Drexel University
Catalog 2009/2010

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The Goodwin College of Professional Studies
School of Technology and Professional Studies

Goodwin's School of Technology and Professional Studies programs prepare adult learners to successfully navigate within and contribute to this multidisciplinary workplace.

Requirements for the School of Technology & Professional Studies degrees are provided by individual programs according to the requirements for each major, which are set forth in subsequent pages. 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.

Writing-Intensive Course Requirements
In order to graduate, all students beginning with the entering class of 2002/01 (fall, 2002) must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid "clustering" these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog indicates that this course can fulfill a writing-intensive requirement. Departments will designate specific sections of such courses as writing-intensive. Sections of writing-intensive courses are not indicated in this catalog. Students should check the section comments in Banner when registering. Students scheduling their courses in Banner can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term. For more information on writing-intensive courses, see the Drexel University Writing Program's Writing-Intensive Course page.

The Richard C. Goodwin College of Professional Studies

The College offers several degree completion options to students with busy schedules or wishing to complete previous studies.

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 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:

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

For more information, visit the Drexel at BCC web site.

The Goodwin College of Professional Studies

Facilities
The College of Professional Studies is housed in One Drexel Plaza, 3001 Market Street, across from the 30th Street Train Station in Philadelphia. This facility, designed to provide convenient and effective access for students, includes one-stop student services including admissions, registration, financial aid, and academic advising. 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, 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.

Architecture - Part-time Evening Program

Part-time Evening Curriculum
The program, offered entirely in the evening, leads to a Bachelor of Architecture degree.The program is structured into three areas of study: the studio/thesis sequence; required and elective architectural coursework; and required university coursework.

Calendar
The course of study usually takes seven years to complete, but students with transfer credits in studio design can accelerate their program. Students are expected to supplement their academic work through full-time employment in architectural offices.The studio courses and most required professional courses are offered in sequences during the fall, winter and spring quarters. Elective courses and required university courses are available during the summer quarter.

Transfer Credits
It is possible to transfer into the architecture program at Drexel. Transfer credit for comparable courses completed at accredited institutions will be awarded if grades of C or higher have been earned. Placement and credit in studio design courses will depend on a portfolio review of the students' academic design projects. In general advanced placement in design is awarded when students have successfully completed comparable studios in B.Arch. programs or in recognized pre-architecture transfer programs.

Advisement and Departmental Regulations
Please refer to the department's General Counseling Guidelines to the Curriculum for a complete description of all departmental regulations and procedures, and for advice in selecting, sequencing, and scheduling coursework. These guidelines are available at the Office of the Department of Architecture at 3201 Arch Street.

Accreditation
The Bachelor of Architecture degree program at Drexel is accredited by the National Architectural Accrediting Board (NAAB).

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a six-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards.

Master's degree programs may consist of a preprofessional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the preprofessional degree is not, by itself, recognized as an accredited degree.

Architecture vs Architectural Engineering
Because Drexel university offers two programs with "architecture" in their titles, it is useful to point out the significant differences between them:

Architects design buildings to meet people's spatial, organizational, and aesthetic

needs; they also coordinate the building design process. After earning a Bachelor of Architecture Degree, graduates become registered architects by completing the required work experience and state licensing examinations.

Architectural Engineers specialize in the design of engineering systems within buildings. Architectural Engineers earn Bachelor of Science Degrees and become professional engineers with the required experience and state examinations. Students whose interests are focused on the technological and engineering aspects of buildings should review Drexel's major in Architectural Engineering offered by the College of Engineering.

Architecture: Part-Time Evening Program

Bachelor of Architecture Degree: 221.0 credits.
Degree requirements (incoming students, 2009/2010)

General education 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
MATH 181	**Mathematical Analysis I**	3.0
MATH 182	**Mathematical Analysis II**	3.0
MATH 183	**Mathematical Analysis III**	3.0
PHYS 182	**Applied Physics I**	3.0
PHYS 183	**Applied Physics II**	3.0
PHYS 184	**Applied Physics III**	3.0
	Humanities electives*	9.0
	Social science electives	9.0
	Free electives	24.0

*One humanities elective should be a PHIL course addressing Ethics for Architects.

Departmental requirements		Credits
ARCH 111	**Studio 1-1**	3.0
ARCH 112	**Studio 1-2**	3.0
ARCH 113	**Studio 1-3**	3.0
ARCH 121	**Studio 2-1**	3.0
ARCH 122	**Studio 2-2**	3.0
ARCH 123	**Studio 2-3**	3.0
ARCH 231	**Studio 3-1***	3.0
ARCH 232	**Studio 3-2**	3.0
ARCH 233	**Studio 3-3**	3.0
ARCH 241	**Studio 4-1**	4.0
ARCH 242	**Studio 4-2**	4.0
ARCH 243	**Studio 4-3**	4.0
ARCH 351	**Studio 5-1**	4.0
ARCH 352	**Studio 5-2**	4.0
ARCH 353	**Studio 5-3**	4.0
ARCH 361	**Studio 6-1***	4.0
ARCH 362	**Studio 6-2**	4.0
ARCH 363	**Studio 6-3**	4.0
ARCH 496	**Thesis I**	8.0
ARCH 497	**Thesis II**	8.0
ARCH 498	**Thesis III**	8.0

*Prior to taking this course student must meet the program's minimum studio advancement requirements. See the program's Advising Guidelines for more details.

Required professional courses		Credits
ARCH 14I	**Architecture and Society I**	3.0

ARCH 142 WI	**Architecture and Society II**	3.0
ARCH 143 WI	**Architecture and Society III**	3.0
ARCH 150	**Introduction to CADD I**	4.0
ARCH 153	**Introduction to CADD II**	4.0
ARCH 155	**Basic Architectural Drawing**	3.0
ARCH 156	**Graphic Communication I**	3.0
ARCH 161	**Architectural Construction**	3.0
ARCH 261	**Environmental Systems I**	3.0
ARCH 262	**Environmental Systems II**	3.0
ARCH 263	**Environmental Systems III**	3.0
CIVE 261	**Materials and Structural Behavior I**	3.0
CIVE 262	**Materials and Structural Behavior II**	3.0
CIVE 263	**Materials and Structural Behavior III**	3.0

History and theory electives		**12.0 Credits**
Students select a minimum of one of the following courses		
ARCH 343	**Theories of Architecture III**	3.0
ARCH 344	**History of the Modern Movement I**	3.0
ARCH 345	**History of the Modern Movement II**	3.0

Students select additional history and theory electives to fulfill the requirement of 12.0 credits total.

History and theory electives		**12.0 Credits**
ARCH 341	**Theories of Architecture I**	3.0
ARCH 342	**Theories of Architecture II**	3.0
ARCH 346	**History of Philadelphia Architecture**	3.0
ARCH 347	**Summer Study Abroad (6 credits)**	6.0
ARCH 348	**Studies in Vernacular Architecture**	3.0
ARCH 421 WI	**Environmental Psychology and Design Theory**	3.0
ARCH 441	**Urban Design Seminar I**	3.0
ARCH 442	**Urban Design Seminar II**	3.0
ARCH 499	**Special Topics in Architecture**	3.0

Professional electives		**Credits**
Any three of the following courses*		
ARCH 157	**Graphic Communication II**	3.0
ARCH 431	**Architectural Programming**	3.0
ARCH 432	**The Development Process**	3.0
ARCH 435	**Management Seminar I**	3.0
ARCH 436	**Management Seminar II**	3.0
ARCH 451	**Advanced Drawing**	3.0
ARCH 455	**Computer Applications in Architecture I**	3.0
ARCH 456	**Computer Applications in Architecture II**	3.0
ARCH 461	**Technology Seminar I**	3.0
ARCH 462	**Technology Seminar II**	3.0
ARCH 465	**Energy and Architecture**	3.0
ARCH 499	**Special Topics in Architecture**	3.0
CIVE 400	**Structural Design I**	3.0
CIVE 401	**Structural Design II**	3.0
CIVE 402	**Structural Design III**	3.0
CIVE 464	**Acoustics and Noise Control in Buildings I**	3.0
CMGT 461	**Construction Management I**	3.0
CMGT 463	**Value Engineering II**	3.0
CMGT 363	**Estimating I**	3.0

* History and theory electives taken beyond the 12 credits required can also be used to satisfy professional elective requirements.

Writing-Intensive Course Requirements
In order to graduate, all students beginning with the entering class of 2002/01 (fall, 2002) must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid “clustering” these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

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Architecture

Bachelor of Architecture Degree: 221.0 credits

Part-time Evening Program

Recommended Plan of Study:
This curriculum format is adjustable to each student's academic situation. Transfer credit evaluation, prior architectural experience, and other considerations may restructure the student's yearly program schedul**e.**

First year

Fall Quarter		**Credits**
ARCH 111	**Studio 1-1**	3.0
ARCH 155	**Basic Architectural Drawing**	3.0
ENGL 101	**Expository Writing and Reading**	3.0
Winter Quarter		
ARCH 112	**Studio 1-2**	3.0
ARCH 156	**Graphic Communication I**	3.0
ENGL 102	**Persuasive Writing and Reading**	3.0
Spring Quarter		
ARCH 113	**Studio 1-3**	3.0
ARCH 161	**Architectural Construction**	3.0
ENGL 103	**Techniques of Analysis Evaluation**	3.0
Summer Quarter		
ARCH 150	**Introduction to CADD I**	4.0
	Humanities elective	3.0
	Total credits	34.0

Second year

Fall Quarter		**Credits**
ARCH 121	**Studio 2-1**	3.0
ARCH 14I WI	**Architecture and Society I**	3.0
MATH 181	**Mathematical Analysis I**	3.0
Winter Quarter		
ARCH 122	**Studio 2-2**	3.0
ARCH 142 WI	**Architecture and Society II**	3.0
MATH 183	**Mathematical Analysis II**	3.0
Spring Quarter		
ARCH 123	**Studio 2-3**	3.0
ARCH 143 WI	**Architecture and Society III**	3.0
MATH 182	**Mathematical Analysis III**	3.0
Summer Quarter		
ARCH 153	**Introduction to CADD II**	4.0
	Social science elective	3.0
	Total credits	34.0

Third year

Fall Quarter		Credits
ARCH 231	**Studio 3-1***	3.0
PHYS 182	**Applied Physics I**	3.0
	Social science elective	3.0
Winter Quarter		
ARCH 232	**Studio 3-2**	3.0
PHYS 183	**Applied Physics II**	3.0
	Humanities elective	3.0
Spring Quarter		
ARCH 233	**Studio 3-3**	3.0
PHYS 184	**Applied Physics III**	3.0
	Humanities elective	3.0
*Prior to taking this course student must meet program's minimum studio advancement requirements. See the program'ss Advising Guidelines for more details.		
Summer Quarter		
	History/Theory elective	3.0
	Social science elective	3.0
	Free elective	3.0
	Total credits	27.0

Fourth year

Fall Quarter		Credits
ARCH 241	**Studio 4-1**	4.0
CIVE 261	**Materials and Structural Behavior I**	3.0
Winter Quarter		
ARCH 242	**Studio 4-2**	4.0
CIVE 262	**Materials and Structural Behavior II**	3.0
Spring Quarter		
ARCH 243	**Studio 4-3**	4.0
CIVE 263	**Materials and Structural Behavior III**	3.0
Summer Quarter		
	History/Theory elective	3.0
	Professional elective	3.0
	Total credits	27.0

Fifth year

Fall Quarter		Credits
ARCH 351	**Studio 5-1**	4.0
ARCH 261	**Environmental Systems I**	3.0
Winter Quarter		
ARCH 352	**Studio 5-2**	4.0
ARCH 262	**Environmental Systems II**	3.0
Spring Quarter		
ARCH 353	**Studio 5-3**	4.0
ARCH 263	**Environmental Systems III**	3.0
Summer Quarter		
	History/Theory elective	3.0
	Professional elective	3.0
	Free electives	6.0
	Total credits	33.0

Sixth year

Fall Quarter		Credits
ARCH 361	**Studio 6-1***	4.0

	Free elective	3.0
Winter Quarter		
ARCH 362	**Studio 6-2**	4.0
	Social science elective	3.0
Spring Quarter		
ARCH 363	**Studio 6-3**	4.0
PHIL	**Ethics for Architects**	3.0
Summer Quarter		
	Professional elective	3.0
	Free elective	3.0
	Total credits	27.0

*Prior to taking this course student must meet the program's minimum studio advancement requirements. See the programs's Advising Guidelines web page page for more details.

