	Macronutrient Metabolism	
or NFS 531	Micronutrient Metabolism	
FDSC 550	Food Microbiology	3.0
FDSC 551	Food Microbiology Laboratory	2.0
FDSC 556	Food Preservation Processes	3.0
FDSC 560	Food Chemistry	3.0
FDSC 662	Taste and Odor	3.0
FDSC 890	Seminar in Food Science	1.0
FDSC 480	Special Topics in Food Science (Introduction to Food Engineering)	3.0
Food Science Electives		**12.0**
Select 12.0 credits from the following:		
COOP 601	Advanced Co-op Guidance for Master's Degree Students	

FDSC 506	Food Composition & Behavior	
FDSC 554	Microbiology & Chemistry of Food Safety I	
FDSC 558	Nutritional Impact of Food Processing Methods	
FDSC 561	Food Analysis	
FDSC 568	Functional Foods	
FDSC 654	Microbiology & Chemistry of Food Safety II	
FDSC 669	Readings in Food Science	
Electives		**12.0**
Select 12.0 credits from the following:		
BIO 610	Biochemistry of Metabolism	
BIO 660	Microbial Physiology	
CHEM 753	Chemical Instrumentation	
ENVS 636	Principles of Toxicology I	
ENVS 637	Principles of Toxicology II	
NFS 530	Macronutrient Metabolism	
NFS 531	Micronutrient Metabolism	
PSY 512	Cognitive Psychology	
Total Credits		**45.0**

Electives

Electives are selected from departmental or related course offerings in consultation with the student's graduate advisor. Possibilities include courses in various aspects of nutrition; special topics in food science such as taste and odor and organoleptic evaluation; microbial physiology; microbial genetics; recombinant DNA techniques; chemical instrumentation; biochemistry; sanitary microbiology; toxicology; and environmental sciences. Students electing the thesis option may include up to six credits of FDSC 997 (Research in Food Science) among their electives.

Research

Students are invited to participate in research by designing and completing a research project or thesis. All thesis students consult with a faculty advisor and prepare a research proposal. Students present their proposals to their thesis committee for approval and, at the prerogative of the faculty, complete the research and report on it in seminar presentations. Students may elect to work in ongoing research or in some cases may suggest a new research area of specific interest to them. Individual guidance is necessary before research can commence, and there is periodic review during the course of the work. Students must submit a final written thesis to their thesis committee and defend the thesis at a final oral examination. Students in the thesis option may include up to six credits of Research in Food Science, among their electives.

Students in the non-thesis option are required to pass a written comprehensive examination. Students electing the non-thesis option may include up to three credits of Research in Food Science, among their electives.

Master of Science in Hospitality Management

Master of Science: 45.0 quarter credits

About the Program

This two-year online master's program provides a solid education in management, travel and tourism and allows students to choose concentrations in global tourism or gaming and casino management. Career paths include senior management of hotels and resorts, convention services, strategic development for online distribution of travel services, real-estate development projects and business ownership.

Both at the national and international level, travel and hospitality have become primary industries that require increasing numbers of professionals at all skill levels. Additional educational opportunities at the graduate level will be required to fill the needs of the tourism industry. Top professionals with an MS degree have excellent prospects at home and in the global marketplace.

Drexel University has a professional and technological emphasis as well as a track record of supporting the relationship between academics and industry. The degree in hospitality management is designed to prepare graduates to be key decision makers in the hospitality industry.

This two-year online master's degree will include courses such as program planning and creativity as well as specialized preparation in a concentration of either tourism or gaming and casino management.

For additional information, visit the College's Master of Science in Hospitality Management (http://goodwin.drexel.edu/sotaps/gradhm.php) page.

Admission Requirements

Classes start in the fall and spring terms. Applications are submitted throughout the year. Admission requirements include:

- a completed application form
- a Bachelor's degree from an accredited institution
- an undergraduate GPA of 3.0 or higher (graduate degree GPAs will be considered along with the undergraduate GPA)
- official transcripts from all universities or colleges and other post-secondary educational institutions (including trade schools) attended. Applicants must supply transcripts regardless of the number of credits earned or the type of school attended. If an applicant does not list all post-secondary institutions on the application and these are listed on transcripts received from other institutions, processing of the application will be delayed until the remaining transcripts have been submitted.
- two letters of recommendation
- a personal essay
- a resume
- International students must submit a TOEFL score of 550 or higher. For more information regarding international applicant requirements, view the International Students Admissions Information (http://drexel.edu/isss/NewStudent.html) page.

Visit the Graduate Admissions (http://www.drexel.edu/grad/programs/goodwin/hospitality-management) website for more information about requirements and deadlines, as well as instructions for applying online.

Degree Requirements

The Master of Science in Hospitality Management program requires completion of 45.0 credit hours (quarter) of study. The curriculum includes a core of 10 required courses (33.0 credits), including a research course where students consult with a faculty advisor to identify a suitable problem area in hospitality management and develop and carry out appropriate methodology to address the problem. Students also select one elective in consultation with their advisor. In addition, students take 12.0 credits in a concentration, either global tourism or gaming and casino management.

Goodwin College of Professional Studies Core Courses		
CRTV 501	Foundations in Creativity	3.0
PROJ 501	Introduction to Project Management	3.0
PRST 503	Ethics for Professionals	3.0
PRST 504	Research Methods & Statistics	3.0
Hospitality Management Required Courses		
HRM 501	Foundations of the Hospitality Industry	3.0
HRM 505	Customer Service for Professionals	3.0
HRM 520	Hospitality Management Information Systems	3.0
HRM 555	Hospitality Human Resource Management	3.0
HRM 650	Strategic Management & Leadership in Hospitality	3.0
HRM 997	Research Project in Hospitality Management	3.0
Elective		
Students select one free elective in either the Hospitality Management department or outside the program in consultation with advisor.		3.0
Concentrations		12.0
Students select a concentration in either Global Tourism or Gaming and Casino Management		
Global Tourism		
Select four of the following:		
HRM 515	Destination and Resort Management	
HRM 595	Economics of Tourism	
HRM 610	The Global Tourism System	
HRM 612	Tourism and Sustainability	
HRM 614	Tourism Development	
HRM 616	Tourism Marketing and Branding	
Gaming and Casino Management		
Select four of the following:		
HRM 515	Destination and Resort Management	
HRM 572	Gaming Information Systems	
HRM 575	Current Issues in Gaming	
HRM 670	Casino Financial Analysis	
HRM 672	Security and Risk Management	
HRM 674	Tribal Gaming Management	
HRM 676	Casino Marketing	
Total Credits		45.0

Master of Science in Project Management

Master of Science 45.0 quarter credits

About the Program

The Master of Science in Project Management, a part-time online program, is designed to equip professionals with the fundamental competencies expected of project managers in virtually any field. The course content is mapped to the internationally recognized Project Management Institute's Body of Knowledge (PMBOK$^{®}$).

Project management is a field that began in the 1950s in the defense industry. In the 1980s, the field gained critical mass in a broad range of industries, including, but not limited to building/construction, defense, engineering, film and video, financial services, government contracting, and IT/software development. Most environments today are "projectized." In other words, there is a project approach to getting things done. Today's companies use project management (tied to their core competencies) to gain competitive advantage.

For additional information, visit the Master of Science in Project Management (http://www.drexel.com/online-degrees/business-degrees/project-management) page.

- Personal Essay, between 500-750 words, please describing your interest in the program. Specifically, please discuss the following:
  - How the program relates to your previous educational activities
  - If changing course, why are you moving in a new direction with your educational goals
  - How the program relates to your current line of work
  - How you plan to apply the program to your future goals
- Resume
- International Students (http://www.drexel.edu/online-degrees/business-degrees/project-management/international.aspx) must submit a TOEFL score of 550 or higher. For more information regarding international applicant requirements, view the International Students Admissions Information (http://drexel.edu/isss/NewStudent.html) page.
- An interview may be requested.

Visit the Graduate Admissions (http://www.drexel.edu/grad/programs/goodwin/apply/requirements) website for more information about requirements and deadlines, as well as instructions for applying online.

Admission Requirements

Recommended Prerequisites

The following undergraduate courses or their equivalent are recommended prior to enrolling in the MS in Project Management program:

ACCT 115	Financial Accounting Foundations	4.0
STAT 201	Introduction to Business Statistics	4.0
FIN 301	Introduction to Finance	4.0
ORGB 300 [WI]	Organizational Behavior	4.0

Admission Requirements

- Completed Application Form
- Bachelor's degree from a regionally accredited institution
- Undergraduate GPA of 3.0 or higher (graduate degree GPAs will be considered along with the undergraduate GPA). Applicants with a cumulative GPA below 3.0 may be considered.
- **Official transcripts** from all universities or colleges and other post-secondary educational institutions (including trade schools) attended. Instead of hard copy transcripts, you may supply official electronic transcripts issued by a post-secondary institution directly to Drexel University Online (use our email address, customerservice@drexel.com). You must supply transcripts regardless of the number of credits earned or the type of school you attended. If you do not list all post-secondary institutions on your application and these are listed on transcripts received from other institutions, processing of your application will be delayed until you have submitted the remaining transcripts. Click here to use our Transcript Lookup Tool to assist you in contacting your previous institutions.
- Two letters of recommendation. Drexel University Online now accepts electronic letters of recommendation. Please access the following webpage for instructions regarding their submission: http://www.drexel.edu/apply/recommend. If a recommender prefers to submit an original, hard copy letter of recommendation, please remind the recommender that it must be signed and submitted in a sealed envelope signed across the flap by the recommender.

Degree Requirements

The Master of Science in Project Management requires completion of 45 credit hours (quarter) of study. The curriculum includes a core of 9 required courses (27 credits), a culminating capstone project experience integrating the knowledge and skills acquired during the program (PROJ 695, 3.0 credits) and 15.0 credits of electives.

Recommended Prerequisites

The following undergraduate courses or their equivalent are recommended:

- ACCT 115 Financial Accounting Foundations
- FIN 301 Introduction to Finance
- ORGB 300 [WI] Organizational Behavior
- STAT 201 Introduction to Business Statistics

Electives

Students may use electives to increase project management, creativity, communication, or leadership skills or to develop areas of specialization. Any appropriate graduate course offered in the University can serve as an elective if the student has sufficient background to take the course. In addition, the program will offer its own elective courses including special topics (PROJ 690). Qualified students may also pursue independent study (PROJ 699) for elective credit in special cases.

Curriculum

Core Courses		
PROJ 501	Introduction to Project Management	3.0
PROJ 502	Project Planning & Scheduling	3.0
PROJ 510	Project Quality Management	3.0
PROJ 515	Project Estimation & Cost Management	3.0
PROJ 520	Project Risk Assessment & Management	3.0
PROJ 530	Managing Multiple Projects	3.0

PROJ 535	International Project Management	3.0
PROJ 540	Project Procurement Management	3.0
PROJ 603	Project Leadership & Teamwork	3.0
PROJ 645	Project Management Tools	3.0
Free Electives		12.0
Capstone Project		
PROJ 695	Capstone Project in Project Management	3.0
Total Credits		45.0

Master of Science in Property Management

Master of Science: 45.0 quarter credits

About the Program

The Master of Science in Property Management is a part-time graduate degree program designed to educate professionals to be successful in the multidimensional and multidisciplinary field of property management. The program stresses strategic decision-making and provides students with interactive, experiential learning opportunities involving research and analysis. Students have the opportunity to review and analyze best practice cases in all aspects of the profession and to discuss the latest strategies with industry leaders.

The program provides graduate study for experienced managers with undergraduate degrees in areas outside of property management or real estate. Property managers operate in a very complex environment and their roles have evolved from handling day-to-day challenges to being actively involved in strategic leadership. Currently, property managers are challenged to balance the needs of owners, tenants, contractors, and government entities. They are expected to be creative participants in setting strategic policies involving development, risk, finance, marketing, human resources, and technology. Property management is a very high-level profession and successful property managers are responsible for thousands of tenants, thousands of units, millions of rent dollars, hundreds of employees, and multi-million dollar investments. Students complete core foundation courses and two elective courses where they have the choice of selecting a variety of courses or creating an area of specialism based on their professional interests. The elective courses feature special strategies employed to manage and market a variety of industry segments. All students participate in a culminating experience involving two capstone courses, one featuring current issues and the other involving the completion of a major research project and presentation to a board of industry leaders.

For additional information, visit the Master of Science in Property Management (http://www.drexel.com/online-degrees/business-degrees/ms-property-management) page.

Admission Requirements

- Bachelor's degree from a regionally accredited institution
- Undergraduate GPA of 3.0 or higher (graduate degree GPAs will be considered along with the undergraduate GPA). Applicants with a cumulative GPA below 3.0 may be considered.
- Completed application
- Official transcripts from all universities or colleges and other post-secondary educational institutions (including trade schools)

attended. Instead of hard copy transcripts, you may supply official electronic transcripts issued by a post-secondary institution directly to Drexel University Online (use our email address, customerservice@drexel.com). You must supply transcripts regardless of the number of credits earned or the type of school you attended. If you do not list all post-secondary institutions on your application and these are listed on transcripts received from other institutions, processing of your application will be delayed until you have submitted the remaining transcripts. Click here to use our Transcript Lookup Tool (http://www.drexel.edu/tools/transcript.aspx) (javascript:opentranscriptwindow();) to assist you in contacting your previous institutions.

- Two letters of recommendation, professional or academic. Drexel University Online now accepts electronic letters of recommendation. Please access the following webpage for instructions regarding their submission: http://www.drexel.edu/apply/recommend. If a recommender prefers to submit an original, hard copy letter of recommendation, please remind the recommender that it must be signed and submitted in a sealed envelope signed across the flap by the recommender.
- Up-to-date resume
- Essay, between 500-750 words, describing your interest in the program. Specifically, please discuss the following:
  - How the program relates to your previous educational activities
  - If changing course, why are you moving in a new direction with your educational goals
  - How the program relates to your current line of work
  - How you plan to apply the program to your future goals
- International students must submit a TOEFL score indicating a minimum of 600 (paper exam) or 250 (CBT exam). For more information regarding international applicant requirements, view the International Students Admissions Information (http://drexel.edu/isss/NewStudent.html) page.
- An interview may be requested.

Visit the MS in Property Management Online Application (http://www.drexel.com/online-degrees/business-degrees/ms-property-management/apply.aspx) page for more information about requirements and deadlines, as well as instructions for applying online.

Degree Requirements

The Master of Science in Property Management requires the completion of a minimum of 45.0 post-baccalaureate credits with 30.0 credits in core foundation courses. The core foundation courses include essential subject areas for all successful property managers: environment, facilities management, property law, financial analysis, risk management, development, and technology.

In addition, the three premier types of property are featured: residential, commercial, and retail. Beyond the core foundation courses, students can select from a list of elective courses. All students participate in a capstone project which is the culminating experience of the degree program. Students discuss current issues facing the profession work together on a team project to complete an analysis project and have the opportunity to interact with internationally known property management leaders.

Core Courses		
CMGT 535	Community Impact Analysis	3.0
PRMT 602	Residential Property Marketing	3.0

PRMT 603	Property Asset Management	3.0
PRMT 610	Facilities Management	3.0
PRMT 625	Property Financial Analysis & Strategies	3.0
PRMT 630	Rental Property Law	3.0
PRMT 640	Property Security Emergency & Risk Management	3.0
PRMT 645	Property Management Technology Strategies	3.0
PRST 504	Research Methods & Statistics	3.0
REAL 568	Real Estate Development	3.0
REAL 572	Advanced Market Research & Analysis	3.0
Electives		
Select two of the following:		6.0
PRMT 650	Retail Property Mareketing & Management	
PRMT 655	Affordable Housing Management	
PRMT 660	Student Housing Mareketing & Management	
PRMT 665	Military Housing Mareketing & Management	
PRMT 670	Housing for Later Life	
PRMT 675	Commerical Property Management	
PRMT 680	Special Topics in PRMT	
REAL 574	Real Estate Economics in Urban Markets	
Culminating Experience		
PRMT 695	Capstone in Property Management I	3.0
PRMT 696	Capstone in Property Management II	3.0
Total Credits		**45.0**

Master of Science in Sport Management

Master of Science: 45.0 quarter credits

About the Program

This program is designed both for individuals already working in the sport management industry as well as for individuals who are new to the industry and looking to make a career change from a "mainstream industry" (such as marketing or finance) into the more specialized field of sport management. Graduates of the MS program in Sport Management will be uniquely qualified in leadership and management in a wide spectrum of organizations within the sport industry including professional sport, collegiate athletics, recreation and leisure sport venues, sport agency, and corporate sport enterprises as well as a range of health and fitness facilities.

The Master of Science in Sport Management program prepares its graduates for positions in sport management at all levels (recreational, youth, inter-scholastic, amateur, collegiate, professional) and within several organizational settings (public, private, non-profit, corporations).

The program content provides an integrated educational experience directed toward developing the ability to apply knowledge and skills to the planning, design, implementation, and evaluation of sport programs and offer solutions to practical problems in the sport management field. Graduates are expected to be leaders in their chosen area of interest by incorporating the various perspectives from the multidisciplinary training and applying them to current issues in sport and society.

Program Goals

Graduates of the Master of Science in Sport Management will be able to:

- Apply the fundamentals of business to sport management.
- Integrate the principles of management; organizing people and resources to get results in the field of sport.
- Apply the area of law and labor relations to the sports industry and agency.
- Use existing technologies and be prepared for emerging technologies in the sport management field.
- Forecast new developments and adapt to the rapidly changing sports environment.
- Creatively direct the economic contributions that sports and recreation offer to people, organizations, and the community.
- Effectively organize, evaluate and improve and use new information in sports.
- Utilize the knowledge and skills learned to produce an in-depth research project or thesis, which will serve to advance the study of sport management.

For additional information, view the Goodwin College of Professional Studies' Sport Management program (http://goodwin.drexel.edu/sotaps/gradsm.php) web page.

Admissions Requirements

All applicants must have received a four year bachelor's degree from an accredited college or university. Students whose native language is not English and who do not hold a bachelor's degree from a U.S. institution are required to take and submit a score from TOEFL (Test of English as a Foreign Language).

Students applying to the MS degree in Sport Management will be subject to both Drexel's graduate admissions requirements and those of the program, namely:

- Completed Application Form
- A recommended minimum of 3.0 out of 4.0 for the undergraduate degree
- TOEFL (if required) with a minimum score of 600
- All official transcripts verifying an earned baccalaureate degree from an accredited four year institution
- Two letters of recommendation (it is suggested that one be from a professional individual and one be from an academic individual). Letters of recommendation should be requested from individuals who are capable and prepared to make judgments on the applicant's ability to complete graduate studies.
- Professional Resume
- Interview with a member of the Sport Management Faculty (arranged by the Sport Management program)
- A 1000-word essay including a biographical sketch which should include information regarding the applicant's background and experience in the sports industry, a summary of his/her professional career interests and goals and personal strengths
- A recommended minimum of three years working experience since baccalaureate graduation
- Recommended prior experience (voluntary or paid) within the sport industry for those individuals whose undergraduate degree is not in sport management or an associated field.

Visit the Graduate Admissions (http://www.drexel.edu/grad/programs/goodwin/apply/requirements) website for more information about requirements and deadlines, as well as instructions for applying online.

Degree Requirements

Core Foundation Courses

SMT 601	Sports Industry Management	3.0
SMT 602	Sport Law & Risk Management	3.0
SMT 604	Sport Media & Technology	3.0
SMT 607	Sport Budgets & Fiscal Practices	3.0
SMT 608	Sport Information & Public Relations	3.0
SMT 609	Sports Ticket Sales & Strategies	3.0
SMT 611	Corporate Sponsorship Sales & Strategies in Sport	3.0
SMT 612	Development & Fundraising Strategies in Sport	3.0
SMT 621	Leadership in Sport Management	3.0
SMT 626	Globalization of Sport	3.0
SMT 635	Sport Facilities & Event Management	3.0
Sport Management Elective Courses [*]		6.0
Select two of the following:		
SMT 606	Contemporary Issues in Sport	
SMT 622	Labor Relations & Collective Bargaining in Sport	
SMT 629	Managing Coaches & Teams	
SMT 630	Sports Industry Practicum	
SMT 633	Sport Tourism Strategies	
SMT 640	Consumer Behavior in Sport	
SMT 680	Independent Study	
SMT 690	Special Topics	
Project/ Research Thesis		
SMT 698	Research Design & Techniques in Sport	3.0
SMT 699	Project/Research Thesis	3.0
Total Credits		45.0

[*]   Additional options for electives outside the Department may be approved by the advisor.

Sample Plan of Study

First Year

Fall		Credits
SMT 601	Sports Industry Management	3.0
SMT 602	Sport Law & Risk Management	3.0
	Term Credits	**6.0**
Winter		
SMT 604	Sport Media & Technology	3.0
SMT 626	Globalization of Sport	3.0
	Term Credits	**6.0**
Spring		
SMT 607	Sport Budgets & Fiscal Practices	3.0
SMT 608	Sport Information & Public Relations	3.0
	Term Credits	**6.0**
Summer		
SMT 621	Leadership in Sport Management	3.0

SMT 635	Sport Facilities & Event Management	3.0
	Term Credits	**6.0**
Second Year		
Fall		
SMT 609	Sports Ticket Sales & Strategies	3.0
SMT 611	Corporate Sponsorship Sales & Strategies in Sport	3.0
	Term Credits	**6.0**
Winter		
SMT 612	Development & Fundraising Strategies in Sport	3.0
Elective [*]		3.0
	Term Credits	**6.0**
Spring		
SMT 698	Research Design & Techniques in Sport	3.0
Elective [*]		3.0
	Term Credits	**6.0**
Summer		
SMT 699	Project/Research Thesis	3.0
	Term Credits	**3.0**

Total Credit: 45.0

[*]   One (1) Sport Management elective (http://www.drexel.edu/catalog/masters/sport.htm)

Certificate in Construction Management

The certificate in construction management has been designed for professionals to develop the multidisciplinary skills required of effective construction managers.

Students have the option of completing this 18.0 credit certificate in construction management as a stand-alone professional development credential, or as a step toward the MS in Construction Management program.

The admissions process for this program is the same as for the MS in Construction Management (http://www.drexel.edu/catalog/g-admis/cmgt.htm).

Depending on the experience and background of individual students, a prerequisite course of CMGT 501 "Leadership in Construction" may be required, or, at the discretion of the faculty, can be waived.

Requirements

CMGT 510	Construction Control Techniques	3.0
CMGT 512	Cost Estimating and Bidding Strategies	3.0
CMGT 515	Risk Management in Construction	3.0
CMGT 525	Applied Construction Project Management	3.0
CMGT 528	Construction Contract Administration	3.0
CMGT 538	Strategic Management in Construction	3.0
Total Credits		18.0

Certificate in Creativity and Innovation

The graduate-level certificate in creativity and innovation provides, in a concentrated format, the most contemporary knowledge and skills needed in this important area for students who do not wish to pursue a master's degree but who would value a credential that demonstrates their learning. Credits from the certificate can be applied toward an MS in Professional Studies (http://www.drexel.com/online-degrees/business-degrees/ms-prof-studies) or the MS in Creativity and Innovation.

In a world of increasing complexity, change, and competition, generating new ideas and bringing them to the table is now essential for corporate management. Creativity is multidisciplinary – it is in all professional fields from chemistry to engineering, from education to computer science, and from sociology to business. Successful organizations, in all fields, view creativity as vital and are the ones that instill creativity throughout the organization. The application of creativity skills distinguishes managers who maintain the status quo from leaders who inspire a new direction or vision. By internalizing the spirit of creativity and the principles of creative problem solving, individuals can be transformed into change leaders.

Upon completion of the certificate program, students will have formed an in depth understanding of creativity, enhanced communication, creative problem solving, and how these may be applied to practical situations that further their workplace culture. Participants will use their newly enhanced creative thinking skills to reflect critically on existing workplace practices and express coherent and cogent ideas and suggestions for continuous improvement.

For more information, visit Drexel Online's Graduate Certificate Creativity and Innovation (http://www.drexel.com/online-degrees/business-degrees/grad-cert-creativity) web page.

Requirements

CRTV 501	Foundations in Creativity	3.0
CRTV 502	Tools and Techniques in Creativity	3.0
CRTV 503	Creativity in the Workplace	3.0
CRTV 610	Creativity and Change Leadership	3.0
CRTV 620	Research Methods and Assessment of Creative and Innovative Thinking	3.0
CRTV 630	Global Perspectives on Creativity	3.0
Total Credits		18.0

Certificate in E-Learning Leadership

The graduate certificate in e-learning leadership is designed to meet the needs of today's working professionals across many fields. As the demand for academic programs and courses to be delivered via e-learning continues to grow, the corresponding need for leadership in this important area increases. Similarly, corporations continue to seek leaders to oversee training and development initiatives via e-learning. This certificate provides, in a concentrated format, the most contemporary knowledge and skills needed in this important area for students who do not wish to pursue a master's degree but who would value a credential that demonstrates their learning.

Admission requires a bachelor's degree from an accredited institution. Credits from the certificate in e-learning leadership can be applied toward an MS in Professional Studies (http://www.drexel.com/online-degrees/business-degrees/ms-prof-studies).

Objectives
Upon completion of the program, students will have formed an in-depth understanding of online and distance learning theories and will be able to answer the following paramount questions:

- Which emerging technologies hold greatest promise for enriching learning experiences throughout the educational enterprise?
- What pedagogical strategies should designers embody in instructional materials,including those based on multimedia and those reflected in gaming environments?
- How should educators deploy, manage, and evaluate information and communication technologies in classrooms for optimal educational effect?
- What principles of design and practice should educators incorporate into distributed educational courses and programs?

For more information, visit Drexel Online's Graduate Certificate in E-Learning (http://www.drexel.com/online-degrees/business-degrees/cert-elearning) website.

Requirements

ELL 501	The Purpose and Business of E-Learning	3.0
ELL 502	E-Learning Technologies	3.0
ELL 503	Teaching and Learning Issues in E-Learning	3.0
ELL 504	Learning Technologies & Disabilities	3.0
ELL 604	Design & Delivery of E-Learning I	3.0

ELL 605	Design & Delivery of E-Learning II	3.0
Total Credits		18.0

Certificate in Gaming and Casino Operations

The graduate-level certificate in gaming and casino operations provides individuals interested in higher-level management positions in the casino industry with an in-depth understanding of the unique aspects of gaming and resort management. This certificate focuses on the knowledge, skills, and abilities necessary to become a competent executive in a casino resort.

This part-time program is designed for people interested in a career in the casino industry or for existing casino employees looking to advance to higher levels of management. The certificate is delivered online and can be obtained within one year by taking two courses at a time for three terms or within two years by taking one course at a time for six terms.

For more information, visit Drexel Online's Graduate Certificate in Gaming and Casino Operations (http://www.drexel.com/online-degrees/business-degrees/grad-cert-gaming-casino) web page.

Required Prerequisites

ACCT 115	Financial Accounting Foundations	4.0
HRM 110	Introduction to the Hospitality Industry	3.0
HRM 310	Hospitality Accounting Systems	3.0
HRM 325	Hotel Rooms Division Management	3.0
MATH 101	Introduction to Analysis I	4.0
or MATH 181	Mathematical Analysis I	
Total Credits		17.0

Required Courses

HRM 501	Foundations of the Hospitality Industry	3.0
HRM 515	Destination and Resort Management	3.0
HRM 572	Gaming Information Systems	3.0
HRM 575	Current Issues in Gaming	3.0
HRM 670	Casino Financial Analysis	3.0
HRM 676	Casino Marketing	3.0
Total Credits		18.0

Certificate in Homeland Security Management

The graduate certificate in homeland security management seeks to produce professionals practicing in the defense and security of the homeland in both the public and private sectors. This online program has been designed for employees of federal, state, and municipal government, especially those involved in law enforcement, facilities, emergency medical personnel, fire personnel, and concerned citizens. Prospective graduate students at Drexel who may be interested in courses in this program include those studying construction management, architecture, and engineering (all disciplines).

This certificate provides, in a concentrated format, the most contemporary knowledge and skills needed in this important area for students who do not wish to pursue a master's degree, but who would value a credential that demonstrates their learning. Credits from the graduate certificate in homeland security management can be applied toward an MS in Professional Studies (http://www.drexel.com/online-degrees/business-degrees/ms-prof-studies).

Objectives
Students in this certificate program will develop competencies and knowledge relating to:

- homeland security strategy and policy development
- national security issues in terrorism
- critical infrastructure protection
- national security intelligence
- land and maritime border and port protection
- developing technologies in homeland security

Specifically, graduates of this program will be able to:

- Design and modify plans and programs at federal, state, and/or local levels to reflect the evolving strategic policy issues associated with a statutory and presidential direction for homeland security.
- Recognize terrorist groups' proclivities in order to forecast the risks, types, and orders of magnitude of terrorist threats most likely to confront the nation-state.
- Develop policies, procedures, and protocols to allow seamless agency integration from prevention to incident response scenarios.
- Recognize the multidisciplinary nature of homeland security functions and be able to assess and integrate various functional areas.

For more information, visit Drexel Online's Graduate Certificate Homeland Security Management (http://www.drexel.com/online-degrees/business-degrees/grad-cert-homeland-security) page.

Requirements

HSM 544	Introduction to Homeland Security	3.0
HSM 549	Terrorism and Homeland Security	3.0
HSM 554	Critical Infrastructure Protection	3.0
CST 604	Technology for Homeland Security	3.0
CST 609	National Security Intelligence	3.0
CST 614	Counterintelligence	3.0
Total Credits		18.0

Certificate in Real Estate

This graduate certificate seeks to produce professionals with the knowledge, skills, and perspective required to be successful in the real estate development process and the industry as a whole. Students explore the knowledge and skills required to create, maintain, and build environments for living, working and entertainment purposes.

Relevant issues include project finance, real estate as investments, design and construction, operations, development law, environmental remediation, public policy, market analysis, and architecture.

Students wising to complete this certificate in the context of a master's degree should consider the MS in Construction Management (http://www.drexel.edu/catalog/grad/goodwin/ms0cmgt-) with a concentration in Real Estate.

Requirements

REAL 568	Real Estate Development	3.0

REAL 571	Advanced Real Estate Investment & Analysis	3.0
REAL 572	Advanced Market Research & Analysis	3.0
REAL 575	Real Estate Finance	3.0
REAL 577	Legal Issues in Real Estate Development	3.0
Select one of the following:		3.0
REAL 573	Sales & Marketing of Real Estate	
REAL 574	Real Estate Economics in Urban Markets	
REAL 576	Real Estate Valuation & Analysis	
Total Credits		18.0

Certificate in Sustainability and Green Construction

The architectural, engineering, and construction community faces the daunting task of providing a built environment which is in harmony with the natural environment—meeting the current needs of society without jeopardizing the ability of future generations to meet their needs. Sustainable development means integrating the decision-making process across the project team, so that every decision is made with an eye to the greatest long-term benefits.

The certificate in Sustainability and Green Construction is a flexible, part-time post-baccalaureate program, focused on the sustainable aspects of the construction process. Students have the opportunity to complete all requirements within one and a half years.

Currently, in the Leadership in Energy and Environmental Design (LEED) green building rating system, the construction process represents a significant portion of the effort required to achieve high performance building programs.This certificate program is intended to explore these concepts in detail. Credits from this certificate will transfer toward a Masters of Science in Construction Management.

Requirements

CMGT 535	Community Impact Analysis	3.0
CMGT 545	Sustainable Principles & Practices	3.0
CMGT 546	Sustainable Technologies	3.0
CMGT 547	LEED Concepts	3.0
CMGT 558	Community Sustainability	3.0
Total Credits		15.0

Undergraduate Course Descriptions

Biomedical Engineering Tech

Courses

BET 301 Healthcare Technology 3.0 Credits
An overview of medical equipment used in hospitals and other medical environments to diagnose and treat patients. Sensors and physiological signals will be explained. Equipment found in various hospital departments and medical specialties will also be discussed. Patient safety and regulations will be emphasized.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 201 [Min Grade: D] and EET 202 [Min Grade: D]

BET 302 Biomedical Electronics 4.0 Credits
This course is an introduction to the fundamentals of analog electronics with an emphasis on biomedical applications. Students will be introduced to solid state devices including diodes, transistors, operational amplifiers, oscillators, and mixers and their use in power supplies, amplifiers and active filters.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 201 [Min Grade: D] and EET 202 [Min Grade: D]

BET 303 Medical Imaging Systems 3.0 Credits
Introduces students to physical principles, instrumental design, data acquisition strategies, image reconstruction techniques, and clinical applications of imaging modalities most commonly used in clinical medicine. The particular emphasis is placed on the basic engineering design involved in each modality.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: BET 301 [Min Grade: D]

BET 305 Clinical Laboratory Equipment 3.0 Credits
Clinical laboratory instrumentation and automation is described with emphasis on the demands of clinicians for diagnostic information. Special attention is given to reliability, ease of training, and cost effectiveness.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 201 [Min Grade: D] and EET 202 [Min Grade: D] and BET 301 [Min Grade: D]

Communications & Applied Tech

Courses

CAT 180 Special Topics in Communications and Applied Technology 1.0-4.0 Credit
Special Topics in CAT. Covers special topics related to Communications and Applied Technology. Allows the College to offer new, specialized lower-level topics of interest and relevance to the major.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 3 times for 12 credits

CAT 200 Strategies for Lifelong Learning 3.0 Credits
Strategies for Lifelong Learning. This course introduces students to the skills necessary for successful lifelong learning. Theoretical and practical aspects of learning are explored. Emphasis is placed on critical thinking, study skills, analytical reading, effective writing, reasoning, problem-solving, time management and strategies for management necessary to support learning in a college environment.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CAT 201 [WI] Interpersonal Communication 3.0 Credits
Interpersonal Communication. Interpersonal communication will be studies from the perspective of emotional intelligence. Particular emphasis will be placed on emotional intelligence in the workplace and in leadership. The main objective is to make students aware that intelligence and technological expertise are not enough to be successful in the workplace. This is a writing intensive course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CAT 215 Emerging Trends of Video Games 3.0 Credits
Course examines the importance of the video game industry in today's world including an overview of current video game industry, the motivation for playing video games and the associated consequences. The role of video games from an international perspective also is examined.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CAT 302 Customer Service Theory and Practice 3.0 Credits
Customer Service Theory and Practice. This course focuses on the theory of customer service and the practices that "best in class" companies apply to differentiate themselves from the competition. The course includes practical information and activities designed to teach students how to respond to customers, resolve problems, and provide quality customer service.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

CAT 303 Client Relations Management 3.0 Credits
Client Relations Management. This course introduces the skills that facilitate and enhance client relations management. Topics covered include building a trusting relationship, evaluating and managing expectations and needs, managing conflict, understanding the client's perspective, customer life cycle, consulting, serving public sector versus private sector clients, managing client relations managers, and ethical issues.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

CAT 315 Expressive Power of Video Games 3.0 Credits
Course focuses on the effects of video games from a multidisciplinary perspective including how video games have transformed social interactions. Emphasis placed on the importance of video games as a persuasive communication medium.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

CAT 360 Applied Organizational Research 3.0 Credits
Applied Organizational Research. This course presents a systematic approach to managerial methods of conducting organizational research and analysis. Students will undergo the managerial research process of specifying the problem; translating the problem into specific research questions; designing the data collection and methodology; collecting, analyzing, and interpreting data; and reporting research results and recommendations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

CAT 380 Advanced Special Topics in Communications and Applied Technology 0.5-12.0 Credits
Covers special topics of interest in Communications and Applied Technology. This course may be repeatable for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 3 times for 12 credits
Restrictions: Cannot enroll if classification is Freshman or Sophomore

CAT 399 Independent Study in Communications and Applied Technology 0.5-6.0 Credits
Independent Study in CAT. Independent study on a topic related to Communications and Applied Technology selected by the students. The independent study is supervised by a faculty member and guided by a plan of study.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 3 times for 18 credits

CAT 491 Senior Project in Communications and Applied Technology I 3.0 Credits
Senior Project CAT I. Covers planning and execution of a professional project that integrates the academic and practical knowledge the student has acquired in his or her major. Requires a formal written report and a formal oral presentation. This is part one of a two-course sequence.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.
Prerequisites: (CAT 301 [Min Grade: D] or PROJ 301 [Min Grade: D]) and CAT 360 [Min Grade: D] and COM 230 [Min Grade: D] and COM 270 [Min Grade: D] and ORGB 300 [Min Grade: D]

CAT 492 Senior Project in Communications and Applied Technology 3.0 Credits
Senior Project CAT II. Covers planning and execution of a professional project that integrates the academic and practical knowledge the student has acquired in his or her major. Requires a formal written report and a formal oral presentation. This is part two of a two-course sequence.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.
Prerequisites: CAT 491 [Min Grade: C]

Construction Management

Courses

CMGT 101 Introduction to Construction Management 3.0 Credits
This course will introduce the basic history and management concepts of the construction industry to students with the expectation that upon completion students will have an overview of the industry. Career choices, industry firms, and key players in the Construction Management process will be explored.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Junior or Senior

CMGT 161 Building Materials and Construction Methods I 3.0 Credits
This course is designed to explore the range of building materials in use today and their interrelationships in a construction project. Topics will include a study of the major components of construction materials, the selection process, specification, alternatives, procurement, placement and quality management for the building systems covered. Foundations, excavations, wood framing and steel construction and the role these materials play in the success of a project once chosen will be considered and evaluated.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if major is AE or major is CIVE

CMGT 162 Building Materials and Construction Methods II 3.0 Credits
Continues CMGT 161. Covers concrete, reinforced concrete, site cast and pre-cast concrete, brick and concrete masonry, reinforced masonry, and properties of these materials and construction methods associated with them.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if major is AE or major is CIVE
Prerequisites: CMGT 161 [Min Grade: D]

CMGT 163 Building Materials and Construction Methods III 3.0 Credits
Continues CMGT 162. Covers roofing systems, glass, glazing, windows, doors, cladding systems, interior finishes, the properties of these materials and construction methods associated with each of them.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if major is AE or major is CIVE
Prerequisites: CMGT 162 [Min Grade: D]

CMGT 240 Economic Planning for Construction 3.0 Credits
Covers techniques for economic decision making for building and infrastructure construction topics. Topics include cash flow, present worth analysis, equivalent annual worth, rate of return, risk analysis, and benefit/cost analysis.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if major is AE
Prerequisites: MATH 121 [Min Grade: D]

CMGT 251 Construction Surveying 3.0 Credits
Covers the theory and use of surveying instruments and principles of plane and topographic surveying. Introduces satellite positioning, geomatics, and other modern surveying techniques related to construction.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if major is AE
Prerequisites: MATH 121 [Min Grade: D]

CMGT 261 Construction Safety 3.0 Credits
Covers OSHA liability, general safety, hazard communication, fire, material handling, tools, welding, electricity, scaffolding, fall protection, cranes, heavy equipment, excavation, concrete, ladders and stairways, confined space entry, personal protective equipment, and health hazards. Course approved by the osha Training Institute.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is AE or major is ARCH or major is CIVE or major is CMGT or major is EE.
Cannot enroll if classification is Freshman

CMGT 262 Building Codes 3.0 Credits
Familiarizes students with the content of the boca International Building Code (emphasizing the non-structural provisions), the purpose and intent of code requirements, and how to apply the code to structures and occupancies. Examines how the code is used as a tool in design and construction and prepares students for the advent of a single model building code planned for the nation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is AE or major is ARCH or major is CIVE or major is CMGT or major is EE.
Cannot enroll if classification is Freshman

CMGT 263 Understanding Construction Drawings 3.0 Credits
This course examines a variety of construction documents, including drawings, details, graphic standards, sections, and quantities for competitive bidding and execution of projects. Both residential and commercial construction documents will be examined.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CMGT 161 [Min Grade: D] and CMGT 162 [Min Grade: D]

CMGT 264 Construction Management of Field Operations 3.0 Credits
This course is intended to equip students with the requisite knowledge and skills required to successfully manage and support construction field operations. Knowledge areas include contract administration, project engineering, site superintendence, and other topics critical to field operations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CMGT 101 [Min Grade: D] and CMGT 163 [Min Grade: D] and CMGT 263 [Min Grade: D]

CMGT 265 Information Technologies in Construction 3.0 Credits
The objective of this course is to expose students to a large variety of information technologies in construction and will discuss the impact of these technologies on work environments, processes, and work quality. Students will investigate a variety of issues surrounding IT in construction including implementation, standards, integration, knowledge management and the underlying technology.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

CMGT 266 Building Systems I 3.0 Credits
This course covers construction management and design concepts relating to heating, ventilation, and air conditioning systems and the integration of these systems into the building design and construction process.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: PHYS 182 [Min Grade: D]

CMGT 267 Building Systems II 3.0 Credits
Continues CMGT 266. This course covers construction management concepts relating to electrical systems, wiring, lighting, signal and data systems, and transportation systems and the integration of these into the building design and construction process.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CMGT 266 [Min Grade: D]

CMGT 355 Introduction to Sustainability in Construction 3.0 Credits
An overview of the design and construction of high performance buildings. Students will gain topical familiarity with the wide range of issues related to sustainable design and construction. The USGBC's green building certification program will be covered in detail. Both historical and contemporary case studies will be utilized.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 361 Contracts And Specifications I 3.0 Credits
Analyzes construction contracts, specifications, and practices with regard to business law and liability. Required for construction management students. Elective for others. Fall.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

CMGT 362 Contracts and Specifications II 3.0 Credits
Continues CMGT 361. Examines contractor, architect, and engineer responsibilities through case studies and class discussions. Winter.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CMGT 361 [Min Grade: D]

CMGT 363 Estimating I 3.0 Credits
Covers discussion of the estimating function and review and applications of material quantity survey techniques used in estimating costs of construction projects. Includes types of approximate and precise methods of estimating and their uses, and computer applications. Required for construction management students.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MATH 110 [Min Grade: D] and CMGT 263 [Min Grade: D]

CMGT 364 Estimating II 3.0 Credits
Covers pricing and bidding of construction work including cost factors, labor and equipment, productivity factors, prices databases, job direct and indirect costs, methods of estimating time, materials, equipment, subcontractors' work, general expenses, and profit, bid preparations and submission, and computer applications.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CMGT 363 [Min Grade: D]

CMGT 365 Soil Mechanics in Construction 4.0 Credits
Gives an overview of the types of problems encountered in geotechnical construction. Subjects covered will be composition, groundwater fundamentals, settlement and consolidation, stability of earth slopes, types of foundations and behavior of difficult soils.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.
Prerequisites: CMGT 161 [Min Grade: D] and MATH 102 [Min Grade: D] and PHYS 182 [Min Grade: D]

CMGT 366 Construction Accounting and Financial Management 3.0 Credits
This course brings together all of the key principles from general business accounting, financial management, and engineering economics needed by construction managers vis-a-vis the unique characteristics of the construction industry, and addresses how these principles are specifically applied in the construction industry, and how they should interact effectively to ensure the efficient and profitable management of construction projects and companies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: ACCT 116 [Min Grade: D] and CMGT 364 [Min Grade: D] and CIVE 240 [Min Grade: D]

CMGT 371 Structural Aspects in Construction I 3.0 Credits
The first of two course series designed specifically for construction management majors. The sequence addresses the interactions of different kinds of loads with common structural elements and design considerations for typical construction materials. This course places emphasis on the design of wood framed construction.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.
Prerequisites: CMGT 161 [Min Grade: D] and MATH 102 [Min Grade: D] and PHYS 182 [Min Grade: D]

CMGT 372 Structural Aspects in Construction II 3.0 Credits
The second part in a two-course sequence for Construction Management majors. The course places emphasis on the design and analysis of concrete and steel frame construction.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CMGT 371 [Min Grade: D]

CMGT 380 Special Topics in Construction Management 12.0 Credits
Examines a variety of topics in the construction industry. Past topics have included real estate.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit
Restrictions: Cannot enroll if classification is Freshman

CMGT 450 Construction Management of Field Operations 3.0 Credits
This course is intended to equip students with knowledge and skills required to successfully manage and support construction field operations. Knowledge areas include contract administration, project engineering, site superintendence, and other topics critical to field operations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Pre-Junior or Sophomore
Prerequisites: CMGT 101 [Min Grade: D] and CMGT 163 [Min Grade: D] and CMGT 263 [Min Grade: D]

CMGT 451 Heavy Construction Principles & Practices 3.0 Credits
This course is intended to provide students an introduction to the principles and practices employed in heavy construction. The course content is presented from a practical perspective focusing on actual field applications.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

CMGT 461 Construction Management 3.0 Credits
Covers construction management concepts and practices, the management system, construction planning and programming, project control, environmental management, total quality management, and ethics in construction management. Winter.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is AE or major is ARCH or major is CIVE or major is CMGT or major is INTR and classification is Junior or Pre-Junior or Senior.

CMGT 463 Value Engineering 3.0 Credits
Covers the value concept, value engineering job plan, and techniques of project selection.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

CMGT 465 Marketing Construction Services 3.0 Credits
Applies marketing principles to the construction industry. Includes understanding the roles of market research, business development planning, and networking techniques. Students will acquire the skills and techniques to prepare a winning presentation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

CMGT 467 Techniques of Project Control 4.0 Credits
This course covers construction planning, scheduling, network systems, and communications required for project control, diagram logic, and claims prevention.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Pre-Junior or Sophomore
Prerequisites: CMGT 163 [Min Grade: D] and CMGT 263 [Min Grade: D]

CMGT 468 Real Estate 3.0 Credits
Overview of the development process including site selection, residential densities, market analysis and cash flow analysis.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

CMGT 469 Construction Seminar: Contemporary Issues 3.0 Credits
This course is intended to prepare students for professional practice through a survey of the current and future state of the industry.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Junior or Pre-Junior or Sophomore

CMGT 470 Productivity in Construction 3.0 Credits
Explores the evaluation of construction management's effectiveness. Overview of techniques required for improvement of construction field efficiency including quality management, productivity measurements, method improvement, human factors, and communications.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 499 Construction Management Independent Study Project 0.5-4.0 Credits
This course is a capstone course intended to be a culminating experience in the Construction Management Program.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 2 times for 8 credits
Restrictions: Can enroll if classification is Senior.

Creativity Studies

Courses

CRTV 301 Foundations in Creativity 3.0 Credits
This course provides a foundation in creativity including leading creativity theorists and their ideas, and introduction to creativity in many fields. Students will explore basic creative characteristics including originality, fluency, flexibility, elaboration, resistance to premature closure, and tolerance of ambiguity. Sets the foundation for acquiring tools and applying creativity.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

CRTV 302 Tools and Techniques in Creativity 3.0 Credits
This hands-on course provides tools for enhancing creative strengths including role-play, simulation, brainstorming together with synectics, and creative problem solving. A second focus is the role of inspiration in how creativity, personal maturity, and spirituality inter-relate and how this interaction expands our repertoire of tools and techniques in creativity.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

CRTV 303 Creativity in the Workplace 3.0 Credits
This course focuses on how creative ideas happen and how they become innovations to reveal a set of principles for infusing creativity into every aspect of an organization. Examples from a wide range of settings demonstrate how to build systemic creativity at the individual, team, and leadership levels.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

CRTV 380 Special Topics in Creativity Studies 0.5-12.0 Credits
Special Topics of interest in creativity and innovation. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 12 times for NaN credits

Computing Technology

Courses

CT 100 Microcomputer Hardware 3.0 Credits
This course imparts to the student knowledge of microcomputer hardware by providing instruction on system configuration, installation, upgrades, diagnosis, repair, preventive maintenance, and safety.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 120 Microcomputer Operating System 3.0 Credits
Prepares students for DOS/Windows with a brief introduction to networking. Students learn installation procedures and how to deal with current and legacy systems, create and use emergency boot systems, and manage printers and other devices. Students install Windows operating systems, manage window devices and configuration utilities, use the FDISK utility, perform backups, manage system files, configure network and internet access, and troubleshoot operating system errors.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 100 [Min Grade: C]

CT 140 Network Administration I 3.0 Credits
Students gain an understanding of terminology, technology, and issues involved in implementing networks. Topic include: understanding the OSI 7 layer model; concepts of servers and clients; network hardware/software functions; basics of TCP/IP protocol, main types of network topologies (bus, ring, star and mesh); and share and access network resources (files, printers, etc.).
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 100 [Min Grade: C]

CT 200 Server I 3.0 Credits
Topics include advanced PC hardware and server issues, including RAID, SCSI, troubleshooting and problem determination, upgrading, configuration, and disaster recovery. The second part of this course is an introduction to Apache Server concepts. Topics include: installations, configuration and administration in environments such as Windows and Linux.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 210 Linux I 3.0 Credits
The purpose of this course is to introduce the student to the principles and practices of Linux server. Upon successful completion of this course, students will be able to use RPM to install, verify, query, erase, and update packages; access Resources on other systems; install and configure NFS; integrate Linux systems with other operating system platforms; examine basic networking concepts; configure xinetd, DNS, and TCP/IP network administration; examine system scripts and configure cron; configure boot options; configure the X Server; implement and administer security issues; install and configure mail services.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 212 Computer Forensics I: Fundamentals 3.0 Credits
This course presents the theory, methodology and hands-on labs necessary for students to become competent in the basics of computer forensics. Topics covered include: understanding computer investigations, the investigators, laboratory, current forensics tools, digital evidence controls and processing crime.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 214 Computer Forensics II: Forensics and Investigations 3.0 Credits
Students will learn what computer forensics and investigation is as a profession and gain an understanding of the overall investigative process. Disk structures and operating system architectures are analyzed. Topics include the importance of the digital evidence control process and how to process crime and corporate scenes, data acquisition of single and RAID systems, computer forensics analysis, e-mail investigations, investigative report writing and expert witness requirements.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 212 [Min Grade: C]

CT 215 Computer Forensics III: Advanced Computer Forensics 3.0 Credits
This course provides a solid foundation and advanced topics for students who will soon be in the field conducting computer forensic investigations, public or private. This course will introduce computer forensics to non-traditional devices such as smart phones and other non-traditional devices. Advanced topics include live memory analysis, anti-forensic techniques and portable media analysis including iPhones, Blackberrys and other smart phones. This course will use current open source and commercial tools.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 214 [Min Grade: C]

CT 220 Database I 3.0 Credits
Extensive introduction to data server technology, concepts of relational databases and SQL. Best engineering practices utilizing DFD, ERD, CRUD, TIC charts. Data-dictionary utilization, use of primary keys, and the first three forms of normalization. Students are expected to create and maintain database objects and to store, retrieve, and manipulate data.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 222 Security and Information Warfare 3.0 Credits
This course presents the theory and methodology of Information Warfare and Security. Topics covered include: intellectual property crimes; computer fraud; harassment; embezzlement; eavesdropping; sabotage; surveillance; identity theft; incident handling; terrorism; and the protection of critical infrastructure. The course requires critical thinking and analysis of topics.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 225 Data Mining Technology for Security 3.0 Credits
The course focuses on data mining technology used to combat crime. Students learn the theory of various searching techniques and criminal detection tactics and acquire fundamental knowledge of investigative data mining techniques.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 230 Web Development I 3.0 Credits
This course begins with an overview of the history of the internet. We examine how the Internet has changed modern society. Using XHTML, students acquire the skills needed to develop, design and create web pages. This course develops functional knowledge of microcomputer use beyond computer literacy, and examines fundamental networking concepts like TCP/IP, HTTP, FTP, SMTP, IMAP, etc.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 240 Web Development II 3.0 Credits
This course will focus on building an understanding of JavaScript and Cascading Style Sheets. Students will learn the basics of each language and apply them to the development of interactive and versatile page designs. The class culminates in a web site that integrates the use of both technologies that offers two different layouts, one ¿standard¿ and one ¿accessible¿ with JavaScript used to control which is displayed in the browser window. The course also has an overview of the foundations and theory of XML and XLST.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 230 [Min Grade: C]

CT 290 Client Side Programming 3.0 Credits
This course emphasizes becoming productive quickly as an Object-Oriented client-side programmer. Students learn how to create real-world Object-Oriented GUI applications using Java or Visual BASIC.Net. Topics include: Programming Environment; Fundamental Programming Structures; Objects and Classes; Inheritance; Interface Components; Event Handling; Applets; Debugging; and Graphics Programming.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 295 Public Key Infrastructure Technology 3.0 Credits
Practical knowledge of public key infrastructure. Topics include: symmetric & asymmetric cryptography, hashes, digital signatures and certificates, PKI basics & services, key and certificate life cycles, PKIX, protocols and formatting standards, trust models, authentication methods and deployment.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CT 320 [Min Grade: C]

CT 300 Security Technology Models and Architecture I 3.0 Credits
Presents theory and techniques utilized by IT Security professionals to secure a wide range of diversified platforms. Focuses on solutions for securing web servers, code, communications, applications, and databases.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CT 380 [Min Grade: C]

CT 310 Linux II 3.0 Credits
Topics Covered: Continuing Linux to meet requirements. Shell environment, Customization of the Environment, Shell Program Structure, Shell Program Execution, Shell Variables, Positional Parameters, Special Shell Variables, Shell Programming Statements, Conditional Statements, Looping Constructs, Interrupt Handling, and Debugging Tools.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 210 [Min Grade: C]

CT 312 Access Control and Intrusion Detection Technology 3.0 Credits
Fundamental theory and methodology of intrusion detection systems. Using intrusion detection systems to secure corporate and personal networks against attacks. Hands-on laboratory experience using an in-depth, open-source network intrusion detection system.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Pre-Junior or Sophomore
Prerequisites: CT 420 [Min Grade: C]

CT 315 Security Management Practice 3.0 Credits
Managerial issues involved in the daily operations of an IT Security department. Topics include staffing, budgets, job descriptions, long term planning, resource allocation, training of security personnel, motivational techniques, interaction with other departments including upper management.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Pre-Junior or Sophomore

CT 320 Server II 3.0 Credits
This course is designed to introduce the Microsoft Windows Server Operating System. Upon successful completion of the course, the student will be able to implement, administer and troubleshoot in a network environment. The course will cover installation, administration of resources, monitoring and optimizing system performance, implementing, managing and troubleshooting hardware device drivers, managing data storage, setting up and configuring users, groups, policies and resources.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 200 [Min Grade: C]

CT 325 Operating System Security Architecture I 3.0 Credits
This course provides requisite knowledge to perform network security within a Windows based computing environment. Topics include: how Assets are Attacked and Secured, Trusted Computing Bases, Cryptography, Protecting Web Servers, Security for Web Browsers, Database Security, Protecting DNS, Security Policies and Procedures.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Pre-Junior or Sophomore

CT 326 Operating System Security Architecture II 3.0 Credits
Provides students with the knowledge necessary to design a security framework for small, medium and enterprise networks utilizing Windows based computing technologies. Design and implementation of an effective network security plan based on an organization's business needs. Topics include: GPO's, AD, and Auditing.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Pre-Junior or Sophomore
Prerequisites: CT 320 [Min Grade: C] and CT 325 [Min Grade: C]

CT 330 Network Administration II 3.0 Credits
Course covers both theoretical knowledge and hands-on exercises for networking using CISCO hardware. Topics include: Extending Switched Networks with VLANS; Determining IP Traffic with Access Lists; Establishing Point-to-Point Connections; and Establishing Frame Relay Connections.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 140 [Min Grade: C]

CT 336 Internet Protocol Security and Virtual Private Network Technology 3.0 Credits
Technological components of IP Security and underlying architecture. Theory of symmetric-key cryptographic algorithms, including AES, CAST, Blowfish, IDEA, RC2, RC5, and Skipjack. Understanding of PKI infrastructure and the managed certificate protocol. Implementing VPN solutions in a variety of scenarios.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 140 [Min Grade: C] and CT 420 [Min Grade: C]

CT 339 Computing and Security Technology Practicum 3.0 Credits
This course provides an opportunity to gain professional experience in the CST field.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is CT.