Seventh year (Thesis)

Fall Quarter		**Credits**
ARCH 496	**Thesis I**	8.0
	History/Theory elective	3.0
Winter Quarter		
ARCH 497	**Thesis II**	8.0
	Free elective	3.0
Spring Quarter		
ARCH 498	**Thesis III**	8.0
	Total credits	33.0

Applied Engineering Technology

The Bachelor of Science (BS) degree in Applied Engineering Technology provides an integrated educational experience directed toward the development to apply 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 three available concentrations, namely electrical, industrial, or mechanical engineering technology. These concentrations consist of core fundamental courses, technical electives, free electives, and a three-term senior design project reflecting industrial practices.

The AET 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 AET 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.

Applied 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.

For additional information, please visit the Applied Engineering Technology web page.

Applied Engineering Technology

Transfer Articulation Agreements
The Goodwin College of Professional Studies has transfer articulation agreements with Delaware County Community College (DCCC), Bulington 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 Applied 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
610-359-5050
admiss@dccc.edu

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

Additional details about these programs can be found on the Goodwin College of Professional Studies Dual Program web page.

Applied Engineering Technology
Electrical Engineering Technology Concentration

Bachelor of Science Degree: 187.5 credits
Degree requirements (incoming students, 2009/2010)

Humanities and social sciences requirements		**34.0 Credits**
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 111	**Introduction to Corporate Communication**	3.0
COM 230	**Principles of Speech**	3.0
ECON 201	**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		**13.5 Credits**
CHEM 111	**General Chemistry I**	4.0
CHEM 113	**Chemistry Laboratory I**	1.5
PHYS 103	**General Physics I**	4.0
PHYS 104	**General Physics II**	4.0

Mathematics requirements		**15.0 Credits**
MATH 110	**Precalculus**	3.0
MATH 121	**Calculus and Analytic Geometry I**	4.0
MATH 122	**Calculus and Analytic Geometry II**	4.0
STAT 201	**Statistics I**	4.0

Applied Engineering Technical Core		**62.0 Credits**
EET 201	**Circuit Analysis I**	4.0
EET 202	**Circuit Analysis II**	4.0
EET 203	**Non-Destructive Evaluation of Materials**	4.0
EET 204	**Introduction to Nanotechnology**	4.0
EET 205	**Digital Electronics with Laboratory**	4.0
EET 311	**Modeling of Engineering Systems**	4.0
EET 319	**Programmable Logic Controllers**	4.0
EET 401	**Applied Micro-controllers**	3.0
MET 100	**Graphical Communication**	3.0
MET 101	**Manufacturing Materials**	4.0
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 Lab**	3.0

INDE 240	**Technology Economics**	3.0
INDE 370	**Industrial Project Management**	3.0

Electrical Engineering Technology Concentration requirements		**26.0 Credits**
EET 206	**Analog Electronics I**	4.0
EET 313	**Signals and Systems I**	4.0
EET 317	**Analog Electronics II**	4.0
EET 322	**Energy Conversion**	4.0
EET 323	**Electrical Systems Design**	3.0
EET 324	**Power Electronics**	4.0
EET 325	**Microprocessors**	3.0

EET Technical electives **6.0 Credits**

Students select 6.0 additional credits from any EET, MET, MHT or INDE courses not already required.

Capstone course requirements		**9.0 Credits**
MET 421	**Project Design I**	3.0
MET 422	**Project Design II**	3.0
MET 423	**Project Design III**	3.0

Miscellaneous		**8.0 Credits**
CS 161	**Introduction to Computing**	3.0
EET 102	**Introduction to Applied Engineering Technology**	3.0
UNIV 101	**The Drexel Experience**	2.0

Free electives **13.0 Credits**

Recommended Plan Of Study

BS Applied Engineering Technology

5 YR UG Co-op Concentration /Electrical Engineering Tech.

Term 1		Credits
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
EET 102	Introduction to Applied Engineering Technology	3.0
ENGL 101	Expository Writing and Reading	3.0
MATH 110	Precalculus	3.0
PHYS 103	General Physics I	4.0
UNIV 101	The Drexel Experience	1.0
	Term Credits	*19.5*

Term 2		Credits
ENGL 102	Persuasive Writing and Reading	3.0
MATH 121	Calculus I	4.0
MET 100	Graphical Communication	3.0
PHYS 104	General Physics II	4.0
UNIV 101	The Drexel Experience	1.0
	Term Credits	*15.0*

Term 3		Credits
CS 161	Introduction to Computing	3.0
EET 201	Circuit Analysis I	4.0
ENGL 103	Analytical Writing and Reading	3.0
MATH 122	Calculus II	4.0
MET 101	Manufacturing Materials	4.0
	Term Credits	*18.0*

Term 4		Credits
COM 111	Introduction to Corporate Communication	3.0
EET 202	Circuit Analysis II	4.0
EET 205	Digital Electronics with Laboratory	4.0
MHT 226	Measurement Lab	3.0
STAT 201	Business Statistics I	4.0
	Term Credits	*18.0*

Term 5		Credits
EET 203	Non-Destructive Evaluation of Materials	4.0
EET 204	Introduction to Nanotechnology	3.0
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		Credits
COM 230	Techniques of Speaking	3.0
ECON 201	Economics I	4.0
EET 311	Modeling of Engineering Systems	4.0
EET 319	Programmable Logic Controllers	4.0
MET 213	Applied Mechanics	4.0
	Term Credits	*19.0*

Term 7		Credits
EET 401	Applied Micro-controllers	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		Credits
EET 206	Analog Electronics I	4.0
EET 322	Energy Conversion	4.0
EET 325	Microprocessors	3.0
	Free elective	3.0
	Term Credits	*14.0*

Term 9		Credits
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		Credits
EET 324	Power Electronics	4.0
MET 421	Senior Design Project I	3.0
	Free elective	4.0
	Liberal studies elective	3.0
	Term Credits	*14.0*

Term 11		Credits
MET 422	Senior Design Project II	3.0
	EET technical elective (See degree requirements for options)	3.0
	Free elective	3.0
	Liberal studies elective	3.0
	Term Credits	*12.0*

Term 12		Credits
MET 423	Senior Design Project III	3.0
	EET technical elective (See degree requirements for options)	3.0
	Free elective	4.0
	Liberal studies elective	3.0
	Term Credits	*13.0*
	Total Credits (minimum)	187.5

Applied Engineering Technology
Mechanical Engineering Technology Concentration

Bachelor of Science Degree: 187.5 credits
Degree requirements (incoming students, 2009/2010)

Humanities and social sciences requirements		**34.0 Credits**
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 111	**Introduction to Corporate Communication**	3.0
COM 230	**Principles of Speech**	3.0
ECON 201	**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		**13.5 Credits**
CHEM 111	**General Chemistry I**	4.0
CHEM 113	**Chemistry Laboratory I**	1.5
PHYS 103	**General Physics I**	4.0
PHYS 104	**General Physics II**	4.0

Mathematics requirements		**15.0 Credits**
MATH 110	**Precalculus**	3.0
MATH 121	**Calculus and Analytic Geometry I**	4.0
MATH 122	**Calculus and Analytic Geometry II**	4.0
STAT 201	**Statistics I**	4.0

Applied Engineering Technical Core		**62.0 Credits**
EET 201	**Circuit Analysis I**	4.0
EET 202	**Circuit Analysis II**	4.0
EET 203	**Non-Destructive Evaluation of Materials**	4.0
EET 204	**Introduction to Nanotechnology**	4.0
EET 205	**Digital Electronics with Laboratory**	4.0
EET 311	**Modeling of Engineering Systems**	4.0
EET 319	**Programmable Logic Controllers**	4.0
EET 401	**Applied Micro-controllers**	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 204	**Fluid Power**	3.0
MET 213	**Applied Mechanics**	4.0
MHT 205	**Thermodynamics I**	3.0
MHT 226	**Measurement Lab**	3.0

INDE 240	**Technology Economics**	3.0
INDE 370	**Industrial Project Management**	3.0

Mechanical Engineering Technology Concentration requirements		**26.0 Credits**
MET 316	**Computer Numerical Control**	3.0
MET 407	**Manufacturing Processes**	3.0
MET 408	**Manufacturing Information Management**	3.0
MHT 301	**Fluid Mechanics I**	3.0
MHT 314	**Thermo and Heath Transfer Laboratory**	3.0
MHT 401	**Mechanical Design I**	4.0

MHT Technical electives **6.0 Credits**

Students select 6.0 additional credits from any EET, MET, MHT or INDE courses not already required.

Capstone course requirements		**9.0 Credits**
MET 421	**Project Design I**	3.0
MET 422	**Project Design II**	3.0
MET 423	**Project Design III**	3.0

Miscellaneous		**8.0 Credits**
CS 161	**Introduction to Computing**	3.0
EET 102	**Introduction to AET**	3.0
UNIV 101	**The Drexel Experience**	2.0

Free electives **14.0 Credits**

Recommended Plan Of Study

BS Applied Engineering Technology

5 YR UG Co-op Concentration /Mechanical Engineering Tech.

Term 1		Credits
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
EET 102	Introduction to Applied Engineering Technology	3.0
ENGL 101	Expository Writing and Reading	3.0
MATH 110	Precalculus	3.0
PHYS 103	General Physics I	4.0
UNIV 101	The Drexel Experience	1.0
	Term Credits	*19.5*

Term 2		Credits
ENGL 102	Persuasive Writing and Reading	3.0
MATH 121	Calculus I	4.0
MET 100	Graphical Communication	3.0
PHYS 104	General Physics II	4.0
UNIV 101	The Drexel Experience	1.0
	Term Credits	*15.0*

Term 3		Credits
CS 161	Introduction to Computing	3.0
EET 201	Circuit Analysis I	4.0
ENGL 103	Analytical Writing and Reading	3.0
MATH 122	Calculus II	4.0
MET 101	Manufacturing Materials	4.0
	Term Credits	*18.0*

Term 4		Credits
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 Lab	3.0
STAT 201	Business Statistics I	4.0
	Term Credits	*18.0*

Term 5		Credits
EET 203	Non-Destructive Evaluation of Materials	4.0
EET 204	Introduction to Nanotechnology	3.0
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		Credits
COM 230	Techniques of Speaking	3.0
ECON 201	Economics I	4.0
EET 311	Modeling of Engineering Systems	4.0
EET 319	Programmable Logic Controllers	4.0
MET 213	Applied Mechanics	4.0
	Term Credits	*19.0*

Term 7		Credits
EET 401	Applied Micro-controllers	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		Credits
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		Credits
INDE 370	Industrial Project Management	3.0
MET 407	Manufacturing Processes	3.0
MHT 314	Thermo and Heat Transfer Lab	3.0
MHT 401	Mechanical Design I	4.0
	Term Credits	*13.0*

Term 10		Credits
MET 421	Senior Design Project I	3.0
	Free electives	7.0
	Liberal studies elective	3.0
	Term Credits	*13.0*

Term 11		Credits
MET 422	Senior Design Project II	3.0
	Free elective	4.0
	Liberal studies elective	3.0
	MHT technical elective (See degree requirements for options)	3.0
	Term Credits	*13.0*

Term 12		Credits
MET 423	Senior Design Project III	3.0
	Free elective	4.0
	Liberal studies elective	3.0
	MHT technical elective (See degree requirements for options)	3.0
	Term Credits	*13.0*

	Total Credits (minimum)	187.5

Applied Engineering Technology
Industrial Engineering Technology Concentration

Bachelor of Science Degree: 187.5 credits
Degree requirements (incoming students, 2009/2010)

Humanities and social sciences requirements			**34.0 Credits**
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 111	**Introduction to Corporate Communication**	3.0	
COM 230	**Principles of Speech**	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			**13.5 Credits**
CHEM 111	**General Chemistry I**	4.0	
CHEM 113	**Chemistry Laboratory I**	1.5	
PHYS 103	**General Physics I**	4.0	
PHYS 104	**General Physics II**	4.0	

Mathematics requirements			**15.0 Credits**
MATH 110	**Precalculus**	3.0	
MATH 121	**Calculus and Analytic Geometry I**	4.0	
MATH 122	**Calculus and Analytic Geometry II**	4.0	
STAT 201	**Statistics I**	4.0	

Applied Engineering Technical Core			**62.0 Credits**
EET 201	**Circuit Analysis I**	4.0	
EET 202	**Circuit Analysis II**	4.0	
EET 203	**Non-Destructive Evaluation of Materials**	4.0	
EET 204	**Introduction to Nanotechnology**	4.0	
EET 205	**Digital Electronics with Laboratory**	4.0	
EET 311	**Modeling of Engineering Systems**	4.0	
EET 319	**Programmable Logic Controllers**	4.0	
EET 401	**Applied Micro-controllers**	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 204	**Fluid Power**	3.0	
MET 213	**Applied Mechanics**	4.0	

MHT 205	**Thermodynamics I**	3.0
MHT 226	**Measurement Lab**	3.0
INDE 240	**Technology Economics**	3.0
INDE 370	**Industrial Project Management**	3.0

Industrial Engineering Technology Concentration requirements		**31.0 Credits**
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**	3.0

IET Technical electives **6.0 Credits**

Students select 6.0 additional credits from any EET, MET, MHT, INDE, OPM, or MKT courses not already required.

Capstone course requirements		**9.0 Credits**
MET 421	**Project Design I**	3.0
MET 422	**Project Design II**	3.0
MET 423	**Project Design III**	3.0

Miscellaneous		**8.0 Credits**
CS 161	**Introduction to Computing**	3.0
EET 102	**The Drexel Experience**	2.0
UNIV 101	**The Drexel Experience**	2.0

Free electives **7.0 Credits**

Recommended Plan Of Study

BS Applied Engineering Technology

5 YR UG Co-op Concentration /Industrial Engineering Tech

Term 1		Credits
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
EET 102	Introduction to Applied Engineering Technology	3.0
ENGL 101	Expository Writing and Reading	3.0
MATH 110	Precalculus	3.0
PHYS 103	General Physics I	4.0
UNIV 101	The Drexel Experience	1.0
	Term Credits	*19.5*

Term 2		Credits
ENGL 102	Persuasive Writing and Reading	3.0
MATH 121	Calculus I	4.0
MET 100	Graphical Communication	4.0
PHYS 104	General Physics II	4.0
UNIV 101	The Drexel Experience	1.0
	Term Credits	*16.0*

Term 3		Credits
CS 161	Introduction to Computing	3.0
EET 201	Circuit Analysis I	4.0
ENGL 103	Analytical Writing and Reading	3.0
MATH 122	Calculus II	4.0
MET 101	Manufacturing Materials	4.0
	Term Credits	*18.0*

Term 4		Credits
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 Lab	3.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	*18.0*

Term 5		Credits
EET 203	Non-Destructive Evaluation of Materials	4.0
EET 204	Introduction to Nanotechnology	3.0
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		Credits
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		Credits
EET 401	Applied Micro-controllers	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		Credits
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		Credits
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		Credits
INDE 366	Systems Analysis Methods II	3.0
MET 421	Senior Design Project I	3.0
	Free elective	4.0
	Liberal studies elective	3.0
	Term Credits	*13.0*

Term 11		Credits
INDE 375	Quality Improvement by Experimental Design	4.0
MET 422	Senior Design Project II	3.0
	See advisor for list of appropriate technical electives (MET, EET, INDE)	4.0
	Liberal studies elective	3.0
	Term Credits	*14.0*

Term 12		Credits
MET 423	Senior Design Project III	3.0
	Free elective	4.0
	See advisor for list of appropriate technical electives (MET, EET, INDE)	3.0
	Liberal studies elective	3.0
	Term Credits	*13.0*
	Total Credits (minimum)	188.5

Construction Management

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.

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.

About the concentration
Drexel’s undergraduate concentration in real estate seeks to produce professionals who have knowledge and perspective on the issues in the real estate development process, as well as the industry as a whole. Students will explore the knowledge and skill sets required to create and maintain built environments for living, working and entertainment purposes.

Program Delivery Options
Program delivery options include:

- A traditional 5-year with co-op option
- A part-time study option
- The Drexel University and Burlington County College (BCC) 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.

For additional information, please visit the Construction Management web page.

Construction Management

Bachelor of Science Degree: 184.5 credits
Degree requirements (incoming students, 2009/2010)

English/Communication		**21.0 Credits**
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	**Business Communication**	3.0
COM 310	**Technical Communication**	3.0
COM 330	**Professional Presentations**	3.0

Mathematics		**7.0 Credits**
MATH 110	**Pre-Calculus**	3.0
MATH 121	**Calculus I**	4.0

Science		**15.5 Credits**
ENVS 260	**Environmental Science and Society I**	3.0
ENVS 272	**Physical Geology**	4.0
CHEM 111	**General Chemistry I**	4.0
CHEM 113	**Chemistry Laboratory I**	1.5
PHYS 182	**Applied Physics I**	3.0

Business		**32.0 Credits**
ACCT 115	**Financial Accounting**	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	**Statistics I**	4.0

/Humanities and Social Science		**12.0 Credits**
PHIL 301	**Business Ethics**	
	3 Humanities and social science electives	9.0

Professional Core - Construction Science		**31.0 Credits**
CIVE 251	**Engineering Surveying**	3.0
CMGT 161	**Building Materials and Construction Management I**	3.0
CMGT 162	**Building Materials and Construction Management II**	3.0

CMGT 163	**Building Materials and Construction Management III**	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		**37.0 Credits**
CIVE 240	**Engineering Economics**	3.0
CMGT 101	**Introduction to Construction Management**	3.0
CMGT 261	**Construction Safety**	3.0
CMGT 262	**Building Codes**	3.0
CMGT 264	**Construction Management of Field Operations**	3.0
CMGT 361	**Contracts & Specifications I**	3.0
CMGT 362	**Contracts & Specifications II**	3.0
CMGT 363	**Estimating I**	3.0
CMGT 364	**Estimating II**	3.0
CMGT 461	**Construction Management I**	3.0
CMGT 463	**Value Engineering I**	3.0
CMGT 467	**Techniques of Project Control**	4.0

Construction electives **12.0 Credits**

Students select at least four (4) courses from the following:

CMGT 265	**Information Technology in Construction**	3.0
CMGT 451	**Heavy Construction Principles and Practices**	3.0
CMGT 465	**Marketing of Construction Services**	3.0
CMGT 468	**Real Estate Development**	3.0
CMGT 469	**Construction Seminar**	3.0
	Other approved CMGT elective*	3.0

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

University requirements		**2.0 Credits**
UNIV 101	**The Drexel Experience**	2.0

Free electives **12.0 Credits**

Construction Management: Real Estate Concentration

Bachelor of Science Degree: 184.5 credits
Degree requirements (incoming students, 2009/2010)

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		**21.0 Credits**
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	**Business Communication**	3.0
COM 310	**Technical Communication**	3.0
COM 330	**Professional Presentations**	3.0

Mathematics		**7.0 Credits**
MATH 110	**Pre-Calculus**	3.0
MATH 121	**Calculus I**	4.0

Science		**15.5 Credits**
ENVS 260	**Environmental Science and Society I**	3.0
ENVS 272	**Physical Geology**	4.0
CHEM 111	**General Chemistry I**	4.0
CHEM 113	**Chemistry Laboratory I**	1.5
PHYS 182	**Applied Physics I**	3.0

Business		**32.0 Credits**
ACCT 115	**Financial Accounting**	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	**Statistics I**	4.0

/Humanities and Social Science		**12.0 Credits**
PHIL 301	**Business Ethics**	3.0
	3 Humanities and social science electives	9.0

Professional Core - Construction Science		31.0 Credits
CIVE 251	**Engineering Surveying**	3.0
CMGT 161	**Building Materials and Construction Management I**	3.0
CMGT 162	**Building Materials and Construction Management II**	3.0
CMGT 163	**Building Materials and Construction Management III**	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		37.0 Credits
CIVE 240	**Engineering Economics**	3.0
CMGT 101	**Introduction to Construction Management**	3.0
CMGT 261	**Construction Safety**	3.0
CMGT 262	**Building Codes**	3.0
CMGT 264	**Construction Management of Field Operations**	3.0
CMGT 361	**Contracts & Specifications I**	3.0
CMGT 362	**Contracts & Specifications II**	3.0
CMGT 363	**Estimating I**	3.0
CMGT 364	**Estimating II**	3.0
CMGT 461	**Construction Management I**	3.0
CMGT 463	**Value Engineering I**	3.0
CMGT 467	**Techniques of Project Control**	4.0

Concentration in Real Estate		18.0 Credits
ARCH 432	**The Development Process**	3.0
CMGT 468	**Real Estate Development**	3.0
REAL 310	**Introduction to Real Estate**	3.0
REAL 320	**Real Estate Law Principles and Practice**	3.0
REAL 330	**Facilities and Property Management**	3.0
REAL 470	**Real Estate Investment and Market Feasibility Analysis**	3.0

University requirements		2.0 Credits
UNIV 101	**The Drexel Experience**	2.0

Free electives	6.0 Credits

Recommended Plan Of Study

BS Construction Management
5 YR UG Co-op Concentration

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 & Construction Methods I	3.0
ENGL 101	Expository Writing and Reading	3.0
MATH 110	Precalculus	3.0
UNIV 101	The Drexel Experience	1.0
	Term Credits	*18.5*

Term 2		Credits
ACCT 115	Financial Accounting Foundations	4.0
CMGT 162	Building Materials & Construction Methods II	3.0
ENGL 102	Persuasive Writing and Reading	3.0
MATH 121	Calculus I	4.0
UNIV 101	The Drexel Experience	1.0
	Term Credits	*15.0*

Term 3		Credits
CMGT 163	Building Materials & Construction Methods III	3.0
CMGT 263	Understanding Construction Drawings	3.0
ECON 201	Principles of Microeconomics	4.0
ENGL 103	Analytical Writing and Reading	3.0
PHYS 182	Applied Physics I	3.0
	Term Credits	*16.0*

Term 4		Credits
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		Credits
CMGT 262	Building Codes	3.0
CMGT 264	Construction Management of Field Operations	3.0
COM 270	Business Communication	3.0
ENVS 272	Physical Geology	4.0
PHIL 301	Business Ethics	3.0
	Term Credits	*16.0*

Term 6		Credits
CIVE 240	Engineering Economic Analysis	3.0
CMGT 266	Building Systems I	3.0
CMGT 371	Structural Aspects in Construction I	3.0
COM 310	Technical Communication	3.0
ORGB 300	Organizational Behavior	4.0
	Term Credits	*16.0*

Term 7		Credits
BLAW 201	Business Law I	4.0
CMGT 267	Building Systems II	3.0
CMGT 372	Structural Aspects in Construction II	3.0
COM 330		