CT 340 Operating Systems Architecture I 3.0 Credits
Students learn to set up and support MS Windows Operating System. Students gain experience in installing, administering, implementing and troubleshooting this TCP/IP Protocol. Explain data system security through group policy and encryption of files system.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 350 Network Administration III 3.0 Credits
This class gives successful student important knowledge and skills necessary to select, connect, configure, and troubleshoot the various CISCO networking devices. Topics include: Extending Switched Networks with VLANS; Determining IP Routes; Managing IP Traffic with Access Lists; Establishing Point-to-Point Connections; and Establishing Frame Relay Connections.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 330 [Min Grade: C]

CT 355 Wireless Network Security Technology 3.0 Credits
Theory, methodology and hands-on labs relating to the unique security issues of Wireless Networks. Limitations and risks of Wireless Networks. Use of audit and exploit tools to discover security flaws. Protocol and signal vulnerabilities. Methods to secure such vulnerabilities.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 420 [Min Grade: C]

CT 360 Operating Systems Architecture II 3.0 Credits
The knowledge base and skill sets presented in this course are foundations for support professional who are new to the Microsoft Windows O/S architecture and/or who will be responsible for installing, configuring, managing, and supporting a network infrastructure that uses the Microsoft Windows Server products.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 320 [Min Grade: C] and CT 340 [Min Grade: C]

CT 362 Network Auditing Tools 3.0 Credits
Theory, methodology and hands-on labs relating to Network Auditing. The course relies on advanced multi-functional network auditing tools to uncover Network Security problems, with the purpose of eliminating these vulnerabilities.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 420 [Min Grade: C]

CT 370 Object Oriented Systems Analysis 3.0 Credits
This course is designed to increase knowledge of the software development process with a focus on requirements gathering and documentation. UML notation is used. In addition to object-oriented analysis, techniques include the use of conceptual object models, use cases, and business process modeling.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 375 Database II 3.0 Credits
This course examines inserting, updating and deleting data. Subqueries are explored in detail along with the use of many Oracle intrinsic single row and group functions. Joints, merge, views, foreign keys, and compound primary keys are all studied in depth.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 220 [Min Grade: C]

CT 380 Operating Systems Architecture III 3.0 Credits
Students learn network administration skills including: how to configure and troubleshoot client computers; network printing; Active Directory; file sharing; Internet connection and services; remote access; and network security.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 360 [Min Grade: C]

CT 382 Applied Cryptography 3.0 Credits
This course presents the theory, methods, strengths, weaknesses, and effective strategies necessary for students to acquire a fundamental knowledge of Cryptography and Stenography. This is a hands-on course utilizing several tools and software programs. Emphasis is placed on formulating effective strategies, such as when and how to protect computer data.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 385 Web Development III 3.0 Credits
Students will acquire skills to develop, design and produce Web pages using Dreamweaver and Flash. Using software, students will construct a multimedia website, incorporating Flash movie elements, interactivity, and sounds.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 240 [Min Grade: C]

CT 388 Topics in Computing Technology I 3.0 Credits
This course will cover special topics of interest to students in the Computing Technology Major. May be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

CT 389 Topics in Computing Technology II 3.0 Credits
This course will cover special topics of interest to students in the Computing Technology Major. May be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

CT 390 Server Side Programming 3.0 Credits
This class is designed to provide students with intensive hands-on experience in using server-side technology to develop Web applications. Server-side programming, sometimes called servlets, is a powerful hybrid of the Common Gateway Interface (CGI) and lower-level server APU programming such as NSAPI from Netscape and ISAPI from Microsoft.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 290 [Min Grade: C]

CT 392 Web Development IV 3.0 Credits
Students will acquire skills to develop, design, and produce a functional dynamic Web site on ASP. An e-commerce web site is developed in the classroom to apply dynamic theory and practice. In addition, exploration of intellectual property, copyright, trademark, and privacy issues as they relate to web development are included.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 1 times for 3 credits
Prerequisites: CT 385 [Min Grade: C]

CT 393 Information Technology Security Risk Assessment 3.0 Credits
This course addresses risk management methodology, the specific procedures for determining assets valuation, vulnerabilities, and threats. Risk migration methods that security professional use to protect valuable IT assets will also be studies. Issues, designed to foster critical thinking, are explored, as well as the standardized approaches to risk management.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 395 Information Technology Security I 3.0 Credits
This class is a hands-on introduction of key security concepts such as authentication, malware and attacks, security in transmissions (including wireless). Cryptography, PKI and security analysis and planning (including risk management). Security policy, law on computer security violations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CT 399 Independent Study in Computing Security and Technology 0.5-6.0 Credits
Provides individual study or research in computing and security technology with faculty supervision. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 2 times for 6 credits

CT 400 Network Security 3.0 Credits
This class focuses on the security aspects of networks. Topics covered: intrusion detection, VPN, and Firewalls. This course is designed to provide students with the necessary skills and information aligned with Securing Networks.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 350 [Min Grade: C]

CT 402 Network Security II 3.0 Credits
Theory, methodology of Security firewalls, Topics include: firewall models, user interfaces, feature sets, interfaces, routing, IP addressing services, IP multicast support, monitoring with SNMP, authentication, authorization, and accounting, address translation, traffic content filtering, application inspection, traffic shunning, and firewall failover.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore
Prerequisites: CT 400 [Min Grade: D]

CT 405 Enterprise Programming 3.0 Credits
This course covers the main aspects of Enterprise Component Architecture to build reliable, scalable and portable enterprise-wide distributed application. All architecture discussions, examples and exercises are described according to Object-oriented Analysis & Design (OOAD) principles and using the Unified Modeling Language (UML) notation OOAD and UML are briefly introduced, too.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 390 [Min Grade: C]

CT 407 Network Security III 3.0 Credits
In-depth coverage of VPN technology, using different encryption schemes, certificates (PKI Theory, certificate creation and implementation), integration with routers, router management, advanced techniques in encryption and virtual private networking, user defined tracking, load balancing and firewall synchronization.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 402 [Min Grade: D]

CT 410 Linux III 3.0 Credits
All the key core elements of the Linux operating system: network configurations, recovery planning. TCP/IP, DHCP, DNS, Apache, Security, and email. These are the typical day-to-day administrative and maintenance issues and tasks commonly faced by Linux system administrators.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 310 [Min Grade: D]

CT 412 Information Technology Security Policies 3.0 Credits
This course presents the theory and legal issues necessary for
students to acquire fundamental knowledge of Computer Policies for
information Security. Topics covered include: E-mail, Employee Privacy,
Labor Organization Activities (Fair Use), Avoiding Discrimination and
Harassment, Copyright, Defamation, Spamming, Trade Secrets &
Confidential Information, Attorney-Client communication via E-mail,
Computer Security, Preventing Waste of a Computer Resources,
Essentials for Good Policy, and Ensuring Compliance.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit

CT 415 Disaster Recovery and Continuity Planning 3.0 Credits
Disaster Recovery & Continuity Planning specific to Emergency Recovery
Procedures. Techniques for development of disaster recovery plans,
procedures and testing methods. Strategies used by businesses to assure
that sensitive data will not be lost in the event of a disaster. Techniques
used to manage potential risk within multiple environments.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit

CT 420 Information Technology Security II 3.0 Credits
This course focuses on network security. Students will gain hands-on
experience in the areas of Internet vulnerabilities, analyzing intrusion
signatures, risk analysis, designing and configuring firewall systems,
router security, Attack and Defense Techniques, IP and Packet structure
and analysis, creating a security policy, operating system security for
Windows and Linux.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 395 [Min Grade: C]

CT 422 Incident Response Best Practices 3.0 Credits
Theory and legal issues necessary for students to acquire fundamental
knowledge of how to design an effective Incident Response Policy. Topics
include forming and Incident Response Team, types of responses, legal
issues, training employees, selecting tools, honey pots, computer attacks,
and the cost of an incident.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit

CT 425 Database III 3.0 Credits
This course is an introduction to Oracle¿s PL/SQL programming
language. Anonymous blocks, PL/SQL constructs, stored procedures and
functions are examined in depth.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 375 [Min Grade: C]

CT 427 E-Commerce and Web Security Technology 3.0 Credits
In-depth understanding of security problems and risks specific to e-
Commerce on web servers. Implementation of advanced security
technologies specific to e-Commerce. Design of secure Web Sites,
mobile commerce applications, electronic payment systems, address
communication security. Web- and Java-related security issues.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 420 [Min Grade: D]

CT 430 Database IV 3.0 Credits
This course introduces packages along with program unit dependencies.
Triggers and Oracle-supplied packages are examined in detail. Time
is also allocated for performance tuning specifically utilizing the Oracle
tables.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 425 [Min Grade: C]

CT 431 Project Management 3.0 Credits
This course teaches how to develop project management plans; develop
an understanding of the risks inherent in project development; and be
able to evolve coping strategies to deal effectively with projects that go
off track. Areas covered include: Project Definition, Project Risk, Project
Planning, Risk Assessment, Critical Path, and Cost Management.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.

CT 432 Information Technology Security Systems Audits 3.0 Credits
This course presents the theory, methodology, procedures and hands-on
labs necessary for students to acquire a fundamental working knowledge
of IT System Audits. Students learn how to discover system vulnerabilities
with proper audit procedures, and how to document their findings properly
for upper management.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 420 [Min Grade: C]

CT 435 Database V 3.0 Credits
Students with a foundation in the Oracle database continue their student
of the application and how to insure its functionality. Topics in this course
include: backup and recovery analysis and options, recovery structures
and processes, backup configuration, manual backup, automated backup,
archiving, utilities, Recovery Manger catalog design and maintenance,
RMAN, standby databases, Alert and Trace files, dynamic performance,
cache, logs, I/O, shared pool, blocks, rollbacks, optimizing sort operations
and multithreaded server tuning.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 430 [Min Grade: C]

CT 438 Database VI 3.0 Credits
This course provides instruction in the operations of the Oracle database. It presents the day-to-day duties of the database administration, from initialization parameters and table space storage, to data integrity, constraints, and user profiles.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 435 [Min Grade: C]

CT 472 Security Defense Countermeasures 3.0 Credits
Theory, methodology and hands-on labs relating to Defense Countermeasures. Understanding the reasons that lead to system vulnerabilities and how criminals exploit those vulnerabilities. Labs that utilize security software to conduct penetration testing, audits, and system vulnerability tests will be taught.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CT 420 [Min Grade: C]

CT 491 Senior Project I 3.0 Credits
This course is an independent project which small student teams determines and scopes an appropriate computing technology project that can be completed within the constraints of time and resources under faculty guidance. The objective of the course is to provide specifications and requirements for the team project.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.

CT 496 Senior Project II 3.0 Credits
This course is a continuation of Senior Project I. In this course, student-teams are required to implement theirs project specifications and requirements developed in the previous course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.
Prerequisites: CT 491 [Min Grade: C]

Culinary Arts

Courses

CULA 115 Culinary Fundamentals 3.0 Credits
Introduces culinary principles and procedures used in commercial food preparation and practical application of classical culinary techniques.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is HOSP or major is HRM.

CULA 120 Techniques and Traditions I 3.0 Credits
In this foundation culinary course, students will learn the fundamentals of a professional kitchen through lecture, demonstration and production. Classical and contemporary techniques are emphasized for development of cooking methods, knife skills, and food and kitchen safety and sanitation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CULA 121 Techniques and Traditions II 3.0 Credits
A continuation of CULA 120. Students will further develop their kitchen skills with application to recipe and menu development and plate design. Service to the public will be executed through various preparation techniques and types of service.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 120 [Min Grade: D]

CULA 125 Foundations of Professional Baking 3.0 Credits
This course offers study and practice of the fundamentals of baking science. Course content includes related terminology, equipment identification and utilization, formulas and recipe conversions, and accurate ingredient scaling. Final products are used for service to the public in the Academic Bistro restaurant.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 120 [Min Grade: D] or CULA 115 [Min Grade: D]

CULA 216 A la Carte 3.0 Credits
This is a sophomore level course in dining operations designed around a weekly restaurant operation, which is marketed and delivered to the Drexel Community and general public.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 215 [Min Grade: D]

CULA 220 Patisserie I 2.0 Credits
Covers the basic methods and techniques used in preparing basic desserts including cakes, pies, puddings, mousses, pastries, and tarts, with an emphasis on the variety of crusts, decorations, icings, and shortenings.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CULA 125 [Min Grade: D]

CULA 225 Patisserie II 2.0 Credits
Builds on the accumulated knowledge and skills gained in CULA 220.
Advances those skills by utilization of different ingredients and products
such as pastries, petit fours, and flaming desserts. Emphasizes form,
formula development, and presentation of classical pastries.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CULA 220 [Min Grade: D]

CULA 226 Patisserie III 2.0 Credits
This advanced pastry course is the third in a series of related topics.
Culinary students will have the opportunity to work with techniques in cake
decorating, sugar and chocolate work, and candy making. Attention to
detail in pastry arts will be emphasized in this course.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 225 [Min Grade: D]

CULA 235 Professional Dining Room Management 2.0 Credits
Students will manage front-of-the house operations in a professional
dining room setting with fine dining service to the public. Table side
preparations and cookery will be strongly emphasized with weekly
executions.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 215 [Min Grade: D]

CULA 240 Fundamentals of Chinese Cuisine 3.0 Credits
Students will explore traditional regional preparations with Chinese
ingredients, such as beef, fowl, lamb, vegetables and various fish and
seafood.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 115 [Min Grade: D] or CULA 120 [Min Grade: D]

CULA 290 Culinary Arts Practicum I 3.0 Credits
Students will gain work experience in culinary production while under
faculty supervision. Students obtain industry jobs, work a minimum of 60
hours, log their experiences, and write a final analysis. The networking
opportunities often lead to rewarding co-op, part time, or full time
employment opportunities. Students take CULA 290 or CULA 291.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is CLSC or major is CULA.
Prerequisites: CULA 120 [Min Grade: D]

CULA 291 Culinary Arts Practicum II 6.0 Credits
Students will gain work experience in culinary production while under
faculty supervision. Students obtain industry jobs, work a minimum
of 120 hours, log their experiences, and write a final analysis. The
networking opportunities often lead to rewarding co-op, part time, or full
time employment opportunities. Students take either CULA 290 or CULA
291.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is CLSC or major is CULA.
Prerequisites: CULA 120 [Min Grade: D]

CULA 300 Fundamentals of Vegetarian Cuisine 3.0 Credits
Exposes students to the preparation of foods and menus without the use
of meat or animal products. Emphasizes preparation techniques and
speed, terminology, and plate presentation commonly used in vegetarian
cooking.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CULA 120 [Min Grade: D] or CULA 115 [Min Grade: D]

CULA 305 Fundamentals of Italian Cuisine 3.0 Credits
Students will be presented with the philosophy of traditional Italian
cooking as it is articulated in the culture of Italy. There will be a strong
emphasis on regional ingredients and recipes. Topics include: basic menu
language, terminology, preparation of various antipasti, pasta, and risotto.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CULA 120 [Min Grade: D] or CULA 115 [Min Grade: D]

CULA 306 Advanced Italian Cuisine 3.0 Credits
A continuation of CULA 305. Utilizing regional Italian products, students
will produce classical and traditional recipes with opportunity to further
develop personal style and creativity. Proper seasoning, handling of
product, and family style and plated presentations will be emphasized.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 305 [Min Grade: D]

CULA 310 Fundamentals of French Cuisine 3.0 Credits
Students are introduced to French cuisine and the production of classical
French dishes using contemporary techniques and ingredients. Topics
include regional French influences on food, terminology and attention to
detail.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CULA 120 [Min Grade: D] or CULA 115 [Min Grade: D]

CULA 311 Advanced French Technique 3.0 Credits
A continuation of CULA 310. In this advanced course students will study
French cuisine, vocabulary and culture as it pertains to the reading,
writing and preparation of recipes, menus and ingredients. Emphasis is on
professional judgment and creativity.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 310 [Min Grade: D]

CULA 315 Fundamentals of American Cuisine 3.0 Credits
Students will study traditional influences on the cooking of regional
American dishes and analyze those influences through recipe
preparations. The history of American foods and their preparation will be
presented.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CULA 120 [Min Grade: D] or CULA 115 [Min Grade: D]

CULA 316 Butchery Laboratory 2.0 Credits
In this culinary lab course students will execute the fabrication of meat,
fish and poultry products, skills necessary in any professional kitchen
operation. Students will perform yield tests and calculate portion cost of
fabricated items.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 115 [Min Grade: D] or CULA 120 [Min Grade: D]

CULA 320 Advanced Culinary Studio 3.0 Credits
Under the direction of culinary industry leaders and program faculty
students will prepare and produce finished plates using a variety of
previously learned skills. Finished products will reflect the style of
a chosen culinary industry leader executed with the judgment and
professionalism of the student.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 115 [Min Grade: D] or CULA 120 [Min Grade: D]

CULA 325 Garde Manger Laboratory 3.0 Credits
Introduces techniques used in the fabrication, selection and preparation of
cold buffet production. Items include cold appetizers, canapes, garnishes,
hors d'oeuvres, salads, and sandwiches. Additional focus on decoration,
form, and presentation of cold food items.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CULA 120 [Min Grade: D] or CULA 115 [Min Grade: D]

CULA 330 Charcuterie 3.0 Credits
Students learn about the chemistry and techniques of curing, brining, and
smoking. Items covered include classic and modern, forcemeats, pates,
galantines, terrines, and sausages (fresh and dry).
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 115 [Min Grade: D] or CULA 120 [Min Grade: D]

CULA 335 Fundamentals of Indian Cuisine 3.0 Credits
This course introduces students to the diverse cooking and cultures of
India. Explores India's unique cooking methods and the varied use of
herbs, spices, and condiments.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 120 [Min Grade: D] or CULA 115 [Min Grade: D]

CULA 399 Independent Study in Culinary Arts 12.0 Credits
Provides independent study in Culinary Arts.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Can be repeated multiple times for credit
Restrictions: Can enroll if major is CULA.

CULA 400 Directed Studies with a Master Chef 3.0 Credits
Structured program that allows students the opportunity to practice the
skills and competencies learned in coursework with an acknowledged
culinarian in a qualified foodservice operation. Students are monitored
by their direct supervisor, by Culinary Arts faculty, and by evaluation of
written reports, workbooks, journals, and portfolios prepared during the
course.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 115 [Min Grade: D] or CULA 120 [Min Grade: D]

CULA 405 [WI] Culture and Gastronomy I 3.0 Credits
The first in a sequence of two courses devoted to the study of food and its
relationship to society. Focuses on food sources and discoveries and their
effects on early population growth and expansion, commerce, and trade
from the Neolithic era to the 16th century.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit

CULA 410 Culture and Gastronomy II 3.0 Credits
The second in a sequence of two courses devoted to the study of food
and its relationship to society. Focuses on food sources and discoveries
and their effects on early population growth and expansion, commerce,
and trade from the 16th century to the present.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 405 [Min Grade: D]

CULA 412 Food Writing for Culinary Professionals 3.0 Credits
A practical introduction to food journalism. Explores through regular writing and reading assignments the broad range of topics typically encountered in a newspaper or magazine environment, from ingredient features and trend stories, to profiles, first person essays, restaurant criticism, "live" deadline assignments, and long-form magazine projects.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

CULA 415 Food Styling and Show Competition 3.0 Credits
This course in the styling and photography of good provides students with an understanding of how natural and plated food presentations are showcased for publication. Subject lighting and color contrast are studied through trial shoots and kitchen experimentation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CULA 115 [Min Grade: D] or CULA 120 [Min Grade: D]

CULA 420 Senior Design Project 3.0 Credits
Students will undertake individual creative research which will enable them to prepare for the Culinary Arts Program annual show. Emphasis will be on the incorporation of skills, technologies and techniques learned from prior coursework and experience.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.
Prerequisites: CULA 310 [Min Grade: D] and CULA 315 [Min Grade: D]

CULA 425 The Kitchen Garden 3.0 Credits
This course familiarizes students with the preparation and planting of a culinary garden using organic gardening techniques. Students also study the relationships between the kitchen garden, the rise of regional food cultures, and the evolution of plant-based foods in the definition of regional and ethnic identities and cuisines. The harvested spring produce is used in menu preparations in the student operated restaurant, The Academic Bistro.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CULA 426 The Kitchen Garden: Summer 3.0 Credits
This course familiarizes students with the dynamics of the contemporary kitchen garden as a food source, the evolution of plant-based foods as a culinary medium and the interconnection between food production, cookery, and social responsibility. The harvested summer produce is used in summer term Culinary Arts classes.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CULA 427 The Kitchen Garden: Fall 3.0 Credits
This course familiarizes students with complex relationships between food sources, the ethics of harvest and food distribution, and the pursuit of flavor from a culinary arts standpoint. Alternative foods, organic foods, and diets connected to seasonality will be discussed as well as energy requirements and globalization of the food supply. The harvested fall produce is used in menu preparations in the student operated restaurant, The Academic Bistro.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CULA 465 Special Topics 3.0 Credits
Provides study in culinary arts on a special topic or on an experimental basis. May be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit
Restrictions: Can enroll if major is CULA.

Customer Operations

Courses

CUST 380 Special Topics in Customer Operations 0.5-12.0 Credits
Covers specific topics related to customer operations. Variable.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit
Restrictions: Cannot enroll if classification is Freshman

CUST 401 Customer Service Practicum I 4.0 Credits
First of a three-course series. Combines classroom theory with practical application at the student's worksite, completing the learning experience. Requires students to demonstrate the ability to apply classroom learning to situations benefiting a corporation. Includes proposals, reports on work in progress, contributions to team efforts and methods of measurement identified by the faculty or mentor.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit

CUST 402 Customer Service Practicum II 4.0 Credits
Second of a three-course series. Combines classroom theory with practical application at the student's worksite, completing the learning experience. Requires students to demonstrate the ability to apply classroom learning to situations benefitting a corporation. Includes proposals , reports on work in progress, contributions to team effort and methods of measurement identified by the faculty or mentor.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit

CUST 403 Customer Service Practicum III 4.0 Credits
Third of a three-course series. Combines classroom theory with practical application at the student's worksite, completing the learning experience. Requires students to demonstrate the ability to apply classroom learning to situations benefitting a corporation. Includes proposals, reports on work in progress, contributions to team efforts and methods of measurement identified by the faculty, or mentor.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit

Electrical Engineering Technology

Courses

EET 102 Introduction to Engineering Technology 3.0 Credits
The main objective of this course is to introduce the basic concepts and the fundamentals of Engineering Technology (ET). Students are introduced to the four tracks (electrical, mechanical, industrial, and biomedical) in ET and work on the selected topics designed to enhance the problem solving techniques.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EET 201 Circuit Analysis I 4.0 Credits
Introduction to the key electrical terms, basic laws and theorems of electric circuits by concentrating on Direct Current (DC) circuit analysis, power, and energy.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 104 [Min Grade: D] and MATH 110 [Min Grade: D]

EET 202 Circuit Analysis II 4.0 Credits
Introduction to time domain (transient) analysis of R, L, C elements and energy storage in L and C circuits. The response of source-free RL, RC, and RLC circuits are developed followed by response to constant voltage and current sources.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 201 [Min Grade: D]

EET 204 Introduction to Nanotechnology 3.0 Credits
The course provides an introduction to scientific notation, size relationships between nanometers and other metric measures, self assembly, molecular recognition, the history of nanotechnology, and the role and influence of nanotechnology in other technologies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CHEM 111 [Min Grade: D] and CHEM 113 [Min Grade: D]

EET 205 Digital Electronics 4.0 Credits
The objective of this course is to introduce AET students to fundamentals of digital electronics starting with the binary number system and proceeding to logic gates, Boolean algebra, combinational logic circuits, and the basic arithmetic units used in digital computers such as adders, counters and shift registers.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 201 [Min Grade: D]

EET 206 Analog Electronics I 4.0 Credits
Students are introduced to linear circuit analysis of passive and active semiconductor components, modeling of non-linear circuit elements, light and heat-dependent semiconductor devices, biasing of three-terminal devices, and semiconductor small-signal models.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 201 [Min Grade: D] and EET 202 [Min Grade: D]

EET 207 Introduction to Laboratory and Process Control 3.0 Credits
This course introduces students to programming techniques used to control laboratory experiments and industrial processes. The emphasis is on applications of LabView and C in real-world measurements and embedded systems.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EET 307 Basic Power Systems I 3.0 Credits
Fundamentals of single-phase and three-phase power systems; introduction to symmetrical components and sequence impedances; power transfer modeling; the per-unit system; power transmission line impedance and admittances.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.
Prerequisites: EET 104 [Min Grade: D]

EET 310 Industrial Application of Nanotechnology 3.0 Credits
This course introduces students to nanotechnology materials, devices, and processes from the perspective of product development and process engineering, manufacturing scale-up, quality assurance, and reliability. Laboratory projects provide students with hands-on experience in fabricating and characterizing nanomaterials and nanodevices, and their applications for renewable energy, solid-state lighting, novel functional materials, and biomedical engineering.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CHEM 111 [Min Grade: D] and CHEM 113 [Min Grade: D]

EET 311 Modeling of Engineering Systems 4.0 Credits
Course introduces students to development and application of ordinary differential equations to systems analysis with emphasis on electrical systems. Particular attention is paid to the derivation of differential equations from given practical circuits used in industrial applications.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MATH 122 [Min Grade: D] and EET 201 [Min Grade: D]

EET 313 Signals and Systems I 4.0 Credits
Course introduces students to applications of the systems analysis to the design of useful circuits and devices used in industrial applications. Covers time and frequency domain circuit analysis (transfer function, convolution) to determine response of the system to the arbitrary input.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 311 [Min Grade: D]

EET 317 Analog Electronics II 4.0 Credits
Students are introduced to four-layer diodes, power amplifiers, differential amplifiers, linear and non-linear operational amplifiers, feedbacks, oscillators, and active filters. Class discussions include practical circuits, troubleshooting, and case studies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 206 [Min Grade: D]

EET 319 PLC Fundamentals 4.0 Credits
Introduces the fundamentals of programmable logic controllers, and PLC application in process control. The course includes both lecture and laboratory aimed at applying fundamental principles to practical projects. The emphasis is on the basics of ladder logic, including timers, counters, and program control.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 205 [Min Grade: D]

EET 320 Renewable Energy Systems 3.0 Credits
This course provides an introduction to energy systems and renewable energy resources, with a scientific examination of the energy field and an emphasis on alternate energy sources and their technology and applications. The class explores society's present needs and future energy demands, examines conventional energy sources and systems, including fossil fuels and then focuses on alternate, renewable energy sources such as solar, wind power, geothermal and fuel cells.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 103 [Min Grade: D] and PHYS 104 [Min Grade: D]

EET 322 Energy Conversion 4.0 Credits
The course covers the fundamentals and the principles of electrical machines and transformers, with an emphasis on their application and installation. The course covers transformer, dc, ac and special machines. Novel energy conversion techniques such as Fuel Cell and Batteries are also discussed.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 202 [Min Grade: D]

EET 323 Electrical Systems Design 3.0 Credits
This course covers the basics of industrial systems, including safety, grounding, protection, lighting, distribution, commonly found in residential, commercial and industrial environment. The course formulates the application of standards and codes such as NEC, NEMA and IEEE.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 202 [Min Grade: D]

EET 324 Power Electronics 4.0 Credits
The course covers the basics of the industrial and power electronics over a spectrum of applications and provides an introduction to the emerging technologies in these fields. The course is accompanied by laboratory using hardware and software simulation tools.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 202 [Min Grade: D]

EET 325 Microprocessors 3.0 Credits
Introduces student to fundamentals of microprocessing using an application-oriented approach. Includs fundamental principles and system requirements supplemented with specific implementation examples and practical circuits with detailed design considerations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 205 [Min Grade: D]

EET 333 [WI] Non-Destructive Evaluation of Materials 4.0 Credits
The course presents principles of ultrasound nondestructive evaluation of materials combining projects and hands-on experience with lectures. Students learn the physical principles of measurements of sound velocity in different materials, attenuation coefficients, directivity pattern of transducers and location and dimensions of heterogeneities in materials, such as flaws and cavities. This is a writing intensive course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 103 [Min Grade: D] and PHYS 104 [Min Grade: D]

EET 335 Acoustic Emission 4.0 Credits
The course presents principles of acoustic emission using practical applications in various industries. Physical principles of acoustic emission generation, propagation and detection in engineering materials and structures are presented. This includes principles of stress and strain and the underlying materials science of material deformation, crack growth and failure. Students learn how these principles are utilized to build technical applications of acoustic emission considered as an NDE method.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 103 [Min Grade: D] and PHYS 104 [Min Grade: D]