	Professional Presentations	3.0
	Free elective	3.0
	Term Credits	*16.0*

Term 8		Credits
CIVE 251	Engineering Surveying	3.0
CMGT 361	Contracts And Specifications I	3.0
CMGT 363	Estimating I	3.0
ENVS 260	Environmental Science and Society I	3.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	*16.0*

Term 9		Credits
CMGT 362	Contracts & Specs II	3.0
CMGT 364	Estimating II	3.0
HRMT 323	Principles of Human Resource Administration	4.0
	Construction Management elective (See degree requirements for list)	3.0
	Humanities/Social Science elective	3.0
	Term Credits	*16.0*

Term 10		Credits
CMGT 365	Soil Mechanics in Construction	4.0
CMGT 467	Techniques of Project Control	4.0
FIN 301	Introduction to Finance	4.0
	Humanities/Social Science elective	3.0
	Term Credits	*15.0*

Term 11		Credits
CMGT 461	Construction Management I	3.0
	Two Construction Management electives (See degree requirements for list)	6.0
	Humanities/Social Science elective	3.0
	Term Credits	*12.0*

Term 12		Credits
CMGT 463	Value Engineering I	3.0
CMGT 499	CM Independent Study - Project	3.0
	Construction Management elective (See degree requirements for list)	3.0
	Free elective	3.0
	Term Credits	*12.0*

	Total Credits (minimum)	181.5

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 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 Management I**	3.0
CMGT 162	**Building Materials and Construction Management II**	3.0
CMGT 361	**Contracts & Specifications I**	3.0
CMGT 362	**Contracts & Specifications II**	3.0
CMGT 363	**Estimating I**	3.0
CMGT 467	**Techniques of Project Control**	3.0

Two of the following elective courses may be chosen to meet the minor requirements* :

CMGT 261	**Construction Safety**	3.0
CMGT 263	**Understanding Construction Drawing**	3.0
CMGT 364	**Estimating II**	3.0
CMGT 461	**Construction Management I**	3.0
CMGT 462	**Construction Management II**	3.0
CMGT 463	**Value Engineering I**	3.0
CMGT 465	**Marketing Construction Services**	3.0

* 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	**Engineering Economics**	3.0
ARCH 161	**Architectural Construction***	3.0

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

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.

The minor requires eight courses, for a total of 24 credits.

Required courses		**18.0**
ARCH 432	**The Development Process**	3.0
CMGT 468	**Real Estate Development**	3.0
REAL 310	**Introduction to Real Estate**	3.0
REAL 320	**Real Estate Law Principles and Practice**	3.0
REAL 330	**Facilities and Property Management**	3.0
REAL 470	**Real Estate Investment and Market Feasibility Analysis**	3.0

Students select two (2) of the following elective courses to meet the minor requirements :

		6.0 Credits
REAL 471	**Advanced Real Estate Investment and Analysis**	3.0
REAL 472	**Advanced Market Research and Analysis**	3.0
REAL 473	**Sales and Marketing of Real Estate**	3.0
REAL 474	**Real Estate Economics in Urban Markets**	3.0
REAL 475	**Real Estate Finance**	3.0
REAL 476	**Real Estate Valuation and Analysis**	3.0

Construction Management

Certificate Program
The Construction Management Certificate Program was started at the request of two contractors' associations: the General Building Contractors Association and the Contractors Association of Eastern Pennsylvania. It is designed for people who have undergraduate degrees in other fields and are employed or wish to be employed in the construction industry. It is also used as a credential for people who are already working in the construction industry, but do not wish to pursue an undergraduate degree. The certificate program is a two-year program with the certificate awarded upon completion of 36 credits. 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.

Courses*		
CMGT 161	**Building Materials and Construction Management I**	3.0
CMGT 162	**Building Materials and Construction Management II**	3.0
CMGT 263	**Understanding Construction Drawing**	3.0
CMGT 264	**Construction Management of Field Operations**	3.0
CMGT 361	**Contracts & Specifications I**	3.0
CMGT 362	**Contracts & Specifications II**	3.0
CMGT 363	**Estimating I**	3.0
CMGT 461	**Construction Management I**	3.0
CMGT 462	**Construction Management II**	3.0
CMGT 463	**Value Engineering I**	3.0
CMGT 465	**Marketing Construction Services**	3.0
CMGT 467	**Techniques of Project Control**	3.0

***Course substitutions or other electives may be taken with prior approval from the Construction Management Program Manager.

Communications and Applied Technology

Overview
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.

Program Goals:

- Combine communications and technology skills training with study of sound business fundamentals.
- Hone written, oral, and interpersonal communication skills for effectiveness in a variety of organizational settings, with both internal and external audiences.
- Expand written communication skills including research and design skills to produce reports, proposals, web sites, and other corporate documents.
- Provide conceptual understanding of various principles of management and organizational processes.
- Develop problem-solving, conflict-management, and decision-making skills
- Examine factors that explain international movement of persons, goods, services, financial capital, and technology across national boundaries.
- Understand legal and ethical issues in business communication, technological advancement, employer-employee relations, obligations to customers, and foreign populations.

Assessment of Prior Learning
The Goodwin College of Professional Studies will grant transfer credit for American Council on Education (ACE)-evaluated corporate training offered by professional associations such as the American Institute of Banking, the American College, and the College for Financial Planning as well as for industry certifications such as Microsoft Certified Professional. ACE-evaluated military training will be considered as well. In addition, credit by examination earned via College-Level Examination Program (CLEP), Defense Activity for Nontraditional Education Support (DANTES), Thomas Edison College Examination Program (TECEP), and Excelsior College Examinations (ECE) also will be assessed. All credits earned through assessment of prior learning are subject to advisor approval.

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 Comunications and Applied Technology web page.

Communications and Applied Technology

Bachelor of Science Degree: 180.0 credits
Degree requirements (incoming students, 2009/2010)

English composition requirements		**9.0 Credits**
ENGL 101	**Expository Writing and Reading**	3.0
ENGL 102	**Persuasive Writing and Reading**	3.0
ENGL 103	**Analytical Writing and Reading**	3.0

Mathematics requirements		**9.0 Credits**
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 Credits**
***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.**	

Liberal Studies Electives	**33.0 Credits**
Africana studies, anthropology, communication, economics, fine arts (history of architecture, art, film, music, theatre), foreign language, history, linguistics, literature, philosophy, political science, psychology, sociology, women's studies, writing.	

Free Electives	**36.0 Credits**
No more than 5 credits of free electives may be in business	

Business requirements		**24.0 Credits**
Students select six of the following courses:		
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
MKTG 301 WI	**Introduction to Marketing Management**	4.0
ORGB 300 WI	**Organizational Behavior**	4.0
OPM 300 WI	**Operations Management**	4.0
STAT 201	**Statistics I**	4.0

Communications and Applied Technology		**60.0 Credits**
CAT 200	**Strategies for Lifelong Learning**	3.0
CAT 201	**Interpersonal Communication**	3.0
CAT 301	**Project Management**	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 CAT I**	3.0
CAT 492	**Senior Project in CAT II**	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 WI	**Professional Presentations**	3.0
COM 335 WI	**Electronic Publishing**	3.0
COM 370 WI	**Advanced Business Writing**	3.0
CT 230	**Web Development I: Introduction**	3.0
CT 240	**Web Development II: E-Commerce**	3.0
CT 385	**Web Development II: Database***	3.0
PHIL 323	**Organizational Ethics**	3.0
PRST 303	**Interpersonal Skills for Virtual Teams**	3.0

*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.

Computing and Security Technology

The Computing and Security Technology 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 Computing and Security Technology program is supported by eight state-of-the-art computer labs in the Goodwin College building and 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 credits, divided into 60 credits of core courses and 36 credits of required courses in the specific concentration.

For additional information about this major, visit the Goodwin School of Technology and Professional Studies web site.

Computing and Security Technology

Bachelor of Science Degree: 185.0 credits
Degree requirements (incoming students, 2009/2010)

Students completing this major must select either a concentration in Computing Technology or a concentration in Computing Security.

English requirements		**12.0 Credits**
COM 230	**Techniques of Speaking**	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

Mathematics requirements		**9.0 Credits**
MATH 181	**Mathematical Analysis I**	3.0
MATH 182	**Mathematical Analysis II**	3.0
MATH 183	**Mathematical Analysis III**	3.0

Natural Science requirements		**9.0 Credits**
BIO 151	**Applied Biology**	3.0
CHEM 151	**Applied Chemistry**	3.0
PHYS 151	**Applied Physics I**	3.0

Liberal studies electives * **12.0 Credits**

*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.

Free electives **47.0 Credits**

Computing and Security Technology Core Requirements		**51.0 Credits**
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 System Architecture I**	3.0
CT 360	**Operating System Architecture II**	3.0
CT 380	**Operating System Architecture III**	3.0
CT 230	**Web Development I**	3.0
CT 240	**Web Development II**	3.0
CT 400	**Network Security I**	3.0
CT 395	**IT Security I**	3.0

CT 420	**IT Security II**	3.0
CT 491	**Senior Project I**	3.0
CT 496	**Senior Project II**	3.0

Concentration in Computing Technology

Computing Technology Concentration requirements		**24.0 Credits**
CT 100	**Microcomputer Hardware**	3.0
CT 120	**Microcomputer Operating System**	3.0
CT 220	**Database I**	3.0
CT 370	**OO Systems Analysis**	3.0
CT 375	**Database II**	3.0
CT 425	**Database III**	3.0
CT 290	**OO Client Side Programming**	3.0
CT 431	**Project Management**	3.0

Computing Technology electives **9.0**

Students select three (3) of the following courses:

CT 385	**Web Development III**	3.0
CT 392	**Web Development IV**	3.0
CT 390	**OO Server Side Programming**	3.0
CT 405	**OO Enterprise Programming**	3.0
CT 410	**Linux III**	3.0
CT 430	**Database IV**	3.0
CT 435	**Database V**	3.0
CT 438	**Database VI**	4.0
CT 388	**Special Topics in Computing Technology I**	4.0
CT 389	**Special Topics in Computing Technology II**	4.0

Additional Security electives **12.0**

Students select any four(4) Security courses from the list of required Computing Security Concentration Courses or from the list of Computing Security electives.

Concentration in Computing Security

Computing Security Concentration requirements		**36.0 Credits**
CT 300	**Security Technology Models and Architecture I**	3.0
CT 312	**Access Control & Intrusion Detection Technology**	3.0
CT 315	**Security Management Practice**	3.0
CT 325	**O/S Security Architecture I**	3.0
CT 336	**IP Security and VPN Technology**	3.0
CT 393	**IP Security Risk Assessment**	3.0
CT 402	**Network Security II**	3.0
CT 412	**IT Security Policies**	3.0
CT 415	**Disaster Recovery and Continuity Planning**	3.0
CT 422	**Incident Response Best Practices**	3.0
CT 432	**IT Security System Audits**	3.0
CT 472	**IT Security Defense Countermeasures**	3.0

Computing Security electives **9.0**

Students select three (3) of the following courses:

CT 212	**Computer Forensics**	3.0
CT 213	**Forensic Data Recovery Technology**	3.0
CT 222	**Security and Information Warfare**	3.0

CT 225	**Data Mining Technology for Security**	3.0
CT 295	**Public Key Infrastructure Technology**	3.0
CT 326	**O/S Security Architecture II**	3.0
CT 355	**Wireless Network Security**	3.0
CT 362	**Network Auditing**	3.0
CT 382	**Applied Cryptography**	3.0
CT 407	**Network Security III**	3.0
CT 427	**e-Commerce and Web Security Technology**	3.0

Certificate in Computing Security

24.0 credits

The Certificate in Computing Security 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 web site.

Required courses		**18.0 Credits**
CT 300	**Security Technology Models and Architecture**	3.0
CT 312	**Access Control & Intrusion Detection Technology**	3.0
CT 325	**O/S Security Architecture I**	3.0
CT 336	**IP Security and VPN Technology**	3.0
CT 402	**Network Security II**	3.0
CT 472	**IT Security Defense Countermeasures**	3.0

In addition, students select two of the following electives:		**6.0 Credits**
Computing Security electives		
CT 212	**Computer Forensics**	3.0
CT 222	**Security and Information Warfare**	3.0
CT 295	**Public Key Infrastructure Technology**	3.0
CT 315	**Security Management Practice**	3.0
CT 326	**O/S Security Architecture II**	3.0
CT 355	**Wireless Network Security**	3.0
CT 362	**Network Auditing**	3.0
CT 382	**Applied Cryptography**	3.0
CT 393	**IP Security Risk Assessment**	3.0
CT 412	**IT Security Policies**	3.0
CT 415	**Disaster Recovery and Continuity Planning**	3.0
CT 422	**Incident Response Best Practices**	3.0
CT 432	**IT Security System Audits**	3.0

Culinary Arts

The culinary arts program 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.

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

- Minor in Business Administration
- Minor in Marketing
- Minor in Entrepreneurship

For more information, visit the Culinary Arts and Hospitality Management Programs web site.

Culinary Arts

Bachelor of Science Degree: 184.0 credits
Degree requirements (incoming students, 2009/2010)

General education requirements		**45.0 Credits**
ENGL 101	**Expository Writing and Reading**	3.0
ENGL 102	**Persuasive Writing and Reading**	3.0
ENGL 103	**Analytical Writing and Reading**	3.0
MATH 181	**Mathematical Analysis I***	3.0
MATH 182	**Mathematical Analysis II**	3.0
MATH 183	**Mathematical Analysis III**	3.0
NFS 101	**Introduction to Nutrition and Foods**	4.0
FDSC 154	**Foods: Composition, Interaction and Formulation**	3.0
UNIV 101	**The Drexel Experience**	2.0
	Arts and humanities electives**	9.0
	Social science electives***	6.0
	Free electives	3.0

* Instead of the three course MATH 181-183 sequence, students may substitute MATH 101 and MATH 102 (with advisor's permission).

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

*** Students may choose from AFAS, ANTH, PSY, and SOC courses.

Program requirements		**50.0 Credits**
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 Hospitality Industry**	3.0
HRM 200	**Productivity Software for the 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	**Hospitality Marketing**	3.0
HRM 335	**Beverage Management**	3.0
HRM 350	**Cost Controls in Hospitality**	3.0
HRM 455	**Hospitality in Human Resource Management**	3.0

Culinary arts requirements	**53.0 Credits**

CULA 120	**Major Techniques and Traditions I**	3.0
CULA 121	**Major Techniques and Traditions II**	3.0
CULA 125	**Foundations of Professional Baking**	3.0
CULA 216	**A la Carte Cuisine**	3.0
CULA 220	**Patisserie I**	2.0
CULA 225	**Patisserie II**	2.0
CULA 235	**Professional Dining Room Management**	2.0
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 Lab**	2.0
CULA 320	**Advanced Culinary Studio**	3.0
CULA 325	**Garde Manger Lab**	3.0
CULA 400	**Directed Studies With a Master Chef**	3.0
CULA 405	**Culture and Gastronomy I**	3.0
CULA 410	**Culture and Gastronomy II**	3.0
CULA 415	**Food Styling and Photography**	3.0
CULA 420	**Senior Design Project**	3.0

Culinary Arts (CULA) Electives	**11.0 Credits**

Business Minor Requirements	**24.0 Credits**

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: **24.0**

ECON 201	**Principles of Microeconomics**	4.0
ECON 202	**Principles of Macroeconomics**	4.0
FIN 301	**Introduction to Finance**	4.0
MKTG 301 WI	**Introduction to Marketing Management**	4.0
ORGB 300 WI	**Organizational Behavior**	4.0
STAT 201	**Statistics I**	4.0

Entrepreneurship Minor Option: **24.0**

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 Planning for Entrepreneurs**	4.0

Students select two of the following (or 8 credits of courses from a different college/school with approval from the Department of Management).

BLAW 346	**Entrepreneurial Law**	4.0
FIN 301	**Introduction to Finance***	4.0
FIN 335	**Entrepreneurial Finance**	4.0
MKTG 347	**New Product Development**	4.0
MGMT 363	**Directed Study in Entrepreneurship***	4.0
ORGB 300 WI	**Organizational Behavior**	4.0

*Prerequisites must be taken as unrestricted electives.

Marketing Minor Option: **24.0**

MKTG 301	**Introduction to Marketing Management**	4.0
MKTG 380	**Seminar in Marketing Strategy**	4.0

Students select four of the following courses:

MKTG 321	**Sales Management**	4.0
MKTG 322	**Advertising and Advertising Management**	4.0
MKTG 324 WI	**Marketing Channels and Distribution Systems**	4.0
MKTG 326	**Marketing Research**	4.0
MKTG 344	**Professional Personal Selling**	4.0
MKTG 347	**New Product Development and Marketing**	4.0
MKTG 348	**Services Marketing**	4.0
MKTG 351	**Marketing for Nonprofit Organizations**	4.0
MKTG 352	**Sales Promotion**	4.0
MKTG 353	**Business-to-Business Marketing**	4.0
MKTG 355	**Direct Marketing**	4.0
MKTG 356	**Consumer Behavior**	4.0
MKTG 357 WI	**Global Marketing**	4.0
MKTG 358	**Transportation and Logistics**	4.0

Recommended Plan Of Study

BS Culinary Arts
4 YR UG Co-op Concentration
Gen. Business Minor

Term 1		Credits
ENGL 101	Expository Writing and Reading	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 101	The Drexel Experience	1.0
	Term Credits	*13.0*

Term 2		Credits
ENGL 102	Persuasive Writing and Reading	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 101	The Drexel Experience	1.0
	Term Credits	*14.0*

Term 3		Credits
CULA 120	Techniques & Traditions I	3.0
ENGL 103	Analytical Writing and Reading	3.0
HRM 120	Principles of Food-Service Management	3.0
HRM 160	Laws of the Hospitality Ind	3.0
MATH 183	Mathematical Analysis III	3.0
NFS 101	Introduction to Nutrition and Food	3.0
	Term Credits	*18.0*

Term 4		Credits
CULA 121	Techniques & Traditions II	3.0
CULA 125	Foundations of Professional Baking	3.0
ECON 201	Principles of Microeconomics	4.0
HRM 220	Purchasing for the Hospitality Industry	3.0
	Free elective	3.0
	Term Credits	*16.0*

Term 5		Credits
CULA 315	Fundamentals of American Cuisine	3.0
CULA 325	Garde Manger Lab	3.0
ECON 202	Principles of Macroeconomics	4.0
HRM 215	Commercial Food Production	3.0
	Arts and Humanities elective	3.0
	Term Credits	*16.0*

Term 6		Credits
CULA 216	A la Carte Cuisine	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
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	*15.0*

Term 7		Credits
COOP 101	Career Management/Professional Development	0.0
CULA 300	Fundamentals of Vegetarian Cuisine	3.0
CULA 305	Fundamentals of Italian Cuisine	3.0

FIN 301	Introduction to Finance	4.0
	Arts and Humanities elective	3.0
	Culinary Arts (CULA) elective	3.0
	Term Credits	*16.0*

Term 8		Credits
CULA 225	Patisserie II	2.0
CULA 310	Fundamentals of French Cuisine	3.0
CULA 405	Culture and Gastronomy I	3.0
CULA 415	Food Styling and Show Competition	3.0
	Culinary Arts (CULA) elective	3.0
	Term Credits	*14.0*

Term 9		Credits
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 Ind Public Relations	3.0
	Culinary Arts (CULA) elective	3.0
	Term Credits	*15.0*

Term 10		Credits
CULA 316	Butchery Lab	2.0
CULA 400	Directed Studies with a Master Chef	3.0
CULA 415	Food Styling and Photography	3.0
HRM 330	Hospitality Marketing	3.0
ORGB 300	Organizational Behavior	4.0
	Social science elective	3.0
	Term Credits	*18.0*

Term 11		Credits
CULA 320	Advanced Culinary Studio	3.0
HRM 320	Hospitality Management Information Systems	3.0
HRM 335	Beverage Management	3.0
HRM 350	Cost Controls in Hospitality	3.0
MKTG 301	Introduction to Marketing Management	4.0
	Term Credits	*16.0*

Term 12		Credits
CULA 420	Senior Design Project	3.0
HRM 455	Hospitality Human Resources Management	3.0
	Arts and Humanities elective	3.0
	Culinary Arts (CULA) elective	2.0
	Social science elective	3.0
	Term Credits	*14.0*

	Total Credits (minimum)	185.0

Minor in Culinary Arts

24.0 credits

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	**Major 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

Students select at least eight (8.0) credits from the following courses to meet the minor requirements::		
CULA 121	**Major Techniques and Traditions II**	3.0
CULA 125	**Foundations of Professional Baking**	3.0
CULA 216	**A la Carte Cuisine**	3.0
CULA 220	**Patisserie I**	2.0
CULA 225	**Patisserie II**	2.0
CULA 226	**Patisserie III**	2.0
CULA 240	**Fundamentals of Chinese Cuisine**	3.0
CULA 306	**Advanced Italian Cuisine**	3.0
CULA 311	**Advanced French Cuisine**	3.0
CULA 320	**Advanced Culinary Studio**	3.0
CULA 325	**Garde Manger Lab**	2.0
CULA 316	**Butchery Lab**	2.0
CULA 330	**Charcuterie**	3.0
CULA 335	**Fundamentals of Indian Cuisine**	3.0
CULA 400	**Directed Study With a Master Chef**	2.0
CULA 405	**Culture and Gastronomy I**	3.0
CULA 410	**Culture and Gastronomy II**	3.0
CULA 415	**Food Styling and Photography**	3.0
CULA 425	**The Kitchen Garden**	3.0
CULA 426	**The Kitchen Garden: Summer**	3.0
CULA 427	**The Kitchen Garden: Fall**	3.0
HRM 315	**Continental, Ethnic, and Regional Cuisine**	3.0
HRM 415	**Fine Dining and Services**	3.0

Culinary Science

About Culinary Science
Culinary scientists learn to integrate and apply knowledge from the disciplines 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.

The Culinary Science program at Goodwin 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.

The four-year, 182-credit curriculum includes one six-month period of cooperative employment in the spring and summer terms of the junior year.

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.

For more information, visit Goodwin College's Culinary Science web page.