EET 401 Applied Microcontrollers 3.0 Credits
The course is an introduction to microcontroller hardware and software with an emphasis on embedded control applications. Topics covered include microcontroller architectures, programming, analog and digital input/output, timing, debugging and PC-based software development tools.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 205 [Min Grade: D]

EET 402 Control Engineering 3.0 Credits
The course covers fundamental of control theory and their applications, including, linear systems and feedback, linear system operation and stability, standard methods applicable to the linear systems and basic for designs and applications.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 311 [Min Grade: D] and EET 313 [Min Grade: D]

EET 404 Signals and Systems II 3.0 Credits
Introduces the analysis of electric circuits under steady sinusoidal conditions, applications of Laplace transformation and complex frequency analysis, and Fourier analysis for representing an arbitrary time function as a sum of sinusoidal functions.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 313 [Min Grade: D] and EET 311 [Min Grade: D]

EET 406 Communication Systems 3.0 Credits
This course introduces AET student to fundamentals of Communication Systems using an integrated approach to analog and digital communications. Design and applications of contemporary communication systems are emphasized via the reduction theory to practice.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 311 [Min Grade: D] and EET 313 [Min Grade: D]

EET 407 Power Systems Fundamentals 3.0 Credits
The course covers the basic principles of the power systems, electric grid, methods to analyze electric grid systems and basic power system protection and stability.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 202 [Min Grade: D] and EET 322 [Min Grade: D]

EET 409 Optical System Design 3.0 Credits
This course introduces ET students to fundamentals of optics and optical systems using an application-oriented approach. Special attention is given to fundamental principles of optical systems and their requirements supplemented with specific applications-based examples.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 104 [Min Grade: D]

Emergency Management

Courses

EMER 210 Hazard Mitigation 3.0 Credits
This course examines risks associated with natural and man-made hazards and explores how to reduce threats to life and property.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMER 215 Public Management in Times of Crisis 3.0 Credits
This course covers comprehensive disaster plans and training for the public manager. The course will include planning for natural disasters and accidents, and planning for events related to terrorism.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMER 220 Emergency Incident Risk Management 3.0 Credits
This course will focus on risk management skills used by first responders to emergency incidents. Particular attention will be paid to the emergency operations systems of the Philadelphia police and fire departments in conjunction with the Managing Director's Office of Emergency Management.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMER 225 Infrastructure Disaster Recovery 3.0 Credits
This course will focus on the recovery of a business after a disaster occurs. This course will take the view of the private business enterprise and ways to maintain "business as usual". The course will provide information about the process of business recovery planning.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMER 235 Public Information Strategies 3.0 Credits
This course presents ways organizations handle and disseminate information to the public. Specifically, the course will analyze the role of the public information officer, the procedures for providing information to internal and external audiences, dealing with media outlets, and the importance of crisis communication plans.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMER 245 Search and Rescue 3.0 Credits
This course will focus on the fundamentals of Search and Rescue (SAR) skills and training. Students will be taught the proper use of equipment and how to assist people in distress by using SAR systems to provide responses to lost, injured, or overdue people who may be in harm's way in varied environments.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMER 380 Special Topics in Emergency Management 0.5-12.0 Credits
Special Topics of interest in emergency management. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

Emergency Medical Services

Courses

EMS 101 Principles of Emergency Care I 4.0 Credits
Presents basic prehospital assessment and medical interventions for problems such as cardiac, respiratory, environmental, obstetrical emergencies. Skills include basic interventions: CPR/AED use, lifting and moving techniques, oxygen, emergency childbirth, and stabilizations of other emergency situations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 102 Principles of Emergency Care II 3.0 Credits
This course continues prehospital basic ambulance operations focusing on trauma emergencies, triage, hazardous materials response, and vehicle rescue. Skills include spinal immobilization, splinting, bleeding control, extrication, triage, and basic ambulance operations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 103 Physical Examination 3.0 Credits
This course enhances and builds upon existing assessment, theoretical, and psychomotor skills to increase the depth of patient assessment and communication skills of the provider. It requires a skill lab and clinical rotation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 104 Disease Process I 3.0 Credits
Develop a basic conceptual understanding of the pathologic processes involved in disease and injuries commonly encountered in the pre-hospital setting. Covers dysfunctions/disorders involving the cells, genetics, development, the immune system, inflammation, skeletal, nervous system and fluids and electrolytes.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 105 Pre-hospital Issues 2.0 Credits
This course explores the roles and responsibilities of those involved in pre-hospital care. This course includes an overview of legal issues and the physical and mental well-being of care providers. Refines and solidifies Emergency Medical Technician-Basic pre-hospital skills.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 107 Disease Process II 3.0 Credits
Exploration of the disease processes involved with the nervous, blood, cardiac, respiratory, gastrointestinal, and endocrine systems. A foundation is formed to begin integrating assessment finding and disease processes to enhance the understanding of disease presentations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 104 [Min Grade: D]

EMS 110 EMT Field Practicum 1.0 Credit
This is the Basic Life Support (BLS) field preceptorship required for the development of skill proficiency and familiarity with the pre-hospital environment. Requires students to perform in the pre-hospital BLS environment and allows them to practice and refine patient assessments, clinical skills, and begin to acclimate to the role of the EMT.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 111 Introduction to Pharmacology 3.0 Credits
This course will provide an overview of pharmacology principles including sources of drugs, regulation of drugs, pharmacokinetics and pharmacodynamics. Classifications of drugs will be introduced.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 112 Pharmacology I 3.0 Credits
This course will explore the use of cardiovascular, respiratory, renal, endocrine and anesthetic drug classifications in the pre-hospital setting. It will become the foundation needed to determine clinical pharmacological interventions for patients.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 110 [Min Grade: D]

EMS 114 Emergency Medical Services Operations 2.0 Credits
This course continues the paramedic coursework through analysis of patient-care situations and the provision of appropriate interventions. It covers ambulance operations, crime scene awareness, Medical Incident Command, Rescue awareness, radio communications.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 116 Electrocardiogram (EKG) Interpretation 1.0 Credit
This course is designed to develop the foundational knowledge of cardiac electrophysiology. Identification of wave forms, timing, and basic cardiac arrhythmias including sinus, atrial, AV junctional, ventricular, and hear blocks are presented.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 120 Pre-hospital Techniques 3.0 Credits
In a simulation lab and clinical environment the student will learn and practice the techniques of advanced airway management and ventilation, including endotracheal intubation, intravenous therapy, and obtaining blood samples. The student will be introduced to the techniques of emergency airway skills needle cricothyrotomy, surgical cricothyroidotomy needle chest decompression.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 103 [Min Grade: D]

EMS 122 Special Topics in Emergency Medical Services I 3.0 Credits
This course will cover special topics of interest to students in the EMS major.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for NaN credits

EMS 125 Field Practicum I 4.0 Credits
This course is the first of two Advanced Life Support (ALS) preceptorships required by the program. It acclimates students to the pre-hospital ALS environment and allows them to practice and refine patient assessments, perform clinical skills, and begin to feel comfortable in the role of the paramedic.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 206 [Min Grade: D]

EMS 201 Clinical Concepts I 7.0 Credits
Continues the required national standard paramedic coursework through analysis of patient-care presentations and the provision of appropriate interventions. This course covers behavioral, infectious disease, respiratory, cardiac system topics.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 112 [Min Grade: D] and EMS 120 [Min Grade: D]

EMS 202 Medical Intervention I 3.0 Credits
Application of material and techniques form Clinical Concepts I. Provides supervised practice in the laboratory setting and in required clinical units. Lab hours 4, clinical hours 12 hours per week.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 112 [Min Grade: D] and EMS 120 [Min Grade: D]

EMS 203 Clinical Concepts II 6.0 Credits
This course continues paramedic clinical coursework through analysis of patient-care situations and the provision of appropriate interventions. This course covers neurology, endocrine, allergy and anaphylaxis, GI/GU, toxicology, hematology, OBGYN, pediatrics, neonate and geriatric system topics.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 201 [Min Grade: D]

EMS 204 Medical Intervention II 3.0 Credits
Application of material and techniques from Clinical Concepts I. Provides supervised practice in the laboratory setting and in required clinical units. Lab hours 4, clinical hours 12 per week.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 202 [Min Grade: D]

EMS 205 Instructional Issues 3.0 Credits
This course explores and offers in-depth analysis of relevant theories relating to contemporary application of instructional issues, systems and design. The purpose is to provide theoretical, experiential and critical perspectives on instructional issues and design as it is applied in a number of educational venues.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 206 Clinical Concepts III 6.0 Credits
This course continues paramedic clinical coursework through analysis of patient-care situations and the provision of appropriate interventions. This course covers trauma systems, hazmat and WMD.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 203 [Min Grade: D]

EMS 207 Trauma Interventions 3.0 Credits
Application of material and techniques from Clinical Concepts III. Provides supervised practice in the laboratory setting and in required clinical units. Lab hours 4, clinical hours 6/week.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 204 [Min Grade: D]

EMS 210 Management I 3.0 Credits
Examination of the administrative functions related to the conduct of Emergency Medical Services and Public Safety Administration, review of pertinent literature and analysis of task and function relating to the major components of national delivery models.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 226 Field Practicum II 7.0 Credits
This course is the second of the field rotations. It allows students to demonstrate all the skills learned in the clinical courses and prepare them to work as an entry level paramedic. Successful completion required for eligibility to sit for the state examination.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 125 [Min Grade: D]

EMS 230 Special Topics in Emergency Medical Services II 3.0 Credits
This course will cover special topics of interest to students in the EMS major.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

EMS 301 Management II 4.0 Credits
Theory and practice of EMS and public safety operational management are presented along with aspects of system problem identification and problem resolution. Interaction with local, state and federal agencies and services integrated through a problem-based set of scenarios.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 302 Clinical Capstone 1.0 Credit
This course provides the final integration and application of all principles and techniques learned in the clinical program. Clinical decision making and synthesis of pathophysiology, pharmacology, physical examination, and interventional techniques are evaluated. Preparation for the national certification examination is included.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 125 [Min Grade: D]

EMS 305 Design of Instructional Materials 3.0 Credits
This course will provide for an examination of instructional materials and their use in instructional programs. The student will create instructional materials for topics of their choosing. Discussion of current media and instructional equipment for effectiveness, specification and purchasing is included.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 306 Concepts of Injury 3.0 Credits
This course is an introduction to epidemiology in the public sector focusing on the investigation of epidemiological patterns of injuries relating to the need for emergency medical services. It includes discussions of strategies for prevention of injuries.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 307 Critical Incident Stress Management 3.0 Credits
This course explores the theories of cause, effect, and mitigation of stress in public safety personnel. The student examines personal, administrative, and employee concerns, including critical-incident and stress-management services and resources. A further understanding of stress and stress management is gained through self research.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 320 Accident Investigation 3.0 Credits
This course presents an analysis of proper investigative techniques employed for determining the causes and the reporting of accidents, injuries and illnesses.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 325 Industrial Safety 3.0 Credits
This course examines and explores causes of workplace injuries and fatalities, and their human and economic cost. Included is an investigation of prevention strategies and effectiveness as well as a review of applicable legislation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 330 Special Topics in Emergency Medical Services III 3.0 Credits
This course will cover special topics of interest to students in the EMS major.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

EMS 340 Hazardous Materials Response Implementation 3.0 Credits
This course will emphasize a systematic process of actions taken in the first five minutes/hours/days and months of an incident involving chemicals. An emphasis is made on safe and appropriate response to hazardous materials incidents according to current federal Occupational Safety and Health standards.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 345 Response to Terrorism 3.0 Credits
This course focuses on terrorism and its increased impact on individuals, communities, and nations. Using the framework of understanding of the history and origins of domestic and international terrorism, current methodologies for terrorism responses will be explored.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 346 Introduction to Emergency Medical Services and Public Safety Quality 3.0 Credits
This course will survey the basic concepts of quality management in emergency medical services and public safety. After completion, the student will be able to participate actively in quality management as part of the multi-disciplinary public safety team.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 360 Local, State and Federal Legislation 3.0 Credits
This course of study encompasses a general overview of legislation, legal issues, and legal process which a public safety or emergency professional may often encounter in the management of various components of service delivery systems. The issues and laws discussed will be applicable to many of life?s activities as well.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 368 Practical Safety Services 3.0 Credits
This course is designed to provide a broad overview of the integration of Emergency Services administrator or practitioner within safety services areas. Targeted areas include: incident command, fire and police service safety applications, field management, infectious diseases, terrorism, manmade and natural incidents are the subjects that will be covered in the context of safety services.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 372 Incident Command for Emergency Medical Services 3.0 Credits
This course is designed to meet the needs of EMS practitioners, emergency responders and managers with the responsibilities to use, deploy, implement, and /or function within an Incident Command System.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 380 Advanced Physical Examination 3.0 Credits
This course builds on information covered in EMS 103 Physical Examination. Further refinement and integration of physical examination skills and history taking techniques are the focus. A review of all body systems provides a holistic evaluation of a patient. Lecture hours 2, lab hours 2.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 103 [Min Grade: D]

EMS 382 Pharmacology II 3.0 Credits
This course will explore the use of medications in critical setting and the classifications of medications used in the pre-hospital setting, specifically those used in critical care transport situation. This course will also cover medications and alternative treatments that patients may be on at home.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 390 Public Safety Data Management 3.0 Credits
This course explores the multitude of computer software packages and access to information devises that are applicable to the EMS/Public safety arena. Presented are the use and ability to manipulate data to enhance management and operations decision making.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 401 Independent Study in Emergency Medical Services and Public Safety 3.0 Credits
This course will cover special topics of interest to students in the EMS major. It allows independent exploration of a specific topic area where the student will perform an in-depth review or project.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 2 times for 6 credits

EMS 403 Instruments and Metrics for Emergency Medical Services and Public Safety Quality 3.0 Credits
This course will cover the concepts of instruments and metrics of quality management and Six Sigma in EMS and public safety. After completion of this course, the student will be able to participate actively in advanced quality management as part of the multi-disciplinary public safety team.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 346 [Min Grade: D]

EMS 405 Planning and Fiscal Approaches 3.0 Credits
This course offers a hands-on opportunity for an in-depth study of the types of planning and fiscal approaches common to emergency health services providers and examines functions of planning as it relates to the operation of an EMS system.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 301 [Min Grade: D]

EMS 410 Quality Management and Six Sigma Integration 4.0 Credits
This course will integrate the student?s learning obtained in Intro to Qualitology and Instruments and Measures of Qualitology through application to real world situations. After completion, the student will be able to lead and participate actively in advanced quality management as part of the multi-disciplinary public safety team.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 403 [Min Grade: D]

EMS 415 Funding and Publishing in Emergency Medical Services 3.0 Credits
This course allows for further exploration of grant sources and grant writing, writing for publication, as well as an exploration of currently relevant topics involving public safety and EMS.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 420 Medical Care Response to Weapons of Mass Destruction 3.0 Credits
Medical response to weapons of mass destruction events requires an emergency responder be prepared to respond. This program will emphasize an approaches and management guidelines to events involving the release of biological, nuclear, incendiary, chemical and explosive agents.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 425 Risk Management in Health Care 3.0 Credits
This course covers the identification, reduction and management of risk in the comprehensive health care setting, regulatory compliance, reporting, and hazard vulnerability analysis. Development of a risk management plan.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 430 Leadership and Influence in Emergency Services 3.0 Credits
Emergency Services require complex leadership styles and methods due to the unique nature of police, fire, and EMS services, personnel, and customers. These leadership methods have many similarities with industry, but divergence occurs during critical incidents. Current trends and high profile leaders will be profiled.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 435 Special Topics in Emergency Medical Services IV 3.0 Credits
This course will cover special topics of interest to students in the EMS major.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

EMS 440 Research 3.0 Credits
This course explores and covers the areas of research and experimental design, scientific writing and presentation of scientific materials. This serves as the foundation for understanding the principles of research through the development of a research proposal, assisting personnel to take responsibility for contributing to the research conducted in their field.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 445 Organizing Community Response in Disasters 3.0 Credits
This course will cover community preparation, planning, education, and integration of community response agencies into mass events.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 455 Internship 15.0 Credits
College/Department: College of Nursing Health Professions
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.

EMS 456 Internship I 8.0 Credits
Offers application level assignment in a work setting related to administrative or educational practice of emergency medical services or public safety. Requires completion of an actual work assignment under the direction of a site preceptor and a faculty advisor.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 457 Internship II 7.0 Credits
Offers application level assignment in a work setting related to administrative or educational practice of emergency medical services or public safety. Requires completion of an actual work assignment under the direction of a site preceptor and a faculty advisor.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

Food Science

Courses

FDSC 154 Foods: Composition, Interaction and Formulation 4.0 Credits
Covers the physical and chemical characteristics of food components including sugars, starches, proteins, and fats and their changes during preparation and cooking. Also considers the interaction of components in foods such as eggs, dairy products, meats, and cereals and the formulation of baked goods. Methods of sensory evaluation are included.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

FDSC 270 Microbial Food Safety and Sanitation 4.0 Credits
Covers topics including types, sources and growth of microorganisms in food; food spoilage; foodborne infections and intoxications and their prevention; chemical contamination; pest control and sanitation standards in foodservice operations; and FDA and local regulations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

FDSC 350 Experimental Foods: Product Development 3.0 Credits
Covers the ingredients used in the development of new food products and the process of developing new food products. Objective and subjective testing procedures are demonstrated in laboratory. Students propose and carry out a food development project.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FDSC 154 [Min Grade: D] or NFS 154 [Min Grade: D] or NFS 152 [Min Grade: D] or BIO 311 [Min Grade: D]

FDSC 450 Food Microbiology 3.0 Credits
Covers application of microbiological principles to food safety, production, nutrient quality, and spoilage.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FDSC 270 [Min Grade: D] or NFS 270 [Min Grade: D] or BIO 21 [Min Grade: D]

FDSC 451 Food Microbiology Laboratory 2.0 Credits
Teaches laboratory techniques of food microbiology with emphasis on food production and quality assurance procedures. Some or all pre-requisites may be taken as either a pre-requisite or co-requisite. Please see the department for more information.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FDSC 450 [Min Grade: D], NFS 450 [Min Grade: D] (Can be taken Concurrently)

FDSC 454 Microbiology & Chemistry of Food Safety 3.0 Credits
Provides advanced study of chemicals of food safety significance, with emphasis on the effects of compounds normal to food. Includes regulations and controls.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: ENVR 436 [Min Grade: D] or BIO 203 [Min Grade: D]

FDSC 456 Food Preservation Processes 3.0 Credits
Covers fundamentals of food processing and preservation, including techniques and methods employed to extend the useful life of food products, and the significance of changes in the composition of foods due to the processing, enzymatic activity, microbial action and chemical change.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: NFS 215 [Min Grade: D] or NFS 400 [Min Grade: D] or BIO 311 [Min Grade: D]

FDSC 458 Nutritional Impact of Food Processing Methods 3.0 Credits
Covers the effect of processing on foods, emphasizing nutritional and chemical aspects. Includes topics such as synthetic foods, food additives, current food processing methods, nutritional policy, consumer dietary patterns, and food product trends.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: (FDSC 154 [Min Grade: D] and NFS 215 [Min Grade: D]) or (NFS 154 [Min Grade: D] and NFS 400 [Min Grade: D]) or (NFS 154 [Min Grade: D] and NFS 215 [Min Grade: D])

FDSC 460 Food Chemistry 3.0 Credits
Covers physicochemical properties of food constituents, including the application of underlying scientific principles to the processing of foods and biological materials.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: NFS 215 [Min Grade: D] or NFS 400 [Min Grade: D] or BIO 311 [Min Grade: D]

FDSC 461 Food Analysis 3.0 Credits
Provides analysis of foods and biological samples, with emphasis on their chemical composition and physicochemical properties.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: NFS 216 [Min Grade: D] or NFS 404 [Min Grade: D] or BIO 306 [Min Grade: D]

FDSC 468 Functional Foods 3.0 Credits
This course covers a range of functional foods and food components, their health conferring benefits, mechanisms of actions, and possible applications in the food industry.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FDSC 154 [Min Grade: D] and NFS 215 [Min Grade: D]

FDSC 480 Special Topics in Food Science 1.0-12.0 Credit
Covers special topics of interest in food science. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

FDSC 490 Seminar in Food Science 1.0 Credit
Current topics in food science will be studies with presentations by invited speakers and students. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 3 times for 3 credits
Restrictions: Cannot enroll if classification is Freshman or Junior or Pre-Junior or Sophomore

FDSC 491 Senior Project I 2.0 Credits
Students will identify a research problem, synthesize a literature review of the problem and then develop a research proposal to be presented both in written form and defended orally.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FDSC 350 [Min Grade: D]

FDSC 492 Senior Project II 2.0 Credits
Students will carry out the research protocol developed in FDSC 491. The data generated will be analyzed to answer the research questions posed in FDSC 491. The final results will be presented both orally and in written form.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FDSC 491 [Min Grade: D]

FDSC 498 Independent Study in Food Science 1.0-12.0 Credit
Provides individual study or research in food science under faculty supervision. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

General Studies

Courses

GSTD 100 Strategies for Academic Success 1.0 Credit
This course explores the learning process to assist students in achieving academic success. Self-assessments, personal reflection, and relevant electronic resources are used to foster students' development as self-directed learners. Topics include: study skills, learning strategies, personal development, academic planning and tracking, visioning, and goal setting. The goal of this course is to help improve students' efficacy in the areas of academic self-management, self-direction, and resource utilization.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

GSTD 111 Learning Skills & Strategies 3.0 Credits
This course prepares traditional undergraduate students for the expectations and challenges of college life.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Freshman.

GSTD 150 Introduction to World Religions 3.0 Credits
This course introduces significant Eastern and Western religions. Hinduism, Buddhism, Confucianism, Daoism, Judaism, Christianity and Islam are examined. Each religion is studied as a system of thought that constructs a worldview considering its origin, its sacred texts, the human condition, and the future eternity.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

GSTD 180 Special Topics in General Studies 1.0-4.0 Credit
Covers lower-level special topics of interest in General Studies. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 11 times for 12 credits

GSTD 200 Lifelong Learning Theory & Practice 3.0 Credits
Introduces theories and practical skills necessary for successful learning in a variety of environments. Covers self-efficacy development, autonomous learning, critical thinking, critical reading, learning to learn, effective researching and writing, goal setting theories, and practical strategies necessary to support learning in university, career, and personal contexts.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

GSTD 210 Fact & Fiction in Film 3.0 Credits
This course focuses on the creative process of film storytelling using documented historical fact and artistic license of fiction. Factual material, reasonable opinions, and scurrilous rumors about well-documented historical events will be analyzed. Films about these events will be viewed, critiqued and analyzed.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

GSTD 380 Advanced Special Topics in General Studies 1.0-4.0 Credit
Covers upper-level special topics of interest in General Studies. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 11 times for 12 credits

GSTD 399 Independent Study in General Studies 0.5-12.0 Credits
Provides individual study or research in General Studies under faculty supervision. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit
Restrictions: Can enroll if major is GSTD.

GSTD 400 Practicum 3.0 Credits
Combines classroom theory with practical application at the student's worksite. Requires students to demonstrate the ability to apply classroom learning to situations benefiting a corporation. Includes an orientation, proposals, reports on works-in-progress, and a portfolio.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is GSTD and classification is Senior.

GSTD 491 Senior Project in General Studies 3.0 Credits
The senior project covers planning and execution of a capstone project that integrates the academic and practical knowledge acquired in the student's course of study. Students will complete a research proposal, a research project or an integrative portfolio.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is GSTD and classification is Senior.

Hotel & Restaurant Management

Courses

HRM 110 Introduction to the Hospitality Industry 3.0 Credits
Presents the opportunities available in the hospitality industry, concentrating on restaurants, hotels, and institutional food services and comparing their business formats and services to the public. Explores careers in hospitality and the need for such enterprises in modern society.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is CULA or major is HOSP or major is HRM.

HRM 120 Principles of Food-Service Management 3.0 Credits
Covers techniques of contemporary food and beverage management and their application in the professional food-service environment. Emphasizes budget preparation, food and labor cost controls, menu planning and pricing, and quantitative management. Requires simulated restaurant project.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 110 [Min Grade: D]

HRM 130 Tourism I 3.0 Credits
The course reviews the basic concepts and techniques in the field of tourism and tourism management. It is an introduction to the tourism industry, cost and benefits of tourism, effects on the host communities, impacts on travelers and host communities, and promotion of tourism.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

HRM 135 Tourism II 3.0 Credits
This is the second part of introduction to tourism & travel at the freshman level. The course reviews the basic concepts in the economy of tourism, ecological constraints to tourism development, research and marketing techniques, main macroeconomic magnitudes of tourism, main outgoing and incoming destinations and the future of tourism and travel. Some or all pre-requisites may be taken as either a pre-requisite or co-requisite. Please see the department for more information.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 130 [Min Grade: D] (Can be taken Concurrently)

HRM 150 Customer Service 3.0 Credits
This foundation course presents students with the types of services that create an ongoing bond between a company and its customers. Also, through some proven techniques, analyze relations between service delivery, pricing, branding and image creation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Freshman.

HRM 160 Laws of the Hospitality Industry 3.0 Credits
Examines legal subjects relative to the foodservice and lodging industries including government regulations and foodservice operators, foodservice contracts, liability, patron civil rights, franchising, and bankruptcy and reorganization. Includes analysis of case studies and relevant court decisions.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 110 [Min Grade: D]

HRM 200 Software for Hospitality Industry 3.0 Credits
This is an introductory course to the various software applications used by managers in the Hospitality and Tourism industries.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is CULA or major is HOSP or major is HRM.