Culinary Science

Bachelor of Science Degree: 183.0 credits
Degree requirements (incoming students, 2009/2010)

Written Analysis and Communication		**15.0 Credits**
COM 230	**Techniques of Speaking**	3.0
COM 310	**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

Mathematical Analysis and Statistics		**20.0 Credits**
MATH 101	**Introduction to Analysis I***	4.0
MATH 102	**Introduction to Analysis II***	4.0
MATH 239	**Math for the Life Sciences**	4.0
STAT 201	**Statistics I**	4.0
STAT 202	**Statistics II**	4.0

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

Nutrition		**8.0 Credits**
NFS 230	**Intermediate Nutrition**	4.0
NFS 365	**Nutritional Laboratory**	4.0

Humanities and Social Science		**5.0 Credits**
ANTH 101	**Cultural Diversity**	3.0
UNIV 101	**The Drexel Experience**	2.0

Biological Sciences		**9.0 Credits**
BIO 121	**Physiology and Nutrition**	4.5
BIO 122	**Cells and Genetics**	4.5

Chemistry		**17.0 Credits**
CHEM 101	**General Chemistry I**	3.5
CHEM 102	**General Chemistry II**	4.5
CHEM 103	**General Chemistry III**	5.0
NFS 217	**Nutrient Quality and Composition**	1.0
NFS 400	**Nutritional Chemistry**	3.0

Physics		**8.0 Credits**
PHYS 103	**General Physics I**	4.0
PHYS 104	**General Physics II**	4.0

Unrestricted electives		6.0 Credits
	Free electives	6.0

Food Science Requirements		32.0 Credits
FDSC 154	**Foods: Composition, Interaction & Formulations**	4.0
FDSC 270	**Microbial Food Safety and Sanitation**	4.0
FDSC 350	**Experimental Foods**	3.0
FDSC 450	**Food Microbiology**	3.0
FDSC 451	**Food Microbiology Laboratory**	2.0
FDSC 454	**Microbiology and Chemistry of Food Safety**	3.0
FDSC 456	**Food Preservation Process**	3.0
FDSC 458	**Nutritional Impact of Food Processing**	3.0
FDSC 460	**Food Chemistry**	3.0
FDSC 461	**Food Analysis**	3.0
FDSC 490	**Food Science Seminar**	1.0

Hospitality Management/Culinary Arts Requirements		37.0 Credits
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	**Major Techniques and Traditions I**	3.0
CULA 125	**Foundations of Professional Baking**	3.0
CULA 291	**Independent Study in the Culinary Arts: Practicum II**	6.0
CULA 310	**Fundamentals of French Cuisine**	3.0
CULA 315	**Fundamentals of American Cuisine**	3.0
CULA 405	**Culture and Gastronomy I**	3.0
CULA 410	**Culture and Gastronomy II**	3.0
CULA 420	**Senior Design Project**	3.0

Hospitality Management/Culinary Arts Electives		6.0 Credits
	CULA or HRM electives	6.0

Business Minor or Science Concentration Requirements **26.0 - 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 **26.0 - 30.0 Credits**

CHEM 230	**Quantitative Analysis**	3.0
CHEM 231	**Quantitative Analysis Laboratory**	2.0
CHEM 241	**Organic Chemistry I**	4.0
CHEM 242	**Organic Chemistry II**	4.0

Students select two of the following courses:

BIO 221	**Microbiology**	4.0
BIO 312	**Genetically Modified Foods**	2.0
BIO 424	**Microbial Physiology**	5.0
CHEM 243	**Organic Chemistry III**	4.0
CHEM 256	**Physical Chemistry for Biological Sciences**	4.5
CHEM 430	**Analytical Chemistry I**	3.0
CHEM 431 WI	**Analytical Chemistry II**	4.0

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

Business Administration Minor Option: **20.0**

(STAT 201 and STAT 202, part of the minor requirements, are already listed under the Mathematics requirements for this major.)

ECON 201	**Principles of Microeconomics**	4.0
ECON 202	**Principles of Macroeconomics**	4.0
MKTG 301 WI	**Introduction to Marketing Management**	4.0
MKTG 347	**New Product Development**	4.0
ORGB 300 WI	**Organizational Behavior**	4.0

Entrepreneurship Minor Option: **28.0**

(STAT 201 and STAT 202 are already listed under the Mathematics requirements for this major.)

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 Planning 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

Marketing Minor Option: **24.0**

(STAT 201 and STAT 202 are already listed under the Mathematics requirements for this major.)

MKTG 301	**Introduction to Marketing Management**	4.0
MKTG 347	**New Product Development**	4.0
MKTG 380	**Seminar in Marketing Strategy**	4.0

Students select three of the following courses:

MKTG 324 WI	**Marketing Channels and Distribution Systems**	4.0
MKTG 326	**Marketing Research**	4.0
MKTG 352	**Sales Promotion**	4.0
MKTG 353	**Business-to-Business Marketing**	4.0
MKTG 356	**Consumer Behavior**	4.0
MKTG 357 WI	**Global Marketing**	4.0
MKTG 358	**Transportation and Logistics**	4.0

Recommended Plan Of Study

BS Culinary Science, with a Science Concentration

4 YR UG Co-op Concentration

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 101	The Drexel Experience	1.0
	Term Credits	*14.5*

Term 2		Credits
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 101	The Drexel Experience	1.0
	Term Credits	*15.5*

Term 3		Credits
CHEM 103	General Chemistry III	5.0
CULA 120	Techniques & 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		Credits
BIO 121	Physiology and Nutrition	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		Credits
BIO 122	Cells and Genetics	4.5
CULA 315	Fund of American Cuisine	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 215	Commercial Food Production	4.0
	Term Credits	*15.5*

Term 6		Credits
CHEM 230	Quantitative Analysis	3.0
CHEM 231	Quantitative Analysis Laboratory	2.0
CHEM 241	Organic Chemistry I	4.0
	Culinary Arts (CULA) or HRM (Hospitality Management) elective	3.0
	Free elective	3.0
	Term Credits	*15.0*

Term 7		Credits
CHEM 242	Organic Chemistry II	4.0
COM 230	Techniques of Speaking	3.0
COOP 101	Career Management/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		Credits
CULA 310	Fund 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 (See degree requirements)	4.0
	Term Credits	*17.0*

Term 9		Credits
FDSC 454	Microbiology & Chemistry of Food Safety	3.0
FDSC 461	Food Analysis	3.0
NFS 365	Nutrition Laboratory: Food and Nutrient Analysis	4.0
PHYS 104	General Physics II	4.0
	Term Credits	*14.0*

Term 10		Credits
CULA 125	Foundations of Professional Baking	3.0
CULA 405	Culture and Gastronomy I	3.0
FDSC 450	Food Microbiology	3.0
FDSC 451	Food Microbiology Laboratory	2.0
	Science concentration elective (See degree requirements)	4.0
	Term Credits	*15.0*

Term 11		Credits
CULA 410	Culture and Gastronomy II	3.0
FDSC 458	Nutritional Impact of Food Processing Methods	3.0
FDSC 460	Food Chemistry	3.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	*13.0*

Term 12		Credits
COM 310	Technical Communication	3.0
CULA 420	Senior Design Project	3.0
FDSC 490	Seminar in Food Science	1.0
STAT 202	Business Statistics II	4.0
	Free elective	3.0
	Term Credits	*14.0*

	Total Credits (minimum)	184.0

Recommended Plan Of Study

BS Culinary Science, with a Business Administration Minor

4 YR UG Co-op Concentration

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 101	The Drexel Experience	1.0
	Term Credits	*14.5*

Term 2		Credits
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 101	The Drexel Experience	1.0
	Term Credits	*15.5*

Term 3		Credits
CHEM 103	General Chemistry III	5.0
CULA 120	Techniques & 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		Credits
BIO 121	Physiology and Nutrition	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		Credits
BIO 122	Cells and Genetics	4.5
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	*15.5*

Term 6		Credits
CULA 315	Fund of American Cuisine	3.0
ECON 201	Principles of Microeconomics	4.0
ORGB 300	Organizational Behavior	4.0
	Free elective	3.0
	Term Credits	*14.0*

Term 7		Credits
COM 230	Techniques of Speaking	3.0
COOP 101	Career Management/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)	3.0

	elective	
	Term Credits	*16.0*

Term 8		Credits
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		Credits
FDSC 458	Nutritional Impact of Food Processing Methods	3.0
FDSC 460	Food Chemistry	3.0
NFS 365	Nutrition Laboratory: Food and Nutrient Analysis	4.0
PHYS 104	General Physics II	4.0
	Term Credits	*14.0*

Term 10		Credits
CULA 125	Foundations of Professional Baking	3.0
CULA 405	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		Credits
CULA 410	Culture and Gastronomy II	3.0
FDSC 454	Microbiology & Chemistry of Food Safety	3.0
FDSC 461	Food Analysis	3.0
MKTG 347	New Product Development	4.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	*17.0*

Term 12		Credits
COM 310	Technical Communication	3.0
CULA 420	Senior Design Project	3.0
FDSC 490	Seminar in Food Science	1.0
STAT 202	Business Statistics II	4.0
	Free elective	3.0
	Term Credits	*14.0*

Total Credits (minimum)	183.0

Recommended Plan Of Study

BS Culinary Science, with an Entrepreneurship Minor

4 YR UG Co-op Concentration

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 101	The Drexel Experience	1.0
	Term Credits	*14.5*

Term 2		Credits
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 101	The Drexel Experience	1.0
	Term Credits	*15.5*

Term 3		Credits
CHEM 103	General Chemistry III	5.0
CULA 120	Techniques & 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		Credits
BIO 121	Physiology and Nutrition	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		Credits
BIO 122	Cells and Genetics	4.5
CULA 315	Fund of American Cuisine	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 215	Commercial Food Production	4.0
	Term Credits	*15.5*

Term 6		Credits
ACCT 120	Accounting Essentials for New Ventures	4.0
COM 230	Techniques of Speaking	3.0
MGMT 260	Introduction to Entrepreneurship	4.0
ORGB 300	Organizational Behavior	4.0
	Term Credits	*15.0*

Term 7		Credits
COOP 101	Career Management/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		Credits
CULA 310	Fund 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		Credits
FDSC 454	Microbiology & Chemistry of Food Safety	3.0
FDSC 461	Food Analysis	3.0
MGMT 364	Technology Management	4.0
NFS 365	Nutrition Laboratory: Food and Nutrient Analysis	4.0
PHYS 104	General Physics II	4.0
	Term Credits	*18.0*

Term 10		Credits
CULA 125	Foundations of Professional Baking	3.0
CULA 405	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		Credits
CULA 410	Culture and Gastronomy II	3.0
FDSC 458	Nutritional Impact of Food Processing Methods	3.0
FDSC 460	Food Chemistry	3.0
MKTG 347	New Product Development	4.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	*17.0*

Term 12		Credits
COM 310	Technical Communication	3.0
CULA 420	Senior Design Project	3.0
FDSC 490	Seminar in Food Science	1.0
STAT 202	Business Statistics II	4.0
	Culinary Arts (CULA) or HRM (Hospitality Management) elective	3.0
	Term Credits	*14.0*
	Total Credits (minimum)	**185.0**

Recommended Plan Of Study

BS Culinary Science, with a Marketing Minor

4 YR UG Co-op Concentration

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 101	The Drexel Experience	1.0
	Term Credits	*14.5*

Term 2		Credits
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 101	The Drexel Experience	1.0
	Term Credits	*15.5*

Term 3		Credits
CHEM 103	General Chemistry III	5.0
CULA 120	Techniques & 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		Credits
BIO 121	Physiology and Nutrition	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		Credits
BIO 122	Cells and Genetics	4.5
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	*14.5*

Term 6		Credits
COM 230	Techniques of Speaking	3.0
HRM 215	Commercial Food Production	4.0
STAT 201	Introduction to Business Statistics	4.0
	Free elective	3.0
	Term Credits	*14.0*

Term 7		Credits
COOP 101	Career Management/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)	3.0

	elective	
	Term Credits	*17.0*

Term 8		Credits
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		Credits
FDSC 454	Microbiology & Chemistry of Food Safety	3.0
FDSC 461	Food Analysis	3.0
NFS 365	Nutrition Laboratory: Food and Nutrient Analysis	4.0
PHYS 104	General Physics II	4.0
	Term Credits	*14.0*

Term 10		Credits
CULA 125	Foundations of Professional Baking	3.0
CULA 405	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		Credits
CULA 410	Culture and Gastronomy II	3.0
FDSC 458	Nutritional Impact of Food Processing Methods	3.0
FDSC 460	Food Chemistry	3.0
MKTG 347	New Product Development	4.0
	Term Credits	*13.0*

Term 12		Credits
COM 310	Technical Communication	3.0
CULA 420	Senior Design Project	3.0
FDSC 490	Seminar in Food Science	1.0
MKTG 380	Seminar in Marketing Strategy	4.0
	Marketing (MKTG) elective	4.0
	Term Credits	*15.0*

Total Credits (minimum)	184.0

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 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, Interactions and Formulations**	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 Process**	3.0
FDSC 460	**Food Chemistry**	3.0
FDSC 461	**Food Analysis**	3.0

Minor in Emergency Management

24.0 credits

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.

This minor 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.

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		**12.0 Credits**
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

Students select four (4) of the following courses:		**12.0 Credits**
CT 222	**Security and Information Warfare**	3.0
CT 225	**Data Mining Technology for Security**	3.0
CT 315	**Security Management Practice**	3.0
CT 393	**IP Security Risk Assessment**	3.0
CT 395	**IT Security I**	3.0
CT 412	**IT Security Policies**	3.0
CT 415	**Disaster Recovery and Continuity Planning**	3.0
CT 420	**IT Security II**	3.0
CT 422	**Incident Response Best Practices**	3.0
CT 432	**IT Security System Audits**	3.0
CT 472	**IT Security Defense Countermeasures**	3.0
EMER 235	**Public Information Strategies**	3.0
EMER 245	**Search and Rescue**	3.0
EMS 307	**Critical Incident Stress Management**	3.0
EMS 445	**Organizing Community Response in Disasters**	3.0

General Studies

The 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
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 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.

For more information on this major, visit Goodwin College's General Studies 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.

For more information, visit Goodwin College's Pre-Professional Programs page.

Individualized Studies

Bachelor of Science Degree: 180.0 credits

Degree requirements (incoming students, 2009/2010)

College requirements		6.0 Credits
CAT 200	**Strategies for Lifelong Learning**	3.0
GSTD 491	**Senior Project in General Studies**	3.0

English and Speech requirements		12.0 Credits
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		9.0 Credits
MATH 181	**Mathematical Analysis I**	3.0
MATH 182	**Mathematical Analysis II**	3.0
MATH 183	**Mathematical Analysis III**	3.0

Computing requirement **3.0 Credits**

Students select one of the following courses:

CS 161	**Introduction to Computing**	3.0
CS 171	**Computer Programming I**	3.0
CT 220	**Database I**	3.0
CT 230	**Web Development I**	3.0
PRST 211	**Computer Applications for Professionals**	3.0
PRST 212	**Creative Studies in the World Wide Web**	3.0

Natural Science electives	9.0 Credits
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.	

Specialization Requirements	45.0 Credits
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.	

Liberal Studies requirements	36.0 Credits
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.)	

Free electives **60.0 Credits**

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 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.

For more information, visit Goodwin College's Pre-Professional Programs page.

Liberal Studies

Bachelor of Science Degree: 180.0 credits
Degree requirements (incoming students, 2009/2010)

College requirements		6.0 Credits
CAT 200	**Strategies for Lifelong Learning**	3.0
GSTD 491	**Senior Project in General Studies**	3.0

English and Speech requirements		12.0 Credits
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		12.0 Credits
MATH 181	**Mathematical Analysis I**	3.0
MATH 182	**Mathematical Analysis II**	3.0

Computing requirement **3.0 Credits**

Students select one of the following courses:

CS 161	**Introduction to Computing**	3.0
CS 171	**Computer Programming I**	3.0
CT 220	**Database I**	3.0
CT 230	**Web Development I**	3.0
PRST 211	**Computer Applications for Professionals**	3.0
PRST 212	**Creative Studies in the World Wide Web**	3.0

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

Arts and Humanities electives		36.0 Credits
	Fine Arts (ARTH, MUSC, THTR)	9.0
	History (HIST)	9.0
	Literature (ENGL)	9.0
	Philosophy (PHIL) or Religion	9.0

Social Science electives		39.0 Credits
	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 **36.0 Credits**

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. .

Free electives	**39.0 Credits**

Physical Science Concentration

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.

For more information, visit Goodwin College's Pre-Professional Programs page.

Physical Science Concentration

Bachelor of Science Degree: 180.0 credits

Required courses (incoming students, 2009/2010)

College requirements		**6.0 Credits**
CAT 200	**Strategies for Lifelong Learning**	3.0
GSTD 491	**Senior Project in General Studies**	3.0

English and Communication requirements		**15.0 Credits**
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	**Technical Communication**	3.0

Mathematics requirements		**9.0 - 12.0 Credits**
MATH 181	**Mathematical Analysis I**	3.0
MATH 182	**Mathematical Analysis II**	3.0
MATH 183	**Mathematical Analysis III**	3.0
or		
MATH 121	**Calculus I**	4.0
MATH 122	**Calculus II**	4.0
MATH 123	**Calculus III**	4.0

Computing requirement **3.0 Credits**

Students select one of the following courses:

CS 161	**Introduction to Computing**	3.0
CS 171	**Computer Programming I**	3.0
CT 220	**Database I**	3.0
CT 230	**Web Development I**	3.0
PRST 211	**Computer Applications for Professionals**	3.0
PRST 212	**Creative Studies in the World Wide Web**	3.0

Historical Perspectives in Science **3.0 Credits**

Students select one of the following courses:

HIST 280	**History of Science I**	3.0
HIST 281	**History of Science II**	3.0
HIST 282	**The Scientific Revolution**	3.0
HIST 285	**Technology in Historical Perspective**	3.0
HIST 286	**Explorations of Technology and Gender**	3.0

Philosophical Issues in Science		3.0 Credits
Students select one of the following courses:		
BMES 338	**Biomedical Ethics and Law**	4.0
PHIL 321	**Biomedical Ethics**	3.0
PHIL 351	**Philosophy of Technology**	3.0
PHIL 361	**Ethics**	3.0

Physical Science requirements		31.5 - 37.5 Credits
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 II**	3.0
CHEM 164	**General Chemistry Lab I**	2.0
CHEM 165	**General Chemistry Lab II**	2.5
Physics		
PHYS 182	**Applied Physics I**	3.0
PHYS 183	**Applied Physics II**	3.0
PHYS 184	**Applied Physics III**	3.0
or		
PHYS 185	**Fundamentals of Physics Lecture I**	3.0
PHYS 186	**Fundamentals of Physics Lab I**	2.0
PHYS 188	**Fundamentals of Physics Lab II**	2.0
PHYS 189	**Fundamentals of Physics Lecture II**	3.0
PHYS 280	**Fundamentals of Physics Lecture III**	3.0
PHYS 282	**Fundamentals of Physics Lab III**	2.0

*Premed students should note that BIO 161-163 are lecture only, and many medical schools require labs.

Physical Science electives	27.0 Credits
Students must complete 27.0 credits of natural science electives. Courses must be upper level in biology, chemistry, physics or environmental science..	

Liberal Studies electives	27.0 Credits
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.	

Free electives	49.5-58.5Credits

Hospitality Management

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:

- Minor in Business Administration
- Minor in Marketing
- Minor in Entrepreneurship

For more information, visit the Culinary Arts and Hospitality Management Programs web site.

Hospitality Management

Bachelor of Science Degree: 182.0 credits
Degree requirements (incoming students, 2009/2010)

General education requirements		59.0 Credits
COM 230	**Techniques of Speaking**	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
MATH 181	**Mathematical Analysis I***	3.0
MATH 182	**Mathematical Analysis II**	3.0
MATH 183	**Mathematical Analysis III**	3.0
NFS 101	**Introduction to Nutrition and Foods**	3.0
UNIV 101	**The Drexel Experience**	2.0
	Foreign language courses or arts and humanities electives**	12.0
	Social science electives***	6.0
	Free electives	15.0

* Instead of the three course MATH 181-183 sequence, students may substitute MATH 101 and MATH 102 (with advisor's permission).

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

*** Students may choose from AFAS, ANTH, PSY, and SOC courses.

Hospitality Major requirements		94.0 - 103.0 Credits
CULA 115	**Culinary Fundamentals**	3.0
FDSC 270	**Mirobial Food Safety**	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 Hospitality Industry**	3.0
HRM 200	**Productivity Software for the 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	**Hotels Rooms Division Management**	3.0
HRM 330	**Hospitality Marketing**	3.0

HRM 335	**Beverage Management**	3.0
HRM 360	**Hospitality Industry Public Relations**	3.0
HRM 415	**Fine Dining & Services**	4.0
HRM 450	**Hospitality Leadership Seminar**	3.0
HRM 455	**Hospitality Human Resources**	3.0
	Concentration courses	15.0 - 21.0
	Program electives	12.0 - 18.0

Concentrations

Food and Beverage Management (F&B)

Courses		**15.0 Credits**
HRM 250	**Contract Food-Service 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

Hotel Management Administration

Courses		**15.0 Credits**
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

Travel and Tourism

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

Gaming and Resort Management

Courses		**21.0 Credits**
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 375	**Security and Loss Prevention**	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

Business Minor Requirements	**24.0 Credits**

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: **24.0**

ECON 201	**Principles of Microeconomics**	4.0
ECON 202	**Principles of Macroeconomics**	4.0
FIN 301	**Introduction to Finance**	4.0
MKTG 301 WI	**Introduction to Marketing Management**	4.0
ORGB 300 WI	**Organizational Behavior**	4.0
STAT 201	**Statistics I**	4.0

Entrepreneurship Minor Option: **24.0**

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 Planning for Entrepreneurs**	4.0

Students select two of the following (or 8 credits of courses from a different college/school with approval from the Department of Management).

BLAW 346	**Entrepreneurial Law**	4.0
FIN 301	**Introduction to Finance***	4.0
FIN 335	**Entrepreneurial Finance**	4.0
MKTG 347	**New Product Development**	4.0
MGMT 363	**Directed Study in Entrepreneurship***	4.0
ORGB 300 WI	**Organizational Behavior**	4.0

*Prerequisites must be taken as unrestricted electives.

Marketing Minor Option: **24.0**

MKTG 301	**Introduction to Marketing Management**	4.0
MKTG 380	**Seminar in Marketing Strategy**	4.0

Students select four of the following courses:

MKTG 321	**Sales Management**	4.0
MKTG 322	**Advertising and Advertising Management**	4.0
MKTG 324 WI	**Marketing Channels and Distribution Systems**	4.0
MKTG 326	**Marketing Research**	4.0
MKTG 344	**Professional Personal Selling**	4.0
MKTG 347	**New Product Development and Marketing**	4.0
MKTG 348	**Services Marketing**	4.0
MKTG 351	**Marketing for Nonprofit Organizations**	4.0
MKTG 352	**Sales Promotion**	4.0
MKTG 353	**Business-to-Business Marketing**	4.0
MKTG 355	**Direct Marketing**	4.0
MKTG 356	**Consumer Behavior**	4.0
MKTG 357 WI	**Global Marketing**	4.0
MKTG 358	**Transportation and Logistics**	4.0

Recommended Plan Of Study

BS Hospitality Management
4 YR UG Co-op Concentration
Gen. Business Minor

Term 1		Credits
ENGL 101	Expository Writing and Reading	3.0
HRM 110	Introduction to the Hospitality	3.0
HRM 130	Tourism I	3.0
HRM 200	Productivity Software for the Hospitality Industry	3.0
MATH 181	Mathematical Analysis I	3.0
UNIV 101	The Drexel Experience	1.0
	Term Credits	*16.0*

Term 2		Credits
ENGL 102	Persuasive Writing and Reading	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 101	The Drexel Experience	1.0
	Term Credits	*17.0*

Term 3		Credits
CULA 115	Culinary Fundamentals	3.0
ENGL 103	Analytical Writing and Reading	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 and Food	3.0
	Term Credits	*18.0*

Term 4		Credits
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 Room Division Management	3.0
	HRM concentration course (See degree requirements for list)	3.0
	Term Credits	*17.0*