HRM 215 Commercial Food Production 4.0 Credits
Applies culinary principles to the production of fine good in quantity. Emphasizes menu planning and management of production, food design, quality, and service. Requires service to the public. Weekly production reports are required.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CULA 115 [Min Grade: D] or CULA 120 [Min Grade: D]

HRM 220 Purchasing for the Hospitality Industry 3.0 Credits
Covers principles and techniques of quantity-foods purchasing and hospitality furnishings. Emphasizes channels of distribution, determination of specifications, mechanics of buying, and the purchasing function in food-service facilities.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: HRM 110 [Min Grade: D] or HRM 120 [Min Grade: D]

HRM 225 Equipment Design and Layout 3.0 Credits
Covers principles of selection, operation, and maintenance of food-service equipment. Emphasizes requirements for various hospitality facilities and the supporting design, construction, and renovation of such.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: HRM 120 [Min Grade: D]

HRM 250 Contract Foodservice Management 3.0 Credits
Introduces students to the dynamics of a commercial foodservice operation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: HRM 120 [Min Grade: D]

HRM 310 Hospitality Accounting Systems 3.0 Credits
Studies accounting systems for hotels, restaurants, and institutions, including analysis of business transaction flow and the preparation and interpretation of financial statements. Includes consideration of the Uniform System of Accounts for Restaurants, computer-assisted processing, reports generation, and data analysis.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: HRM 110 [Min Grade: D]

HRM 315 Continental, Ethnic, and Regional Cuisine 3.0 Credits
Must be completed prior to six-month food service co-op. Surveys the state of the art in international fine food, focusing on its roots in various ethnic traditions. Includes food preparation and tasting as an integral part of the course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: CULA 115 [Min Grade: D] or CULA 120 [Min Grade: D]

HRM 320 Hospitality Management Information Systems 3.0 Credits
Studies computer applications in the hospitality industry, including inventory control, restaurant systems, bar and beverage systems, and telephone and security-management systems. Emphasizes guest tracking, electronic cash registers, and point-of-sale devices.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Pre-Junior or Sophomore
Prerequisites: HRM 110 [Min Grade: D]

HRM 325 Hotel Rooms Division Management 3.0 Credits
Studies front-office management and control, including pricing and associated structures, occupancy rates and patterns, audits and income, reservations, and special functions. Emphasizes service and sales as well as guest needs.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: HRM 110 [Min Grade: D]

HRM 326 Hotel Rooms Division Management II 3.0 Credits
Studies front-office management and control, including pricing and associated structures, occupancy rates and patterns, audits and income, and special functions.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is HOSP or major is HRM.
Cannot enroll if classification is Freshman or Sophomore
Prerequisites: HRM 325 [Min Grade: D]

HRM 330 Hotel and Restaurant Marketing 3.0 Credits
Covers techniques and principles of marketing services in the hospitality industry, with emphasis on the marketing plan, advertising and promotion, sales, and public relations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: HRM 110 [Min Grade: D]

HRM 335 Beverage Management 3.0 Credits
Provides a comprehensive study of wines, spirits, and beers and the role they play in the success of the hospitality industry. Covers topics including history, marketing and sales, channels of distribution, manufacturing processes, mixology, and service and control systems, with concentration in American and European wines and international beers. Gears application to computerized and accounting system. tips certification.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 120 [Min Grade: D]

HRM 340 Catering Management 3.0 Credits
Examines techniques of catering management and their application in the professional food-service environment, with emphasis on menu planning, controls, and budget preparation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.
Prerequisites: HRM 120 [Min Grade: D]

HRM 345 Convention Management 3.0 Credits
Provides an in-depth study of convention, corporate, and group segments
of the hospitality industry.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: HRM 110 [Min Grade: D]

HRM 347 Sport Tourism 3.0 Credits
Students will investigate international sport tourism organizations and their
services, and analyze issues including: Sport tourism facility and event
financing, sport tourism impacts, and globalization and sport tourism.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: HRM 130 [Min Grade: D]

HRM 350 Cost Controls in Hospitality 3.0 Credits
Course deals with theory and technique basic to managing costs and
maximizing profits in relevant area within restaurant, hotel, and tourism
segments of hospitality.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 110 [Min Grade: D]

HRM 355 Resort Management 3.0 Credits
This course studies the unique aspects of managing a full service
destination resort in contrast to a traditional hotel operation. Students will
study varied aspects of resort management including guest profiles, resort
operations, report marketing and program development among other
topics.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 325 [Min Grade: D]

HRM 360 Hospitality Industry Public Relations 3.0 Credits
This course provides students with an understanding of the process and
effective use of public relations as applied to the hospitality industry with
a focus on restaurants. A variety of marketing communication media
including advertising, sales promotions, and development of a press kit
and press releases will be examined. During the course students will
develop a public relations campaign for a specific restaurant.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 110 [Min Grade: D]

HRM 365 Heritage Tourism 3.0 Credits
Using the historic city of Philadelphia and its main background, this course
reviews the significance and role of culture and heritage related tourist
attractions. Students deal with the main issues in current research on
heritage tourism while having hands-on exposure to the managements
and marketing of some of Philadelphia's landmarks.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 130 [Min Grade: D]

HRM 370 Gaming and Casino Management I 3.0 Credits
Examines theories pertinent to casino games including the organizational
management, staffing, regulations, internal control, and reporting
requirements of gaming operations.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 110 [Min Grade: D]

HRM 371 Gaming and Casino Management II 3.0 Credits
This course studies advanced casino management topics such as game
statistics, casino marketing and profitability. Students will study the
probability and mathematics of casino games and review in depth casino
marketing concepts and techniques that are unique to gaming. Race and
sports book operations will also be studied.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 370 [Min Grade: D]

HRM 375 Security and Loss Prevention 3.0 Credits
This course studies the unique aspects of managing security in the
hospitality industry. Students will study various aspects of security
and loss prevention including security equipment, guest concerns,
departmental responsibilities, protection of fund, emergency management,
risk management and insurance. This course will include a site visit and
guest lectures.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 370 [Min Grade: D]

HRM 385 Tourism Guest Lecture Series 3.0 Credits
This course provides contact with prominent industry professionals who
visit class weekly to convey their experiences and facilitate discussions.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit

HRM 395 Economics of Tourism 3.0 Credits
This course introduces participants to economic and government policy
issues that impact the tourism industry. The course provides a strategic
framework for understanding the macroeconomic and policy environment
that is shaped by multilateral institutions, government and the tourism
industry.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit

HRM 399 Independent Study in Hotel and Restaurant Management 12.0 Credits
Provides individualized study of a specialized area of hotel and restaurant management. May be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit
Restrictions: Can enroll if major is CULA or major is HOSP or major is HRM.
Cannot enroll if classification is Freshman or Pre-Junior or Sophomore

HRM 405 Current Issues in Travel and Tourism 3.0 Credits
Covers current issues in the management of travel and tourism services. Environmental trends, planning and development, policy formation, social and economic impact and marketing of travel and tourism are included.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 135 [Min Grade: D] and HRM 365 [Min Grade: D]

HRM 415 Fine Dining and Services 4.0 Credits
HRM senior capstone hospitality class. Requires students to design, produce, and market a weekly dinner to the public. With the participation of guest chefs from some of the area's finest hotels and restaurants, students produce food comparable to that served in the finest restaurants in the city.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 215 [Min Grade: D]

HRM 420 Hospitality Design 3.0 Credits
Provides a historical, spatial, and aesthetic study of the great hotels and restaurants of the late 19th and the 20th century. Emphasizes the architectural quality of the spaces and the functions they imply in services to the users, management, and client. Field trip.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: HRM 325 [Min Grade: D]

HRM 425 Hospitality Industry Administration 3.0 Credits
This course provides an in-depth study of various managerial strategies in hospitality. The course will examine the application of the tools of strategic management in hospitality settings and introduce models, methods, and techniques which can be used to identify strategic issues and generate future-oriented action plans to inform tactics that are designed to implement change.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is CULA or major is HOSP or major is HRM and classification is Junior or Senior.
Prerequisites: HRM 355 [Min Grade: D]

HRM 435 Wine and Spirits 3.0 Credits
Provides a detailed study of the classification, production, identification, and service of alcoholic beverages, with a major emphasis on wines. Uses a systematic approach to tasting and evaluation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.

HRM 450 Hospitality Leadership Seminar 3.0 Credits
This course integrates material covered in multiple disciplines related to the hospitality industry. Examines the development of innovative management in all segments of the industry. Identification and development of a personal leadership philosophy and style.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is CULA or major is HOSP or major is HRM and classification is Senior.

HRM 455 Hospitality Human Resources Management 3.0 Credits
Analyzes the role of the human resources division in the hospitality industry. Examines the process of recruitment, selection, and performance appraisals of the hospitality workforce.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is CULA or major is HOSP or major is HRM and classification is Junior or Senior.

HRM 465 [WI] Special Topics in Hotel and Restaurant Management 12.0 Credits
Provides study in hotel and restaurant management on a special topic or on an experimental basis. May be repeated for credit. This is a writing intensive course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit

HRM 470 Gaming Legislation, Policy and Law 3.0 Credits
This course provides an overview of federal and state laws governing legalized gaming in the United States with emphasis on gaming in Pennsylvania. The powers of the state regulatory agencies will be examined with discussion concerning the underlying reasons used in regulating to ensure the integrity of the gaming industry.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 370 [Min Grade: D]

HRM 472 Gaming Information Systems 3.0 Credits
This course studies computer information systems that are unique to the Gaming Industry. Students will study each system from a business perspective learning function and process. They will perform case studies, view produce demonstration and observe new technology trends that impact casino operations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 371 [Min Grade: D]

HRM 475 Current Issues in Gaming 3.0 Credits
Current issues in the management of casino and gaming operations. Environmental trends, planning and development, policy formulation, social and economic impact and marketing of casinos and gaming operations are potential topics for discussion.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 371 [Min Grade: D]

Homeland Security Management

Courses

HSM 380 Special Topics in Homeland Security Management 0.5-12.0 Credits
Special topics of interest in homeland security management. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

Industrial Engineering

Courses

INDE 240 Technology Economics 3.0 Credits
Techniques for project decisions: benefit cost, present worth and annual worth analysis, rate of return, minimum attractive rate of return, capital budgeting, risk analysis, and depreciation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

INDE 300 Quality Management 3.0 Credits
This is a course about managing quality. It will introduce quality concepts necessary for an organization to remain competitive in today's economy. Discussion will focus on the tools and techniques necessary to manage quality processes within an organization.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.
Prerequisites: MATH 122 [Min Grade: D]

INDE 301 Health Systems Introduction 3.0 Credits
Emphasis on the application of industrial engineering methodologies to analyze and solve health systems challenges. Critical evaluation of the utility of key industrial engineering concepts and tools for assessing and modeling health care problems and challenges in health care delivery.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Pre-Junior or Senior.

INDE 340 Introduction to Decision Analysis 3.0 Credits
Overview of modeling techniques and methods used in decision analysis, including multiattribute utility models, decision trees, and Bayesian models. Psychological components of decision making are discussed. Elicitation techniques for model building are emphasized. Practical applications through real world model building are described and conducted.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Pre-Junior or Senior.
Prerequisites: STAT 262 [Min Grade: D] and MATH 122 [Min Grade: D]

INDE 350 Industrial Engineering Simulation 3.0 Credits
Covers techniques and application of computer simulation of existing or proposed real world systems and processes. Models of such systems or processes are often complex, precluding traditional analytical techniques. Students will build simulation models and do simulations with commercial simulation software, analyze and interpret the results, and to plan simulation studies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.
Prerequisites: STAT 261 [Min Grade: D]

INDE 351 Intelligent Manufacturing Systems 3.0 Credits
Design and simulation of intelligent manufacturing systems with special emphasis on sensor-integrated robotic assembly tasks. Fundamentals of artificial intelligence, application of robotics, sensors, vision, network integration, and flexible assembly work cells. Industry based case studies and working examples.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

INDE 361 Quality Control 3.0 Credits
Covers theory and methods for design and analysis of quality control systems, including solutions to problems of product specifications, process control, acceptance inspection, and other means of quality assurance. Fall. Alternate years.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: STAT 261 [Min Grade: D]

INDE 362 Operations Research for Engineering I 3.0 Credits
Introduces systems sciences, including linear programming and other linear optimization methods, simplex method, primal-dual solution methods, the transportation method, pert-cpm and other network techniques, and dynamic programming. Requires development and presentation of simulation term-project proposals. Winter.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: MATH 261 [Min Grade: D]

INDE 363 Operations Research for Engineering II 3.0 Credits
Covers single and multi-episode probabilistic inventory models, queuing theory, single and multichannel systems, production scheduling and other assignment methods, Markov processes, Poisson processes and other stochastic systems, and replacement theory. Includes selected case studies. Applications: queuing, reliability, inventory, and finance. Requires development and presentation of term-project simulation models.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: INDE 362 [Min Grade: D]

INDE 364 Special Topics in Industrial Engineering 0.5-12.0 Credits
Provides special courses offered based on student or faculty interests. All terms. Variable.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit
Restrictions: Cannot enroll if classification is Freshman

INDE 365 Systems Analysis Methods I 3.0 Credits
Provides an introduction to the concepts and techniques used in analysis of complex systems. Covers the origins and structure of modern systems and the step-wise development of complex systems and the organizations of system development projects. Systems Development Lifecycle (SDLC) from concept development, engineering development, post-development.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.

INDE 366 Systems Analysis Methods II 3.0 Credits
OO (Object Oriented) Methodology and UML (Universal Modeling Language) modeling, within the SDLC (System Development Life Cycle) framework, are covered in this class. There are two components to OO systems Analysis and Design; The ORM (Object- Relationship Model) is a way to describe or represent objects, classes of objects, relationships between objects and classes, and memberships of the real world. The OBM (Object-Behavior Model) is a means of describing the behavior of objects.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: INDE 365 [Min Grade: D]

INDE 367 Data Processing 3.0 Credits
Covers the information ?based skills necessary for Industrial Engineers. It is a project based course. Particular attention is paid to real world database problems. This course explains data acquisition and database systems. The course focuses on designing databases for given problems. Students will use different database techniques. Introduction to SQL.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

INDE 370 Industrial Project Management 3.0 Credits
Provides an overview of the roles, responsibilities, and management methods of technology in project management. Emphasizes scheduling of various projects, monitoring, control and learning from projects. Three interrelated objectives of budget, schedule, and specifications are also introduced. The course assumes no prior knowledge in management techniques and is intended to teach students how to develop approaches and styles of management for service and manufacturing industry projects.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

INDE 375 Quality Improvement by Experimental Design 4.0 Credits
Methods for Design and analyzing industrial experiments. Blocking; randomization; multiple regression; factorial and fractional experiments; response surface methodology; Taguchi's robust design; split plot experimentation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: STAT 261 [Min Grade: D] or STAT 201 [Min Grade: D]

INDE 399 Independent Study in Industrial Engineering 0.5-12.0 Credits
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit

INDE 400 Designs of Program Evaluation Systems 3.0 Credits
Focus on evaluation broadly conceived to include evaluation of programs as well as within business organizations. The context of the class is evaluation in the health care sector, particularly long term care. Emphasis placed on the development of valid and practical models, and the identification and measurement of short-term and long-term intervention outcomes. Covers principles of research design, evaluation, and measurement issues.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.
Prerequisites: STAT 261 [Min Grade: D] or STAT 201 [Min Grade: D] or STAT 211 [Min Grade: D]

INDE 461 Methods of Engineering and Measurement 3.0 Credits
Covers fundamentals for developing methods improvements and measurement of these improvements through time study and standard data. Includes analysis and design of man-and-machine work systems and application to typical problems in work measurements. Fall. Alternate years.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: POM 311 [Min Grade: D]

INDE 462 Industrial Plant Design 3.0 Credits
Covers design of a product-oriented facility, including process design, materials handling, work area design, storage and warehousing, and service-area planning. Includes complete final plant layout and presentation of term project. Winter. Alternate years.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: INDE 461 [Min Grade: D]

INDE 463 Production Management 3.0 Credits
Covers production planning and control systems, including materials, equipment, and manpower requirements; manufacturing planning and control, including production scheduling, inventory, and quality control; analytical methods for inventory control; and production planning and methods. Spring. Alternate years.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: INDE 462 [Min Grade: D]

INDE 467 Decision Processes 3.0 Credits
Covers advanced methods of analyzing decision-making under uncertainty, including expected value concepts and criteria, decision tree analysis, preference theory concepts, probabilistic risk assessment, risk analysis using simulation techniques, and decisions to purchase imperfect information. Uses case studies relating to facility siting, resource exploration and development, and new technology deployment and market penetration. Fall. Alternate years.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: MATH 261 [Min Grade: D]

INDE 468 Analysis of Experimental Data 3.0 Credits
Covers use of linear and non-linear models to identify cause and estimate effect. Includes randomization and blocking with paired comparisons, significance testing and confidence intervals, factorial designs, least squares regression analysis, response surface methods, analysis of variance, and Box-Jenkins and other time series forecasting methods. Fall.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: MATH 261 [Min Grade: D]

INDE 469 Organization Planning and Control 3.0 Credits
Analyzes human, capital, and physical resource planning, allocation, and control, including human factors and man-machine interface, technological innovation, concepts of behavioral science, and structure and dynamics of industrial organizations. Uses a case study approach to situational analysis. Spring. Alternate years.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: POM E311 [Min Grade: D] and POM 461 [Min Grade: D]

INDE 470 Engineering Quality Methods 3.0 Credits
Methods for controlling and improving industrial processes. Control charts; process capability; multifactor experiments; screening experiments; robust designs. Understanding of the continuous quality improvement tied to a real life project improvement.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

INDE 490 Senior Project Design 4.0 Credits
Design methodology and engineering principles applied to open-ended design problems with inherent breadth and innovation. This course integrates the knowledge acquired in the various courses of the undergraduate curriculum to an open-ended design effort and applies the knowledge gained to the solution of contemporary engineering problem. Requires written and oral final reports, including oral presentations by each design team at a formal design conference open to the public and conducted in the style of a professional conference. Some or all pre-requisites may be taken as either a pre-requisite or co-requisite. Please see the department for more information.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.
Prerequisites: INDE 470 [Min Grade: D] (Can be taken Concurrently)

Manufacturing Engineering Technology

Courses

MET 100 Graphical Communication 3.0 Credits
Introduces engineering graphics and fundamentals of computer aided design using the interactive software package AutoCAD on a personal computer.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Freshman.

MET 101 Manufacturing Materials 4.0 Credits
Covers tests used to characterize properties of ceramic, polymeric, and metallic materials and how material properties influence their use and manufacturing. Includes laboratory work on ASTM and industrial testing procedures.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CHEM 111 [Min Grade: D] and CHEM 113 [Min Grade: D]

MET 201 Introduction to Manufacturing Processes 3.0 Credits
Introduces manufacturing and its managed activities: research and development, production, marketing, industrial relations, and finance. Includes laboratory work in organization, staffing, and operating a model manufacturing enterprise.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Pre-Junior or Sophomore
Prerequisites: MATH 110 [Min Grade: D]

MET 202 Computer-Aided Drafting 4.0 Credits
Introduces computer design using an interactive software package on a microcomputer.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Pre-Junior or Sophomore

MET 204 Applied Quality Control 3.0 Credits
Covers variables, procedures, and processes of total quality control within the manufacturing industries. Includes instrumentation for material evaluation, attribute inspection and sampling, supervising for organizational quality improvements, and statistical control. Emphasizes directed laboratory experiences.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.
Prerequisites: STAT 201 [Min Grade: D]

MET 205 Robotics and Mechatronics 3.0 Credits
Provides a comprehensive technical introduction to robotics and automation in manufacturing. Topics include flow line production, material handling, group technology, and flexible and mechatronics-integrated manufacturing.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.
Prerequisites: PHYS 103 [Min Grade: D] and MATH 110 [Min Grade: D]

MET 209 Fluid Power 3.0 Credits
Covers the fundamentals of hydraulic systems with an emphasis on applications of Bernoulli's equation. Topics include component types and designs, hydraulic circuit analysis, and design of hydraulic systems.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 103 [Min Grade: D] and PHYS 104 [Min Grade: D]

MET 213 Applied Mechanics 4.0 Credits
Covers elements of statics and strength of materials with specific applications to manufacturing problems. Topics include the design of bolted connections, simple structures, centroids, moments of inertia and beam design.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 103 [Min Grade: D] and MET 101 [Min Grade: D] and MATH 122 [Min Grade: D]

MET 301 Advanced Design Graphics 3.0 Credits
Covers the theory and practice of industry's parts and assembly drawings with a specialization in tolerance and geometric dimensioning. Discusses industrial procedures and standards.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MET 100 [Min Grade: D]

MET 307 HazMat for Manufacturing 3.0 Credits
Covers the characteristics of hazardous substances and wastes, medical surveillance for plant personnel, toxicology, respirators and protective clothing, environmental direct reading indicators, decontamination procedures, and safe working practices.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.
Prerequisites: BIO 161 [Min Grade: D] and CHEM 162 [Min Grade: D] and CHEM 164 [Min Grade: D]

MET 308 Maritime Manufacturing 3.0 Credits
Provides an overview of the key engineering standards, laws, and regulations governing the construction of commercial vessels in the United States and methods of complying with these requirements. Focuses on the ship manufacturing process and the installation and testing of ship systems.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.

MET 310 Advanced Robotics and Mechatronics 3.0 Credits
Covers applied topics related to the integration of computer, robotics, and internet-based automation technologies in modern manufacturing.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MET 205 [Min Grade: D]

MET 316 Computer Numerical Control 3.0 Credits
Discusses theory and application of computer numerical control machines in the manufacturing environment. The laboratory focuses on the programming and operation of CNC machine tools.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MATH 110 [Min Grade: D] and MET 100 [Min Grade: D]

MET 380 Special Topic in Manufacturing 1.0-5.0 Credit
Covers selected topics that meet student interest and faculty capabilities. May be taken more than once if topics vary. Students may enroll in more than one section in a term when different topics are covered in each section.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit
Restrictions: Can enroll if classification is Senior.

MET 402 Manufacturing Design with CAD 3.0 Credits
Covers design of tools and fixtures for manufacturing, including general-purpose work holders, modular and dedicated fixtures, jigs, fixturing principles, degree of freedom, locating and clamping components, wire frame and solid modeling, and 3d to 2D conversion. Students design models of fixtures.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MET 301 [Min Grade: D]

MET 403 Three Dimensional Modeling 3.0 Credits
Covers three-dimensional design with emphasis on manufacturing and industrial standards. Includes computer-aided-manufacturing using solid, surface, and wire-frame models.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MET 100 [Min Grade: D]

MET 404 Digital Instrumentation 3.0 Credits
Covers digital technology and its application in manufacturing. Covers variables, procedures, and processes of total quality control.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EET 201 [Min Grade: D]

MET 407 Manufacturing Processes 3.0 Credits
Covers a systematic understanding of the operations, applications, and planning of manufacturing processes. Discusses quantitative evaluations of processing parameters influencing product quality.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MET 101 [Min Grade: D] and MATH 122 [Min Grade: D]

MET 408 MFG Information Management 3.0 Credits
Covers information management in manufacturing. Topics include cost estimation and control, manufacturing resources planning (MRP), just-in-time (JIT), production and inventory controls, management information systems (MIS), supply chain management (SCM), and other advanced information management technology.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MET 205 [Min Grade: D] and MATH 122 [Min Grade: D]

MET 409 Green Manufacturing 3.0 Credits
Covers life cycle analysis, pollution prevention, recycling, and lean manufacturing, including characteristics of hazardous substances and wastes, medical surveillance for plant personnel, toxicology, respirators and protective, environmental direct reading indicators, decontamination procedures and safe working practices for MFG.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CHEM 111 [Min Grade: D] and CHEM 113 [Min Grade: D]

MET 411 Advanced Computer Numerical Control 3.0 Credits
This course covers applied topics related to the integration of computer, CNC machines, and internet-based automation technologies in modern manufacturing.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MET 316 [Min Grade: D]

MET 421 [WI] Senior Design Project I 3.0 Credits
This course constitutes the first course of a three-quarter course sequence. It aims to train the students in identifying projects of relevance to the society, in planning and scheduling a solution, and in entrepreneurial activities that may result from the project. The course is also intended to cover an industrial project starting from the proposal writing and conceptual design to final steps. This course is focused on proposal writing. This is a writing intensive course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.

MET 422 Senior Design Project II 3.0 Credits
This course constitutes the second course of a three-quarter course sequence and continues MET 421. It aims to train the students in maintaining the progress of a project on schedule, including resolving any team conflicts. It also trains them how to prepare oral, and submit written progress reports. The students supply summary reports to his/her advisor. This course is focused on following standard design steps from the conceptual to final design.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MET 421 [Min Grade: D]

MET 423 [WI] Senior Design Project III 3.0 Credits
This is the final installment of a 3 course sequence. The course objective is to train students in a project from the initial conceptual design stage to the preliminary and the final design completion, how to conduct design reviews, and how to document and present findings, design concepts, and conclusion in both oral and written formats. Students are also required to build a working prototype of their final design concept and present it during final presentation of the project.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MET 422 [Min Grade: D]

Mechanical Engineering Technology

Courses

MHT 201 Kinematics 3.0 Credits
Study of four-bar linkages, sliders, and other devices using orthogonal of vectors, instantaneous centers, equivalent linkages, and effective cranks. Graphic solutions are emphasized, including an introduction to computer software.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore
Prerequisites: PHYS 103 [Min Grade: D]

MHT 205 Thermodynamics I 3.0 Credits
Students are introduced to the general theory of heat and matter; laws of thermodynamics; energy-transformation principles and availability of energy; and properties and processes for substances and ideal gases.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 103 [Min Grade: D] and MATH 122 [Min Grade: D] and MET 209 [Min Grade: D]

MHT 206 Thermodynamics II 3.0 Credits
First and second law analysis of power cycle components. Analysis of gas power cycles, including Otto & Diesel engines and Brayton cycle turbines. Analysis of traditional power plant cycles, including Rankine, Refrigeration and heat pump.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MHT 205 [Min Grade: D]

MHT 214 Technology Laboratory I 3.0 Credits
Conduct experiments to determine the physical properties of incompressible fluids and to measure the flow rates of velocities utilizing pilot tubes, office plates, Venturi and Weirs flow meter, U-tube differential manometers and piezometers. Some or all pre-requisites may be taken as either a pre-requisite or co-requisite. Please see the department for more information.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Junior or Senior.
Prerequisites: MHT 301 [Min Grade: D] (Can be taken Concurrently)

MHT 220 Applied Statics 3.0 Credits
Explores forces, moments, couples, statistics of particles, and rigid bodies in two and three dimensions. Examines external and internal distributed forces, first moments and centroids, and structures such as trusses, frames and machines.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 282 [Min Grade: D] and MATH 122 [Min Grade: D]

MHT 222 Applied Dynamics I 3.0 Credits
Topics include friction, second moments, and virtual work; kinematics of particles-rectilinear and curvilinear motions of dynamic particles-force, mass and acceleration, work and energy.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 103 [Min Grade: D] or MATH 122 [Min Grade: D]

MHT 224 Applied Dynamics II 3.0 Credits
Impulse and momentum of particles; kinematics and dynamics of rigid bodies-force-mass and acceleration; dynamics of rigid bodies - work and energy. Impulse and momentum; introduction to mechanical vibration.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MHT 222 [Min Grade: D]

MHT 226 Measurement Techniques and Instrumentation 3.0 Credits
Basic concepts of measurement and measurement systems and techniques, causes of errors and error propagation; uncertainty analysis, data collection and analysis using statistical methods, data acquisition systems; students perform experimental laboratory activities involving various measurement sensors and instruments.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PHYS 104 [Min Grade: D] and STAT 201 [Min Grade: D] and EET 207 [Min Grade: D]

MHT 295 Environmental Control Plasma Laboratory 2.0 Credits
The course presents engineering principles of non-thermal plasma application to air cleaning from Volatile Organic Compounds by combining hands-on laboratory experience with lectures. The students learn the engineering and physical principles of non-equilibrium plasma systems using the unique pulsed corona system of the Drexel Plasma Institute Environmental Laboratory.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CHEM 111 [Min Grade: D] and CHEM 113 [Min Grade: D]

MHT 301 Fluid Mechanics I 3.0 Credits
Examine hydrostatics; principles governing fluids at rest; pressure measurement; hydrostatic forces on submerged areas and objects; simple dams. Discuss fluid flow in pipes under pressure; fluid energy; power and friction loss; Bernoulli's theorem. Flow measurement.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MHT 205 [Min Grade: D] and MET 213 [Min Grade: D] and MET 209 [Min Grade: D]

MHT 310 Applied Strength of Materials I 3.0 Credits
Topics include axially loaded members, stress and strain, allowable stresses, factor of safety, temperature effects, indeterminate members, torsional stresses and deformation. Students also examine shear moment beams; and flexural and transverse shearing stresses in beams.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MHT 222 [Min Grade: D]

MHT 312 Applied Strength of Materials II 3.0 Credits
A study of determinate and indeterminate bean deflections and reactions by superposition, integration and moment area methods. Topics include combined stresses; principal stresses; Mohr's circle; and theories of failure.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MHT 310 [Min Grade: D]

MHT 314 Thermo and Heat Transfer Analysis 3.0 Credits
Explores basic thermodynamic and heat transfer concepts and relations including fundamental of conduction, convection, and radiation using modern experiential methods to analyze thermodynamics systems and the related heat transfer mechanisms.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MHT 205 [Min Grade: D]

MHT 316 Fluid Mechanics Laboratory 3.0 Credits
Conduct experiments to determine the physical properties of incompressible fluids and to measure the flow rate of velocities as the fluid flows through open channels, partially filled conduits, conduits under pressure, pipe networks, and turbines and pumps.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MHT 301 [Min Grade: D]

MHT 401 Mechanical Design I 4.0 Credits
An introduction to mechanical design, the design process, design factors, creativity, optimization, human factors, and value engineering. Topics include simple design, properties and selection of materials; stress concentrations; strength under combined stresses; theories of failure; impact; and fluctuating and repeated loads.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MET 100 [Min Grade: D] and MET 213 [Min Grade: D]

MHT 402 Mechanical Design II 4.0 Credits
Topics include deformation and design of belt drives, chair drives, detachable fasteners and bearings, lubrication, and journal bearings. Covers stresses and power transmission of spur, bevel, and worm gear, shaft design, and clutches and brakes.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MHT 401 [Min Grade: D]

MHT 403 Fluid Mechanics II 3.0 Credits
Consider pipe networks and reservoir systems, flow in open channels and uniform flow energy, friction loss, minor losses, velocity distribution, alternate stages of flow, critical flow, non-uniform flow, accelerated, retarded flow and hydraulic jump.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: MHT 301 [Min Grade: D]

MHT 404 Advanced Materials 3.0 Credits
Lectures on inorganic materials, i.e., polymers, glasses, ceramics, concrete, wood, and materials having important electrical and magnetic properties; also a summary of the most up-to-date applications for the fabrication and uses of both metals and nonmetals.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.
Prerequisites: MET 101 [Min Grade: D]

MHT 405 HVAC 3.0 Credits
Heating, Ventilation, and Air Conditioning (HVAC) focuses on air conditioning principles, including psychometrics and heat pumps. Examines calculation of heating and cooling loads in accordance with ASHRAE practices, principles of gas compression, analysis of vapor compression; refrigeration systems, low temperature refrigeration cycles, and absorption refrigeration systems.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if classification is Senior.
Prerequisites: MHT 206 [Min Grade: D]

Property Management

Courses

PRMT 110 Introduction to Property Management 3.0 Credits
An introduction to the multidisciplinary world of property management. This course provides an overview of facilities, construction, marketing, leadership, human resource management, finance, law, sociology, and how to interact with a variety of key stakeholders, such as property owners, investors, tenants, and the government.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 210 Rental Property & Fair Housing Law 3.0 Credits
Rental Property Law including lease essentials, tenancies, implied warranty of habitability, security deposits, tort liability, leasehold improvements, default, eviction, landlord¿s and tenant¿s rights, duties and remedies. The course covers the basics of Fair Housing law, the Americans with Disabilities Act, and anti-discrimination law. Current issues and cases are featured.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 215 Building Systems for PRMT I 3.0 Credits
The first of a two-course sequence addressing building systems. Covers heating, ventilating, and air-conditioning principles and practices as they relate to property management.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 216 Building Systems for PRMT II 3.0 Credits
The second of a two-course sequence addressing building systems. Covers plumbing, electrical, fire safety, telecommunications, acoustical and roofing system principles and practices as they relate to property management.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 215 [Min Grade: D]

PRMT 225 Technical Drawings for Property Managers 3.0 Credits
This course covers reading and interpreting a variety of technical drawings and plans that relate to property management.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 310 Property Financing & Valuation 3.0 Credits
This course provides the financial tools to calculate and analyze the cash flows, tax implications and risks of various projects. Decision-making models, lease valuation, and sensitivity analysis are employed in real situations. Alternative financing choices, cost of funds, tax incentive options, capitalization rates, and current market conditions are considered.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FIN 301 [Min Grade: D]

PRMT 315 Property Risk Management 3.0 Credits
This course focuses on strategies managers and owners employ to maximize protection of property and tenants and minimize exposure to liability and costs. The course includes emergency management, security, and insurance protection. Agency duties are explored including fair housing and environmental issues. The essentials of various insurance policies are presented.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 320 Sustainable Property Management 3.0 Credits
An introduction to the study of sustainable housing where energy issues and environmental resource efficiences are considered in the planning, development, design, renovation, environmental prOtection, waste minimization, and overall management of a property. The impact of Green Property design on property management expecially facility management is featured.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 325 Human Resource Strategies - Property Management 3.0 Credits
This course focuses on specialized strategies to successfully manage employees and subcontractors involved in property management companies and projects. A variety of areas are covered: recruiting top talent, retention, diversity policies, employee coaching, negotiations, conflict resolution, training and development, outsourcing, and housing law.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 330 Property Management Technology 3.0 Credits
The focus of this course is the role that technology plays in the management and marketing of property. Important issues discussed include the latest software innovations, auto-pay systems, tenant website systems, software integration, communications strategy, security systems, television and data systems, and incorporating technology into a property's marketing plan.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 110 [Min Grade: D]

PRMT 333 Social Responsibility for Property Managers 3.0 Credits
The course explores application of ethics and social responsibility concepts, and challenges property managers are likely to face.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 335 Marketing and Leasing for Residential Properties 3.0 Credits
This course covers the marketing of residential rental properties to acquire new tenants and retain existing ones. Market analysis is used as a foundation to create a marketing plan. Buyer motivation, customer service, and tenant retention strategies are discussed. Students demonstrate successful sales techniques by participating in a sales presentation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 340 Managing and Marketing for Retail Properties 3.0 Credits
An introduction to managing and marketing retail property using shopping centers as the basis for discussion. Issues include leasing, tenant mix, tenant relations, advertising, and daily and long-term concerns. Mixed-use developments are featured and students review best practice examples and analyze and visit area shopping centers.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 110 [Min Grade: D]

PRMT 341 Managing and Marketing Office Buildings 3.0 Credits
This course covers skills required for successful office building management. Topics include managing, marketing, leasing, and maintaining single office buildings and portfolios of properties. Views management of the office building as a real estate investment.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 110 [Min Grade: D]

PRMT 342 Managing and Marketing Industrial Properties 3.0 Credits
This course covers skills required for successful industrial property management. Topics include managing, marketing, leasing, and maintaining single industrial properties and portfolios of industrial properties.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 110 [Min Grade: D]

PRMT 345 Managing & Marketing Housing for an Aging Population 3.0 Credits
This course covers the management and marketing of housing for later life starting with a market analysis. Students discover challenges to be overcome and opportunities available in this unique segment of the housing market. The course covers successful management and marketing strategies involving active adult communities and senior living facilities.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 110 [Min Grade: D]

PRMT 350 Affordable Housing Management 3.0 Credits
An introduction to the challenges of managing affordable housing. Managing affordable housing requires the interaction of important players: legislators, government policymakers, citizen advocacy groups, and citizens/tenants. This course features presentations from industry leaders, visits to affordable developments, and completion of an analysis paper covering the development, marketing and management process.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 110 [Min Grade: D]

PRMT 355 Student Housing Management 3.0 Credits
This course focuses on the effective management of student housing. Successful student housing managers need to have specialized education in a variety of areas including federal laws, emergency management requirements, security and communications planning, marketing to the student population, town-gown relations and awareness of current cases and issues.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 110 [Min Grade: D]

PRMT 356 Military Housing Management 3.0 Credits
This course focuses on the effective management of military housing. The successful management of military housing requires specialized study in a variety of areas including federal laws, emergency management requirements, security and communications planning, military regulations, Department of Defense initiatives and regulations, and awareness of current cases and issues.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 110 [Min Grade: D]

PRMT 360 Managing & Marketing for Commercial Properties 3.0 Credits
An introduction to managing and marketing commercial property using office buildings, warehouses, medical buildings, factories and industrial properties as the basis for discussion and analysis. Issues include maintenance, marketing, location analysis, lease provisions, risk management, leasehold improvements, and government and tax incentive programs. Students discuss best practice examples and analyze and visit properties to meet industry leaders.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 110 [Min Grade: D] and FIN 301 [Min Grade: D]

PRMT 363 Commercial Property Financial Reports 3.0 Credits
Covers the administration, preparation, and interpretation of operating and capital budgets, profit and loss statements, balance sheets, arrears reports, vacancy reports, and collection reports. Topics include tenant charges for operating costs, calculating a lease commission, and understanding components of net operating income and cash flow.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FIN 301 [Min Grade: D] and PRMT 110 [Min Grade: D]

PRMT 365 Commercial Property Appraisal 3.0 Credits
This course focuses on the fundamental concepts of real estate appraisal with an emphasis on the process of valuing commercial property. The course covers the foundations of property valuation, data collection and analysis, and alternative approaches to estimating the value of commercial properties.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 380 Special Topics in PRMT 0.5-12.0 Credits
Covers special topics of interest in Property Management. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies

PRMT 399 Independent Study in Property Management 1.0-6.0 Credit
Provides individual study or research in Property Management under faculty supervision. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Restrictions: Can enroll if major is PRMT.

PRMT 491 Senior Project in Property Management 3.0 Credits
In this capstone course students participate in discussions and conduct research of key issues facing property managers. A major part of the class is a community analysis project using guidelines provided by the National Apartment Association and a professional property manager as a mentor through the process.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is PRMT and classification is Senior.

Project Management

Courses

PROJ 301 Introduction to Project Management 3.0 Credits
Course examines design, appraisal, planning, and implementation of a project. It provides in-depth analysis of approaches to managing projects in both public and private sectors.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PROJ 380 Special Topics in Project Management 0.5-12.0 Credits
Special topics of interest in project management. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

Professional Studies

Courses

PRST 180 Special Topics in PRST 1.0-4.0 Credit
Covers special topics related to Professional Studies. Allows the college to offer new, specialized lower-level topics of interest and relevance to the major.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 11 times for 12 credits

PRST 211 Computer Applications for Professionals 3.0 Credits
Through lecture-demonstrations, hands-on labs, independent study assignments, and case study analysis, students are challenged to use critical-thinking, data analysis and problem-solving techniques to develop cost-efficient and effective solutions to realistic professional problems using computer-based business application software. Students should possess a basic level of computer proficiency before taking this course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRST 212 Creative Studies in the World Wide Web 3.0 Credits
This course prepares professionals with an understanding of the process of developing creative, functional Web sites. Concentrating on the creative flow of the design process, the course uses Adobe Dreamweaver as the medium for development. Students should possess a basic level of computer proficiency before taking this course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRST 303 Interpersonal Skills for Virtual Teams 3.0 Credits
This course will introduce students to the dynamics of virtual teamwork and will allow students to experience first-hand the opportunities and challenges associated with operating in a virtual environment.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

PRST 330 Career & Professional Development 3.0 Credits
This course explores the literature of careers including preparation, organizational entry, orientation, nontraditional careers, and early, mid, and later career issues. The course provides students with opportunities for assessment of interests and capabilities, initiation and implementation of a personal development plan (PDP), and feedback on personal and career development.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

PRST 380 Advanced Special Topics in PRST 1.0-4.0 Credit
Covers special topics of interest in Professional Studies. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 11 times for 12 credits

PRST 399 Independent Study in Professional Studies 0.5-6.0 Credits
Provides individual study or research in Professional Studies under faculty supervision. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 11 times for 6 credits
Restrictions: Can enroll if major is PRST.

PRST 440 Policy Analysis 3.0 Credits
The course analyzes the entire process of policy agenda-setting, initiation, decision-making, implementation, evaluation and assessment. Students will be equipped with tools to analyze and understand the entire process of policy formation in any public or private enterprise. The skills developed in this course can be used in many professional fields.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

PRST 450 Creative Leadership for Professionals 3.0 Credits
This course presents leadership as a collaborative focus for transforming change. Topics include the leadership crisis, differences between leadership and management, how leaders create and change culture, and ways in which leaders build creative, enduring organizations. In addition, the course is designed to help students develop their own leadership potential.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

PRST 491 [WI] Professional Portfolio I 3.0 Credits
The professional portfolio is a two-course capstone project that provides Professional Studies majors with an opportunity to demonstrate achievement in their major and to engage in self-reflection. Components include reflective essays and carefully chosen samples of academic and relevant professional work completed during the college experience. This is a writing intensive course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is PRST.
Cannot enroll if classification is Freshman or Junior or Pre-Junior or Sophomore
Prerequisites: COM 270 [Min Grade: D] and CAT 301 [Min Grade: D] and CRTV 301 [Min Grade: D] and CRTV 302 [Min Grade: D] and CRTV 303 [Min Grade: D] and PRST 440 [Min Grade: D] and PRST 450 [Min Grade: D]

PRST 492 [WI] Professional Portfolio II 3.0 Credits
Requires completion of the professional portfolio begun on PRST 491. Components of Professional Portfolio II include creative expression, future directions, and reflect on the major and the experience of creating a portfolio. This is a writing intensive course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is PRST.
Cannot enroll if classification is Freshman or Junior or Pre-Junior or Sophomore
Prerequisites: COM 230 [Min Grade: C] and CAT 360 [Min Grade: C] and PRST 491 [Min Grade: C]

Real Estate

Courses

REAL 310 Introduction to Real Estate 3.0 Credits
This course provides the foundation for understanding the Real Estate business with a survey of development, land use, planning, property rights, leases, deeds, contracts, mortgages, time value of money and insurance.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore
Prerequisites: ACCT 115 [Min Grade: D]

REAL 320 Real Estate Law - Principle & Practice 3.0 Credits
This course will explore the unique legal requirements of the real estate business including property rights, involuntary transfers, easements, private restrictions, public restrictions, zoning and land development laws.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

REAL 330 Facilities & Property Management 3.0 Credits
This course will explore the role of a property manager in maintaining a real estate asset, earning a return on operations and tenant retention and satisfaction through property management.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

REAL 470 Real Estate Investments - Market & Feasibility Analysis 3.0 Credits
This course will introduce and explore the market analysis and feasibility methods in framing and supporting investment decision making for real estate projects.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

REAL 471 Advanced Real Estate in Investment & Analysis 3.0 Credits
This course will explore the market analysis and feasibility methods in framing and supporting investment decision making for real estate projects. Detailed market analysis strategies will be employed and case studies will be analyzed to deepen the students's knowledge and judgement for investment decision making.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore
Prerequisites: REAL 470 [Min Grade: D]

REAL 472 Advanced Market Research & Analysis 3.0 Credits
This course will explore the market research methods used to understand and dissect geographical and demographical real estate markets. Detailed market research strategies will be employed and case studies will be analyzed to deepen the student¿s knowledge of market research techniques and resources.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore
Prerequisites: REAL 470 [Min Grade: D]

REAL 473 Sales & Marketing of Real Estate 3.0 Credits
This course will explore the strategies for successful marketing of real property bases on market research and development strategies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

REAL 474 Real Estate Economics in Urban Markets 3.0 Credits
This course will offer a unique and detailed perspective on urban real estate development and the special sub-markets in which they exist. Attention will be given to the characteristics of the particular economic factors relevant in urban real estate markets.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

REAL 475 Real Estate Finance 3.0 Credits
This course will focus on the options and implications of different financing methods with the unique trade offs associated with each considered.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

REAL 476 Real Estate Valuation & Analysis 3.0 Credits
This course will introduce the concepts of real estate valuation, appraisals, and the relationship of these to financing and cash requirements.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore

Retail Leadership

Courses

RETL 315 Power of Retail Brands 3.0 Credits
This course provides an in-depth analysis of theoretical and applied branding techniques. Retail marketing, merchandising, and in-store brand representatives will be analyzed to recognize the detailing necessary to create a successful retail brand. Students will read branding studies to comprehend why the phenomena of branding has encompassed our consumer society.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

RETL 325 Applied In-Store Visual Strategies 3.0 Credits
Provides students with an understanding of how retailers use visual display to gain retail market share. Students will examine various types of visual display and how this impacts the retail environment.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

RETL 400 Retail Leadership Capstone 3.0 Credits
This course will provide students practical experience leading all aspects of a retail establishment. Topics covered include customer service, human resources, planogram/floorset, visual merchandising/display, sales and completing the sale, merchandising the store, quality of merchandise/product, leadership responsibilities, and future goals.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: DSMR 231 [Min Grade: C] and DSMR 232 [Min Grade: C]

Sport Management

Courses

SMT 101 Principles of Coaching 3.0 Credits
This course will include setting performance goals in coaching, the various roles of the coach, ethical conduct in coaching, the psychology of coaching, coach-athlete compatibility, coaching burnout, personality of the coach, and coaching youth sports. An emphasis is places on conducting practices and competitions to enhance the social-emotional growth of athletes.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 102 Principles of Coaching II 3.0 Credits
This course will examine the administrative side of coaching by approaching the profession from a business manager's standpoint. The NCAA's Champs Life Skills model will be incorporated into the course. Students will develop their own personal philosophies and strategies crucial for fostering development of student athletes outside of sport.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 101 [Min Grade: D]

SMT 110 The Business of Sport 3.0 Credits
This course will introduce students to the billion-dollar industry and identify the vast, creative, and substantial role business plays in professional, collegiate and amateur sports. Sports business applications are explored in the following areas: sponsorship. Promotions, marketing, fundraising, finance, media, ticketing, public relations, labor, facilities, e-sports and sport careers.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 152 Leadership in Sports & Society 3.0 Credits
This course helps the students realize and understand their impact as role models in the community and leaders for youth in American society. The students and coaches will learn about theory and identify and develop their leadership styles.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 200 Introduction to Sport Facility and Event Management 3.0 Credits
Introduction to Sport Facility and Event Management. An introduction to the planning, running, maintaining and evaluating of sporting facilities and events. This course will introduce students to topics pertinent to the operation of sports facilities and to the management and organization of sports events. Financial considerations for both the private and public sector will be emphasized.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 110 [Min Grade: D]

SMT 201 Sports Marketing, Promotion, and Public Relations 3.0 Credits
Students will build an integrated marketing plan for a sporting event by first describing how the four Ps of marketing are applied in sports. Students learn about the uses of the essential elements of marketing. Students will be able to identify the conventions of sport promotions and public relations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D]

SMT 203 Sports Conditioning 3.0 Credits
Course will examine principles of sports conditioning and training. Students will gain an in-depth understanding of training principles in a non-sport specific format. Developing and administering a training plan is a key component to coaching and students will be adept at this skill after completing this course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 205 Sports Information 3.0 Credits
This course is an overview of sports information and media relations and its role in the field of sport management. This course will cover skill sets and roles a sports information specialist must demonstrate in order to be successful.There will be emphasis on writing, communication, planning, and organizational skills.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Prerequisites: SMT 110 [Min Grade: D]

SMT 210 Prevention and Care Athletic Injuries 3.0 Credits
This course will concentrate on the coach's role in the health and well being of the athlete. Emphasis will be placed on both preventive and well being of the athlete. Emphasis will be placed on both preventive measures to decrease an athlete's chance for injury as well as the appropriate response when injury does occur. The psychological implications of injury to an athlete will be explored and specific injuries will be discussed.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 215 Sports Ticket Sales & Operations 3.0 Credits
Course will examine the diverse and changing environment of ticket and operation sales in the sport industry. Course will expose students to the standards, principles and practices that can be applied to multitude of areas that ticketing touches within the sports industry.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D]

SMT 220 Recreation, Wellness & Society 3.0 Credits
This course chronicles the history and trends in recreation in modern society. It identifies the major operations of the recreation industry and demonstrates its economic impact; compares and contrasts the purposes and practices of recreation, leisure, and sport. Emphasis will be placed on asking to what degree increased recreation impacts the health and wellness of a society.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 225 Sports Budgeting 3.0 Credits
Basic theory in finance and accounting applied to managerial control of sport organizations. Includes forms of ownership, taxation, financial analysis, capital budgeting, and economic impact studies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: ACCT 115 [Min Grade: D]

SMT 230 Sports and the Law 3.0 Credits
Reviews the legal and regularity aspects, elements, and relationships for all constituents participating in sports: administrators, coaches, athletes, agents, vendors, sponsors, faculty managers and owners, and spectators. Seminal court cases are discussed. Students examine the inextricable links between the law and business ethics.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D]

SMT 235 Sports Administration and Governance 3.0 Credits
Sports create governance structures, policies, and procedures, even at the most rudimentary level. This course examines the purpose and practice of sports governance and how it relates to sports administration from little league, to the Olympic Games, to international federations, to professional sports.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D]

SMT 240 Olympic Games 3.0 Credits
Provides an overview of modern Olympic Games focusing on the organization, politics, economic implications and the bidding process of the Games. Topics of sponsorship, media coverage and ethical considerations will be discussed. The course will also address how the spirit of the Olympic Games has changed over time.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 245 NCAA Compliance 3.0 Credits
This course will overview basic regulatory, legal and due process rules that govern NCAA competition. Course will cover elements of NCAA regulations, rules interpretations, enforcement decisions and sanctions. An understanding of NCAA rules compliance will be gained through legal cases and actual NCAA enforcement proceedings.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D]

SMT 250 [WI] Technology and Sport 3.0 Credits
Students will identify the major areas where technology has enhanced the performance of athletes and the participation in sports spectatorship. They will be introduced to the essential technologies used in sport management with an emphasis on communication technology. This is a Writing Intensive course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D]

SMT 254 Women & Minority Opportunities in Sport 3.0 Credits
This course chronicles the major events and strategies used for women and minorities to have equal opportunities to participate in sports at all levels. It pOints out the social and legal issues surrounding the dramatic rise in women and minority participation at all levels of play.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman

SMT 255 Legal Foundations of Title IX 3.0 Credits
This course will overview the basic legal concepts surrounding Tille IX and its applications to intercollegiate athletics programs. The basic elements of Tille IX and how various tests are applied by the court system will be included. Course will focus on actual legal cases, investigations and remedial plans.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D] and SMT 230 [Min Grade: D]

SMT 260 Sports Agents & Labor Relations 3.0 Credits
This course examines the controversial nature of being a sports agent. Students will be exposed to legal and ethical issues that surround sports agents. Additionally, students will review the labor relations laws and collective bargaining agreements that govern professional sports through a variety of lectures, readings and assignments.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 230 [Min Grade: D] and BLAW 201 [Min Grade: D]

SMT 270 Sports Facility Planning & Management 3.0 Credits
This course is designed to provide learning experiences in managing sport facility operations, planning new sport facilities, and renovating and maintaining new facilities. An understanding of sports facilities, their design, and management will be gained through field study, speakers, and standard classroom material.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 200 [Min Grade: D]

SMT 275 Sports Event Management 3.0 Credits
This course provides the student with exposure to comprehensive event planning, funding and managing sports events including those for professional, amateur and collegiate sports events, and commercial, recreational, and club sports.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 200 [Min Grade: D]

SMT 280 Kinesiology 3.0 Credits
Provides an introduction and overview to the science of human movement. Identifies uses of the field of kinesiology in relation to science, medicine, human behavior, athletics, and overall fitness. Applies knowledge and concepts to the areas of physical activity, athletics, and recreation/fitness. Students will actively participate in and observe human movement in human performance labs.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 290 Digital Media in Sport 3.0 Credits
This course is designed to introduce students to the digital landscape of sport business. Topics include current issues in digital sports media, digital media and sports facilities, digital media and professional sports teams, mobile applications in sport, and selling digital sport products and services.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 205 [Min Grade: D], SMT 201 [Min Grade: D] (Can be taken Concurrently)

SMT 300 Quantitative Analysis and Statistics for Sports 3.0 Credits
This is an intensive course presented for the non-specialist in statistical analysis and statistical models applicable in the sports industry. The emphasis is on proper application of classical descriptive and inferential techniques to design-making using sample data. Covers statistical techniques that can be applied to further studies in the sports.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman or Sophomore
Prerequisites: SMT 110 [Min Grade: D] and (MATH 101 [Min Grade: D] or MATH 181 [Min Grade: D])

SMT 305 Fundraising in Sports 3.0 Credits
Course will examine skills, strategies and techniques needed for successful revenue generation in the sport industry. Areas to be addressed include characteristics of a donor, preparing direct mail solicitation, understanding major gift fundraising, and importance of donor research. Ethical issues and trends in athletic development will also be addressed.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D] and SMT 201 [Min Grade: D]

SMT 307 Corporate Sponsorship in Sports 3.0 Credits
Course will examine corporate sponsorship and its impact on the sport industry from a sales and marketing perspective. Students will gain an understanding of sponsorship inventory, pricing, negotiation, and activation of sponsorship agreements.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D] and SMT 201 [Min Grade: D]

SMT 309 Capital Campaigns in Athletics 3.0 Credits
Course will examine strategies organizations use to develop and launch successful athletic capital campaigns. Areas addressed include understanding a capital campaign and setting fundraising goals. Organizational readiness, feasibility study and campaign failures will also be addressed.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D] and SMT 201 [Min Grade: D]

SMT 310 Sports Contracts 3.0 Credits
Course will cover basic legal issues and strategies surrounding contract issues in sports. Students will be introduced to basic elements of contract law and see it applied by the court system in the context of the sports industry.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 230 [Min Grade: D] and BLAW 201 [Min Grade: D]

SMT 315 Sports Publications & Graphics 3.0 Credits
Course will examine sports publications such as tickets, fund raising and marketing brochures, media guides, annual reports and website publications. Students will submit writings to the sport management online digest.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 205 [Min Grade: D]

SMT 320 Economic Aspects of Sports Management 3.0 Credits
An introduction to the economic aspects of sport management, which will examine labor relations, supply and demand, restrictive practices, stadium funding mechanisms, and franchise values and movements. The growing importance of the media in the sports-economic nexus and the inextricable link between economics and law will be emphasized.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 110 [Min Grade: D]

SMT 337 Risk Management in Sports 3.0 Credits
Course will cover basic issues and strategies surrounding risk management in athletics. Students will be introduced to types of legal obligations and liability exposure inherent in sports and the tools used to minimize risk. Emphasis will be on safety review and risk assessment.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 230 [Min Grade: D] and BLAW 201 [Min Grade: D]

SMT 340 [WI] International Aspects of Sport 3.0 Credits
Continuing with the true spirit of the Olympic Games, sports can be a rich avenue for building an international community. This course compares and contrasts how sports are perceived, organized, and played in many countries. It examines the social, political, and economic aspects of sports in other countries. Students will learn about major international sporting events. This is a writing intensive course.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 110 [Min Grade: D]

SMT 345 Fan Experience Management 3.0 Credits
Course will explore impact of fan experience on the sports industry. Course will examine customer service philosophies and techniques to improve overall experience of consumers. Course will also review research methods used to measure fan/ sponsor experience and determine impact on retention, entertaining spend and per capita spending.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT.
Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D] and SMT 201 [Min Grade: D]

SMT 347 Sport Tourism 3.0 Credits
Students will investigate international sport tourism organizations and their services, and analyze issues including: Sport tourism facility and event financing; sport tourism impacts; and globalization and sport tourism.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D]

SMT 365 Operations Management in Sport 3.0 Credits
This course tracks the growing network of media outlets devoted to sports coverage and shows the essential conventions of sports coverage. Students discover how sports news is gathered, designed, and disseminated to many audiences and observe the dynamics between and among athletes, athletic events, businesses of sports, and the media.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 110 [Min Grade: D] and SMT 250 [Min Grade: D] and ORGB 300 [Min Grade: D]

SMT 390 Special Topics in Sports Management 3.0 Credits
This course will cover special topics of interest to students in the Sports Studies and Management major. May be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit

SMT 399 Independent Study 0.5-12.0 Credits
Provides supervised study that allows students to explore additional sport management topics of their choosing.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 3 times for 12 credits
Restrictions: Can enroll if major is SMT.
Prerequisites: SMT 110 [Min Grade: D]

SMT 401 Professional Portfolio 3.0 Credits
The professional portfolio is a capstone course that provides sport
management majors an opportunity to demonstrate achievement in their
major and engage in self-reflection. Components include reflective essays
and samples of relevant professional work completed during the college
experience.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if major is SMT and classification is Senior.
Prerequisites: SMT 225 [Min Grade: D] and SMT 250 [Min Grade: D] and
SMT 305 [Min Grade: D] and SMT 310 [Min Grade: D]

SMT 475 Sports Industry Practicum 3.0 Credits
The practicum is designed to develop greater breadth and depth of
students' understanding and experience within the industry. The practical
application of knowledge and skill acquired in class will help students
extend their expertise by working in a sport management related
organization. Suggested for non-co-op students.
College/Department: Goodwin School of Technology Professional
Studies
Repeat Status: Can be repeated 2 times for 6 credits
Restrictions: Cannot enroll if classification is Freshman
Prerequisites: SMT 110 [Min Grade: D] or SMT 101 [Min Grade: D]

Graduate Course Descriptions

Construction Management

Courses

CMGT 501 Leadership in Construction 3.0 Credits
This course is intended to introduce students to value-based, effective leadership principles and practices across the construction industry. Topics include prevailing theory, leadership traits & styles, emotional intelligence, motivation, collaborative environs and alliances, and change.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 505 Construction Accounting and Financial Management 3.0 Credits
This course presents the principles of accounting for construction projects. Topics include techniques of cost accounting and financial analysis employed by the construction practitioners. Specific topics include accounting principles to track and manage labor, material, equipment, overhead and other construction resources. Topics specific to construction include contract revenue, financial reporting, and tax considerations for conductors.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 510 Construction Control Techniques 3.0 Credits
This course addresses the knowledge and skill sets required to successfully plan and control complex construction projects. Topics include procurement and contracts, pre-bid planning, contract budgets and cash flow, and planning case studies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 512 Cost Estimating and Bidding Strategies 3.0 Credits
This is an advanced course in construction estimating addressing competitive bidding strategies. Topics include profit objectives, analyzing the competition, and determining optimum combo of price, cost and volume.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 515 Risk Management in Construction 3.0 Credits
This course presents risk management techniques and practices specific to construction projects. Students will gain an understanding of the risks stemming from technical and business sources related to the construction process, and to identify, quantify, and develop the appropriate response strategies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 525 Applied Construction Project Management 3.0 Credits
This course presents the knowledge and skills required to successfully manage complex construction projects. Topics include the project management hard skills such as estimating and budgeting, time management, and planning.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CMGT 501 [Min Grade: C]