Term 5		Credits
COM 230	Techniques of Speaking	3.0
ECON 202	Principles of Macroeconomics	4.0
HRM 310	Hospitality Accounting Systems	3.0
	HRM concentration course (See degree requirements for list)	3.0
	Hospitality Management program elective (See department for options)	3.0
	Term Credits	*16.0*

Term 6		Credits
STAT 201	Statistics I	4.0
	HRM concentration course (See degree requirements for list)	3.0
	Hospitality Management program electives (See department for options)	6.0
	Term Credits	*13.0*

Term 7		Credits
COOP 101	Career Management/Professional Development	0.0

MKTG 301	Introduction to Marketing Management	4.0
	Arts and Humanities elective	3.0
	HRM concentration course (See degree requirements for list)	3.0
	Hospitality Management program elective (See department for options)	3.0
	Term Credits	*13.0*

Term 8		Credits
	Arts and Humanities electives	6.0
	Free electives	9.0
	Term Credits	*15.0*

Term 9		Credits
HRM 225	Equipment Design and Layout	3.0
HRM 360	Hospitality Industry Public Relations	3.0
	Hospitality Management program elective (See department for options)	3.0
	Social science elective	3.0
	Term Credits	*12.0*

Term 10		Credits
HRM 330	Hospitality Marketing	3.0
ORGB 300	Organizational Behavior	4.0
	Arts and Humanities elective	3.0
	HRM concentration course (See degree requirements for list)	4.0
	Term Credits	*14.0*

Term 11		Credits
HRM 320	Hospitality Management Information Systems	3.0
HRM 335	Beverage Management	3.0
HRM 450	Hospitality Leadership Seminar	3.0
	Free elective	3.0
	HRM concentration course (See degree requirements for list)	3.0
	Term Credits	*15.0*

Term 12		Credits
FIN 301	Introduction to Finance	4.0
HRM 455	Hospitality Human Resources Management	3.0
	HRM concentration course (See degree requirements for list)	3.0
	Hospitality Management program elective (See department for options)	3.0
	Social science elective	3.0
	Term Credits	*16.0*
	Total Credits (minimum)	**182.0**

Minor in Gaming and Casino Operations

24.0 credits

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		**24.0 Credits**
HRM 110	**Introduction to the Hospitality Industry**	3.0
HRM 325	**Hotels 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

Certificate in Gaming and Casino Operations

18.0 credits

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 web page.

Required Pre-requisite Courses		
HRM 110	**Introduction to the Hospitality Industry**	3.0
HRM 310	**Hospitality Accounting Systems**	3.0
or		
HRM 325	**Hotels Rooms Division Management**	3.0
MATH 101	**Introduction to Analysis I**	4.0
or		
MATH 181	**Mathematical Analysis I**	3.0

Requirements		**18.0 Credits**
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

Professional Studies

About the Major
The BS in Professional Studies 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.

The core coursework emphasizes computing, researching, planning, problem-solving, decision-making, and leading people. In addition to courses in social sciences, business and communications, students become acquainted with creativity theory and practice, learning to apply creativity principles to enhance their individual, team,and organization.

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

Transfer Credits
To maximize prior coursework and previous learning, students are provided with a personal evaluation of credits they have earned at other institutions as well as other certifications they may have received. Credit for prior learning can be earned through:

- Transfer agreements with other colleges and universities
- The College Level Examination Program (CLEP)
- Portfolio assessments

Program Delivery Options
The Professional Studies degree-completion program offers several flexible delivery options. This major is delivered in a variety of formats so that part-time students can complete their degree in the delivery format that best fits their lifestyle.

- *Saturday Scholars option*: Students who already possess an associate's degree or equivalent credits may complete their degree entirely on Saturdays through the Goodwin College's Saturday Scholars program, providing virtually no interruption to their weekday routine.
- *Evening option*: Students can complete their degree by participating in the Goodwin College's venerable evening program. Courses meet one night

per week for three or four hours.

- *Hybrid option*: Students who desire maximum flexibility may schedule a blend of Saturday, evening, and online classes.

For more information about this major, visit Goodwin College's **Professional Studies** web page.

Professional Studies

Bachelor of Science Degree: 180.0 credits
Required courses (incoming students, 2009/2010)

English composition requirements		**9.0 Credits**
ENGL 101	**Expository Writing and Reading**	3.0
ENGL 102	**Persuasive Writing and Reading**	3.0
ENGL 103	**Analytical Writing and Reading**	3.0

Communication requirements		**9.0 Credits**
COM 111	**Principles of Communication**	3.0
COM 230	**Techniques of Speaking**	3.0
COM 270 WI	**Business Communication**	3.0

Mathematics requirements		**9.0 Credits**
MATH 181	**Mathematical Analysis I**	3.0
MATH 182	**Mathematical Analysis II**	3.0
MATH 183	**Mathematical Analysis III**	3.0

Science requirements **9.0 Credits**

Science Sequence Options (Choose one sequence)		
BIO 161	**General Biology I**	3.0
BIO 162	**General Biology II**	3.0
or		
CHEM 161	**General Chemistry I**	3.0
CHEM 162	**General Chemistry II**	3.0
or		
PHYS 182	**Applied Physics I**	3.0
PHYS 183	**Applied Physics II**	3.0

Science elective		
	Students select one science elective	3.0

Adult Transition Seminar		**3.0 Credits**
CAT 200	**Strategies for Lifelong Learning**	3.0

Social and Behavioral Science requirements		**18.0 Credits**
ANTH 101	**Cultural Diversity: Introduction to Cultural Anthropology**	3.0
PHIL 105	**Critical Reasoning**	3.0
PSY 101	**General Psychology I**	3.0
SOC 101	**Introduction to Sociology**	3.0

Students select one of the following:		
SOC 110	**Sociology of the Future**	3.0
SOC 210	**Race and Ethnic Relations**	3.0
SOC 230	**Women and Men in Changing Society**	3.0

Students select one of the following:		
COM 345	**Intercultural Communication**	3.0
CAT 201	**Interpersonal Communication**	3.0
GSTD 150	**Introduction to World Religions**	3.0

Creativity Studies		9.0 Credits
CRTV 301	**Foundations in Creativity**	3.0
CRTV 302	**Tools and Techniques in Creativity**	3.0
CRTV 303	**Creativity in the Workplace**	3.0

Professional Studies Core		60.0 Credits
BLAW 201	**Business Law I**	4.0
BUSN 301	**Accounting and Finance for Non-Financial Professionals**	4.0
CAT 301	**Project Management**	3.0
CAT 302	**Customer Service Theory and Practice**	3.0
CAT 360	**Applied Organizational Research**	3.0
HRMT 323	**Principles of Human Resource Administration**	4.0
MGMT 260	**Introduction to Entrepreneurship**	4.0
MKTG 301 WI	**Introduction to Marketing Management**	4.0
ORGB 300 WI	**Organizational Behavior**	4.0
PHIL 323	**Organizational Ethics**	3.0
PRST 211	**Computer Applications for Professionals**	3.0
PRST 212	**Creative Studies in the WWW**	3.0
PRST 330	**Career and Professional Development**	3.0
PRST 440	**Policy Analysis**	3.0
PRST 450	**Creative Leadership for Professionals**	3.0
PRST 491 WI	**Professional Portfolio I**	3.0
PRST 492 WI	**Professional Portfolio II**	3.0

Students select one of the following two courses:		
EDUC 436	**Sociology of the Future**	3.0
SOC 340	**Globalization**	3.0

Free Electives*	54.0 Credits
*Depending on transfer credits and professional goals, students may use free electives to pursue a minor such as Business or to pursue a certificate program. Students should see their academic advisor for details.	

Writing-Intensive Course Requirements

In order to graduate, all students beginning with the entering class of 2002/01 (fall, 2002) must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid “clustering” these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog indicates that this course can fulfill a writing-intensive requirement. Departments will designate specific sections of such courses as writing-intensive. Sections of writing-intensive courses are not indicated in this catalog. Students should check the section comments in Banner when registering.

Professional Studies

Bachelor of Science Degree: 180.0 credits

Part-time/Evening Program
Recommended Plan of Study:

First year

(Fall)		**Credits**
CAT 200	**Strategies for Lifelong Learning**	3.0
ENGL 101	**Expository Writing and Reading**	3.0
MATH 181	**Mathematical Analysis I**	3.0
	Total credits	9.0

(Winter)		
COM 111	**Principles of Communication**	3.0
ENGL 102	**Persuasive Writing and Reading**	3.0
MATH 182	**Mathematical Analysis II**	3.0
	Total credits	9.0

(Spring)		
ENGL 103	**Techniques of Analysis Evaluation**	3.0
MATH 183	**Mathematical Analysis III**	3.0
SOC 101	**Introduction to Sociology**	3.0
	Total credits	9.0

(Summer)		
ANTH 101	**Cultural Diversity: Introduction to Cultural Anthropology**	3.0
COM 270	**Business Communication**	3.0
	Total credits	6.0

Second year

(Fall)		
CRTV 301	**Foundations in Creativity**	3.0
	Science sequence I *	3.0
	Free elective	3.0
	Total credits	9.0

*BIO 161 or CHEM 161 or PHYS 182.

(Winter)		
CRTV 302	**Tools and Techniques in Creativity**	3.0
PHIL 105	**Critical Reasoning**	3.0
	Science sequence II*	3.0
	Total credits	9.0

*BIO 162 or CHEM 162 or PHYS 183.

(Spring)		
COM 230	**Techniques of Speaking**	3.0
CRTV 303	**Creativity in the Workplace**	3.0
	Science elective	3.0
	Total credits	9.0

(Summer)		
MKTG 301 WI	**Introduction to Marketing Management**	4.0
	Free elective	3.0
	Total credits	7.0

Third year

(Fall)		
BUSN 301	**Accounting and Finance for Non-Financial Professionals**	4.0
PRST 211	**Computer Applications for Professionals**	3.0
	Free elective	3.0
	Total credits	10.0

(Winter)		
ORGB 300 WI	**Organizational Behavior**	4.0
PRST 212	**Creative Studies in the WWW**	3.0
PSY 101	**General Psychology I**	3.0
	Total credits	10.0

(Spring)		
BLAW 201	**Business Law I**	4.0
HRMT 323	**Principles of Human Resource Administration**	4.0
	Total credits	8.0

(Summer)		
CAT 302	**Customer Service Theory and Practice**	3.0
	Free elective	3.0
	Total credits	6.0

Fourth year

(Fall)		
MGMT 260	**Introduction to Entrepreneurship**	4.0
COM 345	**Intercultural Communication**	3.0
	Free elective	3.0
	Total credits	10.0

(Winter)		
SOC 210	**Race and Ethnic Relations**	3.0
or		
SOC 230	**Women and Men in Changing Society**	3.0
	Free elective	3.0
	Total credits	6.0

(Spring)		
CAT 301	**Project Management**	3.0
	Free elective	3.0
	Total credits	6.0

(Summer)		
	Free electives	6.0
	Total credits	6.0

Fifth year

(Fall)		
SOC 340	**Globalization**	3.0
	Free electives	6.0
	Total credits	9.0
(Winter)		
PHIL 323	**Organizational Ethics**	3.0
PRST 330	**Career and Professional Development**	3.0
	Free elective	3.0
	Total credits	9.0
(Spring)		
PRST 440	**Policy Analysis**	3.0
	Free electives	6.0
	Total credits	9.0
(Summer)		
	Free electives	6.0
	Total credits	6.0

Sixth year

(Fall)		
CAT 360	**Applied Organizational Research**	3.0
PRST 450	**Creative Leadership for Professionals**	3.0
	Total credits	6.0
(Winter)		
PRST 491 WI	**Professional Portfolio I**	3.0
	Free elective	3.0
	Total credits	6.0
(Spring)		
PRST 492 WI	**Professional Portfolio