CMGT 528 Construction Contract Administration 3.0 Credits
This course introduces the managerial and legal aspects of construction contract administration. The student is introduced to basic concepts of contract law employed in construction and the rules of interpretation. Topics include changes and change orders, disputes, differing site conditions, and defective documents.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 530 Equipment Applications and Economy 3.0 Credits
This course provides an in-depth treatment of heavy construction equipment applications and covers the associated management practices. The application topics include techniques used to analyze and estimate equipment productivity, equipment selection, and optimization. The course includes a strong emphasis in equipment economics including owning and operating costs.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 532 International Construction Practices 3.0 Credits
This course provides an introduction to the strategic issues relating to the business of construction on a global scale. The course is intended to provide students with the knowledge of current best practices by construction organizations in America, Europe and Asia.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 535 Community Impact Analysis 3.0 Credits
This course provides an overview of commmunity impact assessment, including the benefits of conducting such an assessment. It also provides general guidelines for conducting a community impact assessment, including types of impacts that should be addressed during the process and related issues.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 538 Strategic Management in Construction 3.0 Credits
This course presents concepts in strategic management within construction organizations. Topics include clients/constructors/ competencies, portfolio management, and marketing strategies for construction firms.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 540 Schedule Impact Analysis 3.0 Credits
This is an advanced course that deals with the legal aspects of construction schedules. Topics include time impact analysis, applying CPM techniques to contract claims, and calculating delay damages.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CMGT 510 [Min Grade: C]

CMGT 545 Sustainable Principles & Practices 3.0 Credits
This course addresses the fundamentals of green building concepts and practices underlying sustainable construction from the perspective of the LEED Green Building rating system.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 546 Sustainable Technologies 3.0 Credits
This course addresses sustainable technologies in the built environment and is presented as a whole building design system. The course is organized into three major categories-Design Guidance, Project Management, and Operations & Maintenance.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 547 LEED Concepts 3.0 Credits
This course addresses the fundamental concepts and practices underlying the LEED green building rating system.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 548 Quality Management and Construction Performance 3.0 Credits
This course covers quality management of construction processes. Topics include designing and implementing quality management plans, establishing a quality management system and Information technology in quality management.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CMGT 501 [Min Grade: C]

CMGT 550 Productivity Analysis and Improvement 3.0 Credits
The focus of this course is construction productivity measurement and improvement. Topics include roles of the individual stakeholders, quantifying labor and equipment productivity, and techniques to improve job site productivity.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 558 Community Sustainability 3.0 Credits
This course provides clear direction to students how to design cities and developments that are sustainable and reduce environmental harm.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 696 Capstone Project in Construction Management I 3.0 Credits
The capstone project is completed independently over two quarters under the direction of full-time Construction Management faculty and is intended to reinforce the knowledge and skills acquired through graduate study.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CMGT 697 Capstone Project in Construction Management II 3.0 Credits
The capstone project is completed independently over two quarters under the direction of full-time Construction Management faculty and is intended to reinforce the knowledge and skills acquired through graduate study.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CMGT 696 [Min Grade: C]

Creativity Studies

Courses

CRTV 501 Foundations in Creativity 3.0 Credits
Provides a foundation in creativity including leading theorists and their ideas. Questions investigated include who is creative and why? What does it mean to be creative? Is creativity a general attribute or is it discipline specific? Students will complete and score a creativity assessment.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CRTV 502 Tools and Techniques in Creativity 3.0 Credits
Provides opportunities to enhance creative capacities and strengths. Through study and experiential learning, students work toward self-mastery of creative techniques, tools and strategies. Moreover, through a fieldwork experience, students learn to teach and motivate other individuals or groups to use these techniques in real life circumstances for their benefit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CRTV 503 Creativity in the Workplace 3.0 Credits
This course focuses on applied creativity, how creative ideas happen, how they become innovations, and how creativity can be infused into every aspect of an organization. Examples from a wide range of industries and organizations demonstrate how to build systemic creativity in individuals, in teams, and at the leadership level.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CRTV 610 Creativity and Change Leadership 3.0 Credits
This course explores the relationship between change, leadership, and creativity, and how these three concepts mutually support one another. Distinction is made between a leader who is effective at introducing change, but who is not creative.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CRTV 620 Research Methods and Assessment of Creative and Innovative Thinking 3.0 Credits
This course acquaints students with creativity research and applications. The goal is to help students employ creative problem solving to successfully complete their course of study in the context of other responsibilities and the program's standards and requirements. Using creativity as a vehicle, students will study various research paradigms.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CRTV 630 Global Perspectives on Creativity 3.0 Credits
The goal of this course is to explore theories, research, assessment, and programs for the development of creativity in a wide variety of countries around the world. Motives for the lack of global creativity research are suggested.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CRTV 640 Creativity & Innovation: 1500-Present 3.0 Credits
Trends and interactions of creativity and innovation are examined from pre-1500 to present. Emphasis placed on understanding how the notion of creativity has evolved overtime and its influence on modern workplace and educational environments.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CRTV 650 Current Trends in Creativity & Innovation 3.0 Credits
Focus on five major trends: the study of creativity and social influence, innovation and planning, creativity and cognitive processes, sub-system configuration, and new venture emergence. Though unique in orientation, these trends have a common bond in raising and addressing multi-level issues and possible solutions that involve multiple levels of analysis.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CRTV 660 Diagnostic Creative Intervention 3.0 Credits
Integrates diagnostic teaching, creativity, and mediation skills. Diagnostic teaching is a creative problem solving instructional model framed upon core influences on learning, in depth content knowledge, and pedagogy knowledge. Creativity theories, applications and mediation concepts complement diagnostic teaching as individuals integrate intervention strategies in identifying real problems and creative resolutions.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if program is MS.

CRTV 680 Special Topics in Creativity & Innovation 0.5-12.0 Credits
Covers special topics of interest in creativity and innovation. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 11 times for 12 credits

CRTV 695 Applied Project in Creativity Studies I 3.0 Credits
First of a two-course capstone experience providing creativity studies students with an opportunity to demonstrate achievement in their concentration and to engage in self-reflection. Components include a statement of awareness of personal creative strengths, evidence of emergence as a creative thinker and doer, and synthesis of creative expansion to date.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CRTV 501 [Min Grade: C] and CRTV 502 [Min Grade: C] and CRTV 503 [Min Grade: C] and CRTV 610 [Min Grade: C] and CRTV 620 [Min Grade: C] and CRTV 630 [Min Grade: C]

CRTV 696 Applied Project in Creativity Studies II 3.0 Credits
Students will complete the creative portfolio begun in CRTV 695. Components include creative expression, future directions, and reflection on the major, concentration, and experience of creating a portfolio.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CRTV 695 [Min Grade: C]

CRTV 699 Independent Study in Creativity & Innovation 0.5-6.0 Credits
Provides individual study or research in creativity and innovation under faculty supervision. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

Computing & Security Technology Courses

CST 510 Ethics, Privacy and Legal Issues 3.0 Credits
This course will provide an in-depth working knowledge of the ethics and laws pertaining to information systems security. Topics include the ethics of privacy, confidentiality, authenticity, medical information, copyright, intellectual freedom, censorship, social networking and cyberbullying. Issues related to creation, implementation, enforcement, and assessment of institutional codes of ethics.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if program is MS.

CST 530 Applied Cryptography 3.0 Credits
Introduction to modern cryptographic techniques, algorithms and protocols related to the design and implementation of security-critical applications. Theory, methodology and hands-on lab projects necessary for students to design and implement security solutions utilizing cryptography. Topics include design and analysis of block and stream ciphers, hash functions and their uses, message authentication codes, authentication protocols, symmetric key and public key techniques, pseudo-random number generation, key establishment, key management, digital certificates and secret sharing.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if program is MS.

CST 540 Intrusion Detection 3.0 Credits
Theory and practice of intrusion detection and prevention (IDS) as part of an organization's overall security posture. Topics include network-based, host-based, and hybrid intrusion detection and prevention, attack pattern identification, damage assessment, data forensics, system recovery, continuity of operation and policy and legal issues surrounding the use of IDS.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if program is MS.

CST 604 Technology for Homeland Security 3.0 Credits
Presents the theory and methodology necessary to obtain a working knowledge of the strategic use of network-centric software for data aggregation, integration, collaboration, categorization, and pattern-recognition by homeland security defense. Topics include technology process, data mining, network-centric software, pattern recognition, and technology sensors. Students will conduct research on select topics.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

CST 609 National Security Intelligence 3.0 Credits
This course will present a broad overview of the intelligence community, objectives, methodology, organizational structure and role within the government. Topics include the intelligence process, organizational structure, collections, analysis, covert action, intelligence reform, foreign intelligence, and accountability. Students will conduct research on select topics.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CST 604 [Min Grade: C]

CST 614 Counterintelligence 3.0 Credits
This course will present the theory, techniques and procedures within the counterintelligence community. Objectives, methodology, organizational structure and role within government will be stressed. Topics include the mission, investigations, techniques, collection, analysis, counter-human intelligence techniques, counter-signals intelligence techniques and counter-imagery intelligence techniques. Students will conduct research on select topics.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: CST 609 [Min Grade: C]

E-Learning

Courses

ELL 501 The Purpose and Business of E-Learning 3.0 Credits
Examines the business side of e-learning. Explores historical, organizational and strategic issues associated with developing and delivering e-learning through a wide range of topics. Non-profit and profit models used for marketing and delivering e-learning products are examined and business practices, as they affect the success of e-learning enterprises, are examined.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ELL 502 E-Learning Technologies 3.0 Credits
This course provides a comprehensive introduction to the wide range of emerging e-learning technologies, a description of what is in store for the near future, and foundational elements for sound decision making regarding technological responses to well-defined learning problems.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ELL 503 Teaching and Learning Issues in E-Learning 3.0 Credits
This course prepares trainers, teachers, and administrators at all educational levels with the knowledge they will need to provide effective experiences in distance education. Provides a conceptual and theoretical foundation as well as practical skills and knowledge, along with numerous opportunities for hands-on experience.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ELL 504 Learning Technologies & Disabilities 3.0 Credits
The course is designed to develop the knowledge and skills required to utilize adaptive and assistive technology (AT) and accommodation in the facilitation of learning design and delivery.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ELL 604 Design & Delivery of E-Learning I 3.0 Credits
Extends and assimilates knowledge of several facets of e-learning (planning, technology, pedagogy, usability, and more) to develop a proposal to an RFP or a proposal for a grant related to e-learning. The course emphasizes theory and practice.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: ELL 501 [Min Grade: C] and (ELL 502 [Min Grade: C] or ELL 503 [Min Grade: C])

ELL 605 Design & Delivery of E-Learning II 3.0 Credits
Using the proposal written in ELL 604, students create an implementation plan for and limited development of an e-learning solution. Specific topics such as project management, budgeting, assessment, staffing, and technology will be addressed. The course emphasizes theory and practice.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: ELL 604 [Min Grade: B]

ELL 695 Applied Project in E-Learning Leadership I 3.0 Credits
The first of a two-course sequence in which students create a full-scale project in e-learning that demonstrates the knowledge and skills that they have acquired from the ELL concentration. Students complete five deliverables that form the foundation for ELL 696, which will result in a professional-level E-Learning project.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: ELL 501 [Min Grade: C] and ELL 502 [Min Grade: C] and ELL 503 [Min Grade: C] and ELL 504 [Min Grade: C] and ELL 605 [Min Grade: C]

ELL 696 Applied Project in E-Learning Leadership II 3.0 Credits
The second of a two-course sequence in which students create a full-scale project in E-Learning that demonstrates the knowledge and skills that they have acquired from the ELL concentration. Students complete three deliverables that, added to the work from ELL 695, result in professional-level E-Learning project.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: ELL 695 [Min Grade: C]

Emergency Medical Services

Courses

EMS 501 Paramedic Education I 4.0 Credits
Continues the required national standard paramedic coursework through analysis of patient-care presentations and the provision of appropriate interventions. This course covers behavioral, infectious disease, respiratory and cardiac system topics. This course also provides supervised practice in the laboratory setting and in required clinical units.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 502 Paramedic Education II 4.0 Credits
Continues paramedic coursework through analysis of patient care situations and the provision of appropriate interventions. This course covers neurology, endocrine, allergy and anaphylaxis, GI/GU, toxicology, hematology, OBGYN, pediatrics, neonate and geriatric system topics. Also required skills lab and in clinical rotation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 501 [Min Grade: C]

EMS 503 Paramedic Education III 4.0 Credits
Continues the required national standard paramedic coursework through analysis of patient care presentations and the provision of appropriate interventions. This course covers traumatic injuries, hazardous materials and weapons of mass destruction.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 502 [Min Grade: C]

EMS 504 Organizational Behavior 3.0 Credits
This course explores and covers the areas of Organizational Behavior. Why do organizations not always perform to meet expectations. There are times that organizations perform well and other times they come up short. In this course we will examine the theory and practice behind the successes and failures that we encounter in today's organizations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 505 Proseminar 3.0 Credits
This course is a presentation based overview of the field of Public Safety Services Administration; representatives of major responsibility areas present capsulated position papers on relevant topics; opportunities for students to more finely develop areas of interest and specialty.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 506 Field Practicum I 4.0 Credits
This is the first of two Advanced Life Support (ALS) preceptorships required for skill proficiency. Requires students to perform in the prehospital ALS environment and allows them to practice and refine patient assessments, clinical skills, and begin to acclimate to the role of the paramedic. (16 hours/week field rotation).
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 502 [Min Grade: C]

EMS 507 Field Practicum II 5.0 Credits
The second of the required field rotations. Allows students to demonstrate all skills learned in the clinical courses and prepares students to function as an entry level paramedic. Successful completion required for eligibility to sit for the state certification examination. (28 hours clinical/week.).
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 506 [Min Grade: C]

EMS 508 Emergency Services Finance 3.0 Credits
Covers information necessary for fiscal planning, budgeting, integration with managed-care networks and other reimbursement strategies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 509 Trauma Systems and Specialty Care 3.0 Credits
This course provides an analysis of trauma as a system concept; relationship of specialty care systems within the framework of patient treatment from the acute incident or onset of illness through to rehabilitation. System evaluation points across the care spectrum.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 510 Emergency Services Planning and Administrative Theory 3.0 Credits
This interactive course explores strategic planning techniques that students will use in developing organizations and systems. This includes procedures for goal setting and planned development as well as creating strategies for success in implementing programs and services.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 511 Clinical Capstone 2.0 Credits
This course provides the final integration and application of all principles and techniques learned in the clinical program. Clinical decision making and synthesis of pathophysiology, pharmacology, physical examination, and interventional techniques are evaluated. Preparation for the national certification examination is included.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 522 Instructional Systems Design 3.0 Credits
This course explores and offers in-depth analysis of relevant theories relating to contemporary application of Instructional Systems Design. The purpose is to provide the student with theoretical, experiential and critical perspectives on instructional design as it is applied in a number of educational venues.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 530 Emergency Medical Services and Public Safety Quality 3.0 Credits
Building upon earlier course work, this course will present the Six Sigma principles. After completion of this course the student will be able to participate actively in quality management as part of the multi-disciplinary public safety team. This course is the first in a sequence of three courses on Qualitology.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 535 Instruments and Metrics Quality 3.0 Credits
This course covers the concepts of instruments and metrics of quality management and Six Sigma in Emergency Medical Services and Public Safety. After completion of this course the student will be able to participate actively in advanced quality management as part of the multi-disciplinary public safety team. The course is the second of 3.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 555 Communications 3.0 Credits
Develops a basic understanding of the operations and infrastructure necessary for operation of a public safety communications center and emergency operations center. Covers information flow from caller, field unit, phone systems, radio systems, call processing, EMS dispatch , EOC operations and IT support for communications decision making.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 605 Principles of Adult Education 3.0 Credits
This course explores in-depth analysis of relevant theories relating to contemporary application of adult learner materials and methods. Many adult education theories and practices are explored to provide the participants with a broad understanding of andragogy (the art and science of teaching adults) and how it relates to their field.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 608 Research 3.0 Credits
This interactive course explores and covers the areas of research and experimental design, scientific writing and presentation of scientific materials. This fundamentally important course serves as the foundation for graduate level research assigning personnel to take responsibility for contributing to the research conducted in their field.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 609 Quality Management and Six Sigma Integration 3.0 Credits
This course integrates the student's learning obtained in Introduction to Qualitology and Instruments and Measures of Qualitology through application to real world situations. After completion of this course the student will be able to lead and participate actively in advanced quality management as part of the multi-disciplinary public safety team.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 535 [Min Grade: C]

EMS 610 Epidemiology and Health Promotion 3.0 Credits
Epidemiology and Health Promotion introduces basic concepts and terminology in epidemiology, applies epidemiologic principles to clinical scenarios, reviews the leading causes of morbidity and mortality in the United States, and develops strategies for health promotion across the lifespan.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 617 Emergency Delivery Systems 3.0 Credits
This interactive course will address models of emergency delivery systems with an emphasis on EMS, police and fire agency systems. This course will address systems theory and its application to system design.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 618 Regulatory Compliance Issues 3.0 Credits
Covers regulatory basics and related issues regarding external agencies involved in public service delivery. Examines agencies and documents from FEMA, JCAHO, OSHA, NIOSH, and others. Explores why these regulations are developed, the process by which they come into existence, and how applicable regulations can be found.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 622 Managed Care Principles 3.0 Credits
Examines current health care financial strategies locally and nationally, including the concepts of managed care, members, continuum of care, shared risk, capitation, population-based health care delivery, and others. This course explores marketplace challenges and impacts of current legislations and reimbursement changes.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 630 Homeland Security and Incident Command 3.0 Credits
This course focuses on existing incident management systems and procedures to the unique requirements of responding to threats against homeland security. The course includes web enhanced learning modules incorporating lectures, discussion and group exercises to effectively transition from single to a unified command.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 631 Disaster Analysis and Management 3.0 Credits
This course introduces the student to the current principles and practices of emergency management both from the theoretical point and from the practitioner's perspective. It will discuss the phases of emergency management, how they affect operations and how pre-planning and preparation can be used to smooth emergency response.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 645 Disaster and Emergency Preparedness 3.0 Credits
This course incorporates concepts from EMS 631 as a total program approach for disaster/emergency management and business continuity programs. It will aid first responders in their efforts to develop and maintain a viable all-hazard emergency operations program that is consistent with the national strategy for infrastructure protection.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 706 Special Topics I 3.0 Credits
Special topics allows for currency of the curriculum to explore new areas and development of new curricular directions.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 16 credits

EMS 707 Special Topics II 3.0 Credits
Special Topics allow for currency of the curriculum to explore new areas and development of new curricular directions.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

EMS 710 Thesis/Project I 3.0 Credits
Requires students to do independent research on an aspect of emergency management, public safety or education. Part I of a 2 part process of original work on a thesis or project.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

EMS 711 Thesis/Project II 3.0 Credits
This course continues the research and development of an aspect of emergency management, public safety, or education for the completion and defense of the thesis or project started in Thesis I.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 710 [Min Grade: C]

EMS 712 Thesis/Project III 3.0 Credits
This course continues the research and development of an aspect of emergency management, public safety, or education for the completion and defense of the thesis or project started in Thesis II.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 711 [Min Grade: C]

EMS 900 Registered for Degree Only (RDO) 1.0 Credit
RDO is used after thesis defense for the period of time needed to complete the thesis requirements. Continuous enrollment needs to be maintained during this time.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: EMS 711 [Min Grade: C]

Engineering Technology

Courses

ET 605 Materials for Emerging Technologies 3.0 Credits
General properties of metals, ceramics and polymers are presented. Focus shifts to technologies - photo and fuel cells in the energy industry. Topic include: the chemical process that converts fuel to elec,tricity directly, light energy that converts to electrical energy, band model for optical materials, and materials for the optical and electronic industries.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 610 Networks for Industrial Environments 3.0 Credits
An in-depth review of high-performance wired and wireless networks for industrial control, communications, and computing. The emphasis is on understanding current and newly emerging network architectures, protocols and technologies from the point of view of performance, reliability, and cost. Industry standard modeling and simulation tools are also reviewed.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 615 Rapid Prototyping and Product Design 3.0 Credits
This course will introduce concepts and methods for rapid prototyping, including their technical basis, and unified principles common to almost all rapid prototyping technologies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 619 Programmable Devices and Systems 3.0 Credits
A review of programmable devices and systems for industrial and embedded applications. Field-Programmable Gate Arrays, microcontrollers, and Programmable Logic Controllers are compared with respect to suitability, performance, and cost in industrial and embedded environments. Industry standard modeling and development tools will be introduced and used to predict performance and reliability.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 620 Microsystems and Microfabrication 3.0 Credits
Microsystems and microfabrication covers the principles of design, structure, and operation, as well as fabrication technologies for microsystems including microelectronics, sensors, MEMS, micro-optics, and microfluidics (lab-on-a-chip).
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 635 Engineering Quality Methods 3.0 Credits
Six Sigma concepts and methods are covered with emphasis on its framework, statistical tools and practical implementations. Students will gain a working knowledge of Six Sigma approaches and techniques for applications to both manufacturing and services.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 675 Reliability Engineering 3.0 Credits
This course will introduce the foundations and applications of reliability engineering including basic probability models for component and system failure, with emphasis on practical applications.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 725 Sensors and Measurement Systems 3.0 Credits
This course provides a foundation in sensors and measurement systems including data acquisition for quality control. It covers general concepts, measuring devices, and the manipulation, transmission and recording of data.expanded coverage of sensors, and the use of computer tools in measurement & data acquisition for quality control. Measurement techniques related to micro- and nano-technologies are also discussed, reflecting the growing importance of these technologies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 730 Lean Manufacturing Principles 3.0 Credits
Lean is a generic process management philosophy, developed initially for manufacturing and derived mainly from the Toyota Production System (TPS), Just-in-Time (JIT) operations theory, and earlier sources dating from the work of Taylor, Ford, and others or work methods, mass production, and automation. Lean is an integral part of today's modern manufacturing enterprises.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 732 Modern Energy Conversion Technologies 3.0 Credits
This course introduces new energy conversion technologies, with an emphasis on solid-state devices, distributed systems with storage, and alternative energy sources including solar, waste heat, wind, biomass, and hydrogen. Solid-state energy conversion devices including solar cells, thermoelectrics, thermionics, thermophotovoltaics and light-emitting diodes, as well as solid-state refrigerators, will be described and analyzed.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 755 Sustainable and Green Manufacturing 3.0 Credits
This course covers environmental considerations in engineering product and process design, reduction of environmental impact by design, recycling, material selection, demanufacturing and remanufacturing and trade-offs.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

ET 775 Master's Project and Thesis in Engineering Technology 3.0 Credits
Involves the study and investigation of a research or development topic in the area of the student's interest. Requires the topic and solution to be reported in a thesis under the direction of a faculty advisor. Can be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 3 times for 9 credits

Food Science

Courses

FDSC 506 Food Composition & Behavior 3.0 Credits
Examines the composition of foods and chemical and physical changes in food components occurring during food preparation and processing.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

FDSC 550 Food Microbiology 3.0 Credits
Discusses factors affecting microbial growth in foods. Also covers methods of enumeration of food-borne organisms, microbial spoilage of foods, foods and ingredients from fermentation, food-borne pathogens and their control, and sanitation and HACCP in food processing.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

FDSC 551 Food Microbiology Laboratory 2.0 Credits
Companion laboratory course to FDSC 550. Covers methods of isolation and enumeration of microorganisms important in foods, food fermentations, and methods of control of microorganisms.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FDSC 550 [Min Grade: C], NFS 650 [Min Grade: C] (Can be taken Concurrently)

FDSC 554 Microbiology & Chemistry of Food Safety I 3.0 Credits
Covers the study of microbiological and toxicological factors affecting the safety of food, including natural toxicants, food additives, and food-borne diseases, toxicoses, and parasites.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: ENVR 636 [Min Grade: C]

FDSC 556 Food Preservation Processes 3.0 Credits
Covers fundamentals of food processing and preservation, including techniques and methods employed to extend the useful life of food products, and the significance of changes in the composition of foods due to processing, enzymatic activity, microbial action, and chemical change.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

FDSC 558 Nutritional Impact of Food Processing Methods 3.0 Credits
Covers the effect of processing on foods emphasizing nutritional and chemical aspects. Includes synthetic foods, food additives, current food processing methods, nutrition policy, consumer dietary patterns, and food production trends.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

FDSC 560 Food Chemistry 3.0 Credits
Covers chemical and physical behavior of food constituents and application of physicochemical principles to processed food systems.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: NFS 215 [Min Grade: D] or NFS 400 [Min Grade: D] or BIO 311 [Min Grade: D] or BIO 610 [Min Grade: C]

FDSC 561 Food Analysis 3.0 Credits
Covers the application of chemical analysis techniques to food. Food composition analysis (lipids, proteins, carbohydrates) and measurements of chemical reactions in foods (browning, lipid oxidation, starch hydrolysis, protein denaturation) are studied. Also focused upon id the maintenance of food quality during processing and storage.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: NFS 216 [Min Grade: D] or NFS 404 [Min Grade: D] or BIO 610 [Min Grade: C]

FDSC 568 Functional Foods 3.0 Credits
This course covers a range of functional foods and food components, their health conferring benefits, mechanisms of actions, and possible applications in the food industry.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FDSC 506 [Min Grade: C]

FDSC 654 Microbiology & Chemistry of Food Safety II 3.0 Credits
Advanced study of chemical of food safety significance with emphasis on the effects of components normal to food. Risk assessment, regulations and control will be covered.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: FDSC 454 [Min Grade: D] or FDSC 554 [Min Grade: C]

FDSC 662 Taste and Odor 3.0 Credits
Discusses historical and current theories addressing the anatomy and mechanism of human chemical sensing systems (taste and odor perception and their receptor sites). Includes dietary, environmental, and physiological influences of the chemical senses. Describes functional methods of subjective or organoleptic testing involving human subjects (psychophysics) and provides laboratory experiments demonstrating practical application of selected techniques.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: NFS 215 [Min Grade: D] or NFS 400 [Min Grade: D] or BIO 610 [Min Grade: C]

FDSC 669 Readings in Food Science 3.0 Credits
Covers current research and its practical application in food production, processing storage, and preparation. Encourages individual investigation.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 2 times for 6 credits

FDSC 680 Special Topics in Food Science 1.0-12.0 Credit
Covers special topics of interest in food science. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

FDSC 890 Seminar in Food Science 1.0 Credit
Current topics in food science will be studied with presentations by invited speakers and students. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 3 times for 3 credits

FDSC 898 Independent Study in Food Science 1.0-12.0 Credit
Provides individual study or research in food science under faculty supervision. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

FDSC 997 Research in Food Science 1.0-12.0 Credit
Students consult with a faculty advisor to identify a suitable problem are in food science and develop and carry out appropriate methodology to address the problem. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

Hotel & Restaurant Management

Courses

HRM 501 Foundations of the Hospitality Industry 3.0 Credits
This is a gateway course to provide students of various backgrounds the information and conceptual tools needed to grasp the fundamentals of the global hospitality industry as understood in its widest sense. Students will become familiar with the production and distribution of hospitality products. Trends in the industry will also be discussed.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

HRM 505 Customer Service for Professionals 3.0 Credits
This course covers the principles of managing in a service environment with an emphasis on procedures and results that are necessary for all service organizations. Analysis, planning, and problem solving strategies will be examined to empower successful customer oriented employees along with consideration of factors that influence customer service organizations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 515 Destination and Resort Management 3.0 Credits
A study of destination and resort management from a global perspective including strategic planning and competitive analysis of domestic and international resort destinations. Students will study the various aspects of resort management in the context of high levels strategic planning that includes market research, market positioning, feasibility studies, and revenue forecasting for resort destinations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 520 Hospitality Management Information Systems 3.0 Credits
Covers the use of technology and computer information systems in the hospitality industry. The course emphasizes high level strategic planning for leveraging technology and information systems to gain competitive advantages and improve a business¿s position in the marketplace. Includes structured decision making in the acquisition and implementation of technology including feasibility analysis and financial forecasting.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 555 Hospitality Human Resource Management 3.0 Credits
This course will study the human resource function from a strategic and developmental standpoint within a variety of hospitality and tourism contexts.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 572 Gaming Information Systems 3.0 Credits
Covers the use of technology and computer information systems in the casino industry. The course emphasizes high level strategic planning for leveraging technology and information systems to gain competitive advantage and improve a casino¿s position in the marketplace. Includes structured decision making in the acquisition and implementation of technology including feasibility analysis and financial forecasting.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 520 [Min Grade: C]

HRM 575 Current Issues in Gaming 3.0 Credits
This course will examine current issues in the casino and gaming industry. An in-depth examination of trends, policies, and impacts on gaming operations with an emphasis on casino operations will be potential topics for discussion.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 595 Economics of Tourism 3.0 Credits
This course explores the economic issues that influence the tourism industry and examines the sociological dynamics shaping the tourism environment.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 610 The Global Tourism System 3.0 Credits
An in-depth investigation of the components of the global tourism system to provide the conceptual framework for students to understand the economic dynamics of tourism. The course will familiarize students with the major areas of production and distribution of hospitality products. Future trends in tourism will be examined.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 612 Tourism and Sustainability 3.0 Credits
Students in this course will examine limits to mass tourism and alternatives such as ecotourism, community-based-tourism pro-poor tourism, and their contributions to sustainable world development. Other topics include how environmental changes affect tourism and how tourism affects the environment and the role of tourism in economic development.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 614 Tourism Development 3.0 Credits
This course will provide an in-depth evaluation of the major issues in travel and hospitality development. It will review the relationships among development and tourism development, differences between attractions and products, defining target markets, elaborating development plans, destination management, and measuring success.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 616 Tourism Marketing and Branding 3.0 Credits
This course will cover the major issues related to the marketing of travel and tourism products according to the specific nature of the travel and tourism industry. The course will include strategic marketing, travel market analysis, and the major tools available for creating successful marketing and branding of travel and tourism products.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 650 Strategic Management & Leadership in Hospitality 3.0 Credits
This course covers the concepts of strategic management in the hospitality business environment and the role of strategic leadership practices. Strategic decision making principles will be examined to create competitive advantages for hospitality industry leaders and organizations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C] and PRST 503 [Min Grade: C]

HRM 670 Casino Financial Analysis 3.0 Credits
This course covers the unique aspects of analyzing the financial results of casino programs and product offerings including marketing promotion analysis, special even manifest analysis, player development, executive profit and loss, table game mix, and slot floor product and position analysis. Volume forecast methods will also be studied.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 520 [Min Grade: C]

HRM 672 Security and Risk Management 3.0 Credits
This course covers strategic issues in casino security including high-level planning and risk analysis. Students will complete an in-depth case study analysis of court cases in the casino and hospitality industry that can potentially have a significant impact on capital expenditures and operating strategies. Students will learn to analyze risk and make effective strategic decisions regarding loss prevention.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 572 [Min Grade: C]

HRM 674 Tribal Gaming Management 3.0 Credits
This course explores the topics of gaming, casino management, sovereignty, and other public policy issues. In addition, tribal casino management will be emphasized to examine the unique operational and developmental aspects of this type of gaming.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 501 [Min Grade: C]

HRM 676 Casino Marketing 3.0 Credits
This course covers the unique aspects of casino marketing including player loyalty programs, promotional strategies, customer relationship marketing, branding, database marketing, player development and junket programs. The course is taught from a global perspective with an emphasis on strategy and positioning in the marketplace.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: HRM 505 [Min Grade: C]

HRM 680 Special Topics in Hospitality Management 1.0-12.0 Credit
Covers special topics of interest in hospitality management. This course may be repeated.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

HRM 898 Independent Study in Hospitality Management 1.0-12.0 Credit
Provides individual study or research in hospitality management under faculty supervision. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits

HRM 997 Research Project in Hospitality Management 1.0-12.0 Credit
Students consult with a faculty advisor to identify a suitable problem area in hospitality management and develop and carry our appropriate methodology to address the problem. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits
Prerequisites: HRM 501 [Min Grade: C] and PRST 504 [Min Grade: C]

Property Management

Courses

PRMT 602 Residential Property Marketing 3.0 Credits
This course covers strategies to successfully market residential properties. Discussions include acquiring and retaining tenants, motivating renters, packaging amenities, selling techniques, advertising media, and online marketing. Students will review best practices advertising campaigns and analyze marketing plans from regional residential housing developments.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 603 Property Asset Management 3.0 Credits
This course focuses on increasing property values by creating strategies to maximize return by providing excellent customer service, designing systems to provide utilities in an effective manner, creating value-added services to enhance the tenants' experiences, and managing the day-to-day operations of properties effectively.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 610 Facilities Management 3.0 Credits
This course focuses on the strategic role property managers play in facilities management. Property managers must be aware of all operational issues and are active participants in making strategic facilities decisions including in-house or outsourcing services, service specifications, managing service providers, and creative method of addressing sustainable development issues.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 625 Property Financial Analysis & Strategies 3.0 Credits
This course focuses on the importance of financial analysis to the strategic decision-making process employed by property managers including cash flow, tax implications, and risks of various projects. Decision-making models, lease valuation, and sensitivity analysis are employed in real situation. Current marketing conditions are discussed including alternative financing choices, cost of funds, tax incentive development options, and capitalization rates.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 630 Rental Property Law 3.0 Credits
The focus of this course is the legal framework within which a property manager makes strategic decisions. Lease provisions for a variety of property types are analyzed and a significant portion of the course deals with Fair Housing Law, the Americans with Disabilities Act, HUD regulations, and state housing statutes. Strategies to reduce legal exposure are discussed. The course features major cases.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 640 Property Security Emergency & Risk Management 3.0 Credits
This course focuses on risk aversion strategies employed by property managers to protect tenants, employees, community members, and owners. The course includes analysis of best practice strategies featuring property developments with superior emergency planning systems, security systems, communication strategies, and environmental response plans. Students review the insurance strategy for a major property development and discuss state and federal laws.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 645 Property Management Technology Strategies 3.0 Credits
This course focuses on the use of technology to effectively manage and market property. Successful strategies employing technology to gain operating efficiencies, increase employee and tenant communications, optimize rent management, increase tenant retention, and maximize security systems are featured. Best practice examples of integrated technology stems are reviewed and students perform a technology audit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 650 Retail Property Marketing & Management 3.0 Credits
Explores strategies to market and manage retail properties. A variety of retail properties are analyzed such as shopping centers, malls, small strip centers, mixed-use properties, and retail entertainment destinations. Topics include tenant mix, advertising, promotion, leases, maintenance, technology integration, retail development and rehabilitation, and retail as an amenity for residential tenants.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 655 Affordable Housing Management 3.0 Credits
This course focuses on successful strategies to manage affordable housing. The major issues impacting development are discussed including HUD regulations, rental property law, development financing, green development concerns, and specialized amenities including childcare, assisted living facilities, and pharmacies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 660 Student Housing Mareketing & Management 3.0 Credits
This course focuses on successful strategies for marketing and managing student housing. The main variables influencing decisions are explored including federal and state laws, town-gown relations, emergency management, security and communications planning, advertising design and placement, rent management opportunities, and constraints, and awareness of student issues and current cases.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 665 Military Housing Mareketing & Management 3.0 Credits
Strategies to successfully market and manage military housing are the central focus of this course. Military housing requires specialized study in a variety of areas including federal laws, emergency management, security and communications, military regulations, Department of Defense initiatives and regulations, and specialized amenities especially childcare, family entertainment, and healthcare.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 670 Housing for Later Life 3.0 Credits
This course features strategies to successfully manage and market housing for later life. A range of housing choices is explored and emphasis is placed on specialized lifestyle activities, unique amenity wants and related health service needs of the tenants. Emphasis is placed on legal, operational, marketing, and financial issues. Private equity investment into nursing homes is discussed.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 675 Commercial Property Management 3.0 Credits
This course focuses on the strategic management of commercial property. A variety of commercial properties are featured including office buildings, medical office buildings, industrial properties, warehouses, and mixed-use corporate campuses. Operational issues are discussed and commercial property is analyzed as an investment including the development process.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 677 Commercial Property Leasing 3.0 Credits
This course covers leasing processes for office, retail and industrial properties. Students will evaluate preliminary documents that set the stage for rental agreements, including landlord lease packages, tenant requests for proposals and letters of intent. Relative bargaining positions of key stakeholders and model lease clauses resolving principal issues are evaluated.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRMT 680 Special Topics in PRMT 0.5-12.0 Credits
Covers special topics of interest in Property Management. This course can be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 18 times for 9 credits

PRMT 695 Capstone in Property Management I 3.0 Credits
This culminating course provides an overview of major issues facing property managers today and requires the completion of a comprehensive community analysis of property development. The research protocol and methods to be used in PMGT 696 are presented and students submit a research topic for approval.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 602 [Min Grade: C] and PRMT 603 [Min Grade: C] and PRMT 625 [Min Grade: C] and PRMT 630 [Min Grade: C] and PRMT 640 [Min Grade: C] and PRMT 645 [Min Grade: C] and REAL 572 [Min Grade: C]

PRMT 696 Capstone in Property Management II 3.0 Credits
This culminating experience requires the completion of a research project focusing on a topic relevant to today's property managers. The project will be completed in a systematic manner using research and management tools. Students demonstrate their abilities to conduct thorough research, analyze and interpret data, evaluate results, and make conclusions.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRMT 602 [Min Grade: C] and PRMT 603 [Min Grade: C] and PRMT 625 [Min Grade: C] and PRMT 630 [Min Grade: C] and PRMT 640 [Min Grade: C] and PRMT 645 [Min Grade: C] and PRMT 695 [Min Grade: C] and REAL 572 [Min Grade: C]

PRMT 697 Property Management Practicum 1.0-3.0 Credit
This course provides students an opportunity for experience in the field of property management. Students will secure their own relavent practicum placement. Work will be supervised by a professional with appropriate property management experience. Students will complete an ongoing project.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 3 times for 3 credits
Restrictions: Can enroll if major is PRMT.

PRMT 699 Independent Study in Property Management 1.0-6.0 Credit
Provides individual study or research in Property Management under faculty supervision. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 11 times for 12 credits
Restrictions: Can enroll if major is PRMT.

Project Management

Courses

PROJ 501 Introduction to Project Management 3.0 Credits
This course will prepare students to manage scheduling, supply management, project team recruiting, resource allocation, time/cost tradeoffs, risk assessment, task coordination, team-building, progress monitoring, and post-project assessment through a comprehensive overview of project management. Case studies are used to illustrate the principles and tools of project management as a process.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PROJ 502 Project Planning & Scheduling 3.0 Credits
This course will prepare students to master concepts in project planning, scheduling and control. Project scheduling methods are covered including: critical path systems, critical chain scheduling, statistical analysis, Program Evaluation Review Technique, linear resource leveling, and legal ramifications on contracted projects.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 510 Project Quality Management 3.0 Credits
Quality management is related to project management. Examines basic quality concepts and explores the three sub-processes of quality management: quality planning, quality assurance, and quality control as they relate to project management.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 515 Project Estimation & Cost Management 3.0 Credits
This course will provide an overview of project financial and economic principles involved in product and system development. It is intended to familiarize project managers with methods in project accounting, budgeting, cost estimation, financial management, design optimization, and economics.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 520 Project Risk Assessment & Management 3.0 Credits
Examines the risk factors throughout every phase of a project. Looks at the overall project planning process, explores the use of high-level risk assessment tools, and describes key ideas for project risk planning. Models for risk analysis, assessment, and classification are presented.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 525 E-Tools for Project Management 3.0 Credits
This course will examine the use of electronic tools as a means of creating a virtual workplace. Issues related to the use of the e-tools for collaboration and decision making for project management will be explored.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 530 Managing Multiple Projects 3.0 Credits
Examines the complex and simultaneous management principles and techniques required to manage multiple projects. Emphasis is placed on a theory and practice of project management that is rigorous and disciplined, yet flexible.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 535 International Project Management 3.0 Credits
Examines the uniqueness and adaptations of project management when operating in an international context. Details the investigation of cultural, legal, and regulatory environments as the context of international project management.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 540 Project Procurement Management 3.0 Credits
Examines role of procurement in project management including processes and activities needed to acquire products, services and results required to accomplish a project from outside the project organization. Planning, conducting administering and closing procurements are course components as are relevant legal and ethical issues, contract capacity, authority, public and private bidding processes and dispute resolution methods.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 603 Project Leadership and Teamwork 3.0 Credits
Examines project leadership skills required for building and maintaining successful high-performance project teams. Prepares project managers to facilitate teamwork through good management and wise leadership.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 645 Project Management Tools 3.0 Credits
Examines theories relating to project management software acceptance, use of project management tools, and how tools relate to project success. Develops in-depth skills in a widely-used project management software package, and provides exposure to other selected project management tools for successful collaboration in collocated and virtual project teams.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if program is MSC.
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 650 Project Stakeholder Management 3.0 Credits
Examines theories and processes required to identify the individuals, groups, organizations, and other stakeholders that could impact or be impacted by a project. Also covers analyzing stakeholder expectations and their influence on the project, and developing strategies for engaging project stakeholders in effective project decisions to ensure successful project outcomes.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Restrictions: Can enroll if program is MSC.
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 690 Special Topics in Project Management 0.5-12.0 Credits
Provides courses in topics of current interest to faculty and students. Topic for study must be approved in advance of registration by the program advisor, the supervising faculty, and the associate dean. May be repeated for credit if topic varies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated multiple times for credit
Prerequisites: PROJ 501 [Min Grade: C]

PROJ 695 Capstone Project in Project Management 3.0 Credits
Provides an opportunity for the student to successfully integrate knowledge and skills acquired during their master's program in project management. Students will evaluate the project management practices in an organization and create a report that identifies strengths and weaknesses in an organization and recommend strategies for improvement.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PROJ 502 [Min Grade: C] and PROJ 510 [Min Grade: C] and PROJ 515 [Min Grade: C] and PROJ 520 [Min Grade: C] and PROJ 525 [Min Grade: C] and PROJ 530 [Min Grade: C] and PROJ 535 [Min Grade: C] and PROJ 603 [Min Grade: C]

PROJ 699 Independent Study in Project Management 1.0-9.0 Credit
Provides individual study or research in project management under faculty supervision. Course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 9 times for 9 credits
Prerequisites: PROJ 501 [Min Grade: C]

Professional Studies

Courses

PRST 501 Communication for Professionals 3.0 Credits
This course covers applications of the communication discipline in professional settings. Students explore and assess the role of organizational, interpersonal, non-verbal, group, and employment communications in today's professional world. The main goal is to provide students with the tools necessary to become effective communicators in the workplace.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRST 503 Ethics for Professionals 3.0 Credits
This course will focus on the application of ethical principles to organizational systems and decision-making. Emphasis will be placed on how ethical principles affect and are applied to policy-making, leadership behavior, systems of communication, technology use, and systems of organization.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRST 504 Research Methods & Statistics 3.0 Credits
This course presents a systematic approach to managerial methods of conducting organizational research and analysis. Students will undergo the managerial research process of specifying the problem; translating the problem into specific research questions; designing the data collection and methodology; collecting, analyzing, and interpreting data; and reporting research results and recommendations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRST 512 Computing for Professionals 3.0 Credits
Uses Microsoft Office business application software and Statistical Package for the Social Sciences (SPSS) to challenge and support students in their efforts to sharpen and integrate their computer, critical-thinking, problem-solving, data analysis, and reporting skills to achieve competency that addresses the demand for information technology proficiency in the new economy.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRST 515 Program Evaluation 3.0 Credits
Measuring results in business is fairly straightforward. Measuring results in government and other non-profit organizations is not so precise. This course provides knowledge and skill required to apply the scientific method to the assessment of social programs (organized, goal-directed activities designed to address a social, humanistic, or other human-related problem).
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRST 603 Communicating in Virtual Teams 3.0 Credits
This course explores the roles of virtual teams and allows students to experience the opportunities and challenges associated with communicating in a virtual environment.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRST 612 Data Analysis and Interpretation 3.0 Credits
This course covers the use of a computerized statistical analysis tool to calculate parametric and non-parametric statistics. Students will use creative and critical thinking skills to interpret, communicate, and defend results.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: PRST 504 [Min Grade: C]

PRST 615 Program Evaluation 3.0 Credits
The course is designed to have students apply qualitative and quantitative methods to frame and implement an evaluation capable of being implemented in a broad range of for-profit and non-profit organizational settings, including those found in education, health care, government and private sector businesses. Students will study the purposes and models of program evaluation, roles of the evaluator and stakeholders, and address ethical issues associated with an evaluation. To gain practical experience with "continuous program improvement," students will design an evaluation of an existing program.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRST 640 Policy Analysis 3.0 Credits
The course analyzes the entire process of policy agenda-setting, initiation, decision-making, implementation, evaluation and assessment. Students will be equipped with tools to analyze and understand the entire process of policy formation in any public or private enterprise. The skills developed in the course can be used in many professional fields.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

PRST 690 Special Topics in Professional Studies 1.0-12.0 Credit
Covers special topics of interest in professional studies. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 18 times for 18 credits

PRST 699 Independent Study in Professional Studies 0.5-6.0 Credits
Provides individual study or research in professional studies under faculty supervision. This course may be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 12 times for 6 credits

Real Estate

Courses

REAL 568 Real Estate Development 3.0 Credits
This course will provide a comprehensive exploration of the development process for real estate development projects. Residential, multi-family, single family, apartments, office buildings, retail projects, industrial developments and the development process for each market segment.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

REAL 571 Advanced Real Estate Investment & Analysis 3.0 Credits
This course will explore the market analysis and feasibility methods in framing and supporting investment decision making for real estate projects. Detailed market analysis strategies will be employed and case studies will be analyzed to deepen the student's knowledge and judgment for investment decision making.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

REAL 572 Advanced Market Research & Analysis 3.0 Credits
This course will explore the market research methods used to understand and dissect geographical and demographical real estate markets. Detailed market research strategies will be employed and case studies will be analyzed to deepen the student's knowledge of market research techniques and resources.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

REAL 573 Sales & Marketing of Real Estate 3.0 Credits
This course will explore the strategies for successful marketing of real property bases on market research and development strategies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

REAL 574 Real Estate Economics in Urban Markets 3.0 Credits
This course will offer a unique and detailed perspective on urban real estate development and the special sub-markets in which they exist. Attention will be given to the characteristics of the particular economic factors relevant in urban real estate markets.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: REAL 568 [Min Grade: C]

REAL 575 Real Estate Finance 3.0 Credits
This course will focus on the options and implications of different financing methods with the unique tradeoffs associated with each considered.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

REAL 576 Real Estate Valuation & Analysis 3.0 Credits
This course will introduce the concepts of real estate valuation, appraisals, and the relationship of these to financing and cash requirements.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

REAL 577 Legal Issues in Real Estate Development 3.0 Credits
This course will explore the unique legal requirements of the real estate business including property rights, involuntary transfers, easements, private restrictions, public restrictions, zoning and land development laws.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

Sport Management

Courses

SMT 601 Sports Industry Management 3.0 Credits
This course provides detailed overview of the sports industry and its management and business practices. Students will study organizational theory, human resources, decision making, policy development, planning, governance and the management functions necessary to provide them with the appropriate skills and knowledge for the effective management of sport organizations.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 602 Sport Law & Risk Management 3.0 Credits
Course overviews basic issues and strategies surrounding sport law and risk management issues in athletics. Students will be introduced to types of legal obligations and liability exposure in the sport business, along with the risk management tools available to minimize risk. Legal issues and management challenges are also explored.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 603 Sports Marketing and PR 3.0 Credits
The course provides a study of marketing, sponsorship and public relations concepts with an application to the sports industry. Students will cover topics including licensing, merchandising, sponsorships, ticketing, consumer behavior, market segmentation and pricing. The role of research in marketing and practices of mainstream marketing will also be examined.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 601 [Min Grade: C]

SMT 604 Sport Media & Technology 3.0 Credits
An analysis of the sport media's changing landscape and the role is plays in political, social and technological climates. Emphasis on professional and intercollegiate sports and the implications of simultaneous production and consumption. Course will examine new information technologies, commercial pressures in sport media and global sport media expansion.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 601 [Min Grade: C]

SMT 605 Economic Issues in Sport 3.0 Credits
Students explore general fiscal and economic principles as they apply to public and private sport organizations. Economic analysis is utilized to study economic impact, media rights, ticket sales, concessions plus the effects of free agency, player salaries, revenue sharing, salary caps and government subsidization of stadiums.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 601 [Min Grade: C] and SMT 602 [Min Grade: C]

SMT 606 Contemporary Issues in Sport 3.0 Credits
The purpose of this course is to expand the student?s understanding of issues prevalent in the sports industry. Discussions will cover topics including drugs, violence, religion, the media and globalization. Students will develop an awareness of alternate perspectives and examine in detail current problems while analyzing possible solutions.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 601 [Min Grade: C] and SMT 602 [Min Grade: C]

SMT 607 Sport Budgets & Fiscal Practices 3.0 Credits
Basic theory in accounting and finance applied to managerial control of sport organizations. Includes forms of ownership, taxation, financial analysis, capital budgeting, and economic impact studies.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 601 [Min Grade: C]

SMT 608 Sport Information & Public Relations 3.0 Credits
Course is an overview of the discipline of sports information/public relations and its role in the field of sport management. Course will cover a wide variety of skill sets and roles necessary to succeed in this continually evolving discipline. New media issues and procedures will be covered.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 609 Sports Ticket Sales & Strategies 3.0 Credits
Course will examine changing environment of ticket and operation sales in the sport industry. Course will expose students to the standards, practices and strategies that can be applied to the multitude of areas that ticketing touches within the sports industry.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 610 Seminar on Sports Research 1.0 Credit
This course will consist of an integration of real world issues with the rigor of academic research. It will involve a series of lectures by leaders in the field of sports management, which will then stimulate further research and discussion by the students in a seminar setting.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 611 Corporate Sponsorship Sales & Strategies in Sport 3.0 Credits
Course will examine marketing strategy and techniques used by industry professionals to increase revenues for sports properties. Students will gain an understanding of sponsorship sales terminology, cold calling and prospecting techniques, marketing proposal presentation guidelines and relationship building strategies to increase overall sales.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 601 [Min Grade: C]

SMT 612 Development & Fundraising Strategies in Sport 3.0 Credits
Course will examine skills, strategies and techniques needed for successful annual and major gift solicitation in the field of athletic development. Topics include understanding annual fund and major gift fundraising; examining booster club organization structure, benefits; priority seating programs and importance of donor research in the fundraising process.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 601 [Min Grade: C]

SMT 621 Leadership in Sport Management 3.0 Credits
Students will discuss the process of leadership and leadership development in sports organizations. Leadership styles, qualities, philosophies and the ability to adapt to different situations are addressed. Information on recruiting, training, supervising and evaluating personnel are examined as are current sporting issues and their impact on sport leadership.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 622 Labor Relations & Collective Bargaining in Sport 3.0 Credits
Course examines various aspects of professional sports including the unique office of the league commissioner, the antitrust and labor law dimensions of the player-labor market and the peculiar institution of the player agent in a unionized and collective bargained industry.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 602 [Min Grade: C]

SMT 623 Sports Facility Management 3.0 Credits
The course will encompass the range of sport facilities including arenas, stadiums, athletic tracks, swimming pools and golf courses. Students will learn the skills required to manage these facilities and the main components of facility management, including budgeting, scheduling, organizing and maintenance.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 601 [Min Grade: C] and SMT 604 [Min Grade: C]

SMT 625 Sports Promotion and Sales 3.0 Credits
Promotions and sales within the context of sport management. This provides a comprehensive study of promotions and marketing practices in the industry. Analysis of sport sponsorship, retention strategies and evaluation methods, plus fundraising and promotion of sports services and products to the sports consumer.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 603 [Min Grade: C]

SMT 626 Globalization of Sport 3.0 Credits
An analysis of the impact of globalization on the Sport Industry. Students will be introduced to managerial, human resource and cultural differences that impinge upon the sports industry. An oversight of the different governance structures employed throughout the industry overseas will also be examined.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 606 [Min Grade: C]

SMT 627 Sports Tournaments & Events 3.0 Credits
The organizing, planning and running of sporting events is crucial to any sport manager at any level. Issues of staffing, volunteers, location, security, medical and risk management considerations are just a number of areas that this course will cover. Students will be expected to organize and run their own sporting event.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 628 Coaching and Management 3.0 Credits
Through this course, students will gain a detailed understanding of coaching at the school, college and professional level. The management and organizational structures, coaching theories, periodization of training and issues pertinent to coaching including drugs, overtraining, ethical considerations and eating disorders will be addressed.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 629 Managing Coaches & Teams 3.0 Credits
Course will include setting performance goals in coaching, the various roles of the coach, ethical conduct in coaching, coach-athlete compatibility, burnout, personality of the coach and coaching youth sports. Emphasis will be placed on how administrators can best manage coaches for continued athletic program success.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 630 Sports Industry Practicum 3.0 Credits
The practicum is designed to develop greater breadth and depth of student's understanding and experience within the industry. The practical application of the knowledge and skill acquired in classes will help students to extend their expertise by working in a sport management related organization.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 633 Sport Tourism Strategies 3.0 Credits
Course will examine sport tourism as a marketing strategy for cities, sport tourist consumer behaviors, the interrelationships of businesses involved in sport tourism and the economic, environmental and social-cultural impact of sport tourism. Other course topics include event bidding, facility and financing.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 601 [Min Grade: C] or HRM 501 [Min Grade: C]

SMT 635 Sport Facilities & Event Management 3.0 Credits
Course is designed to provide learning experience in managing sports facility operations, planning new sports facilities and renovating and maintaining existing facilities. Course also provides student exposure to comprehensive event planning and management for sport and special events.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit

SMT 640 Consumer Behavior in Sport 3.0 Credits
Course will examine consumer behavior in the sport industry and its impact on fan retention and revenues. Students will examine customer services philosophies and techniques used by successful companies and sport organizations to improve the overall experience of consumers. Students will conduct research to measure fan and sponsor experience.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 601 [Min Grade: C]

SMT 680 Independent Study 0.5-12.0 Credits
Provides supervised study that allows students to explore additional sport management topics of their choosing. May be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 3 times for 12 credits
Restrictions: Can enroll if major is SMT.
Prerequisites: SMT 601 [Min Grade: C]

SMT 690 Special Topics 0.5-6.0 Credits
This course will cover special topics of interest to students in the sport management major. May be repeated for credit.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Can be repeated 4 times for 12 credits
Restrictions: Can enroll if major is SMT.
Prerequisites: SMT 601 [Min Grade: C]

SMT 698 Research Design & Techniques in Sport 3.0 Credits
An examination of research designs, methodology and techniques used in developing the research project or thesis. Historical, empirical and experimental methods will be discussed plus skills related to writing reviews and critiques of literature. Students will learn to design an original study and begin to develop the outline for their final Masters work.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 603 [Min Grade: C] and SMT 604 [Min Grade: C] and SMT 605 [Min Grade: C] and SMT 606 [Min Grade: C]

SMT 699 Project/Research Thesis 3.0 Credits
The course requires the preparation of a substantial research and writing project/research thesis planned and completed under the guidance of a graduate faculty advisor. It is the culminating work of the Masters program and hence is expected to include research design, organization, analysis, evaluation, literature review, plus the student?s conclusions pertaining to the research findings.
College/Department: Goodwin School of Technology Professional Studies
Repeat Status: Not repeatable for credit
Prerequisites: SMT 698 [Min Grade: C]

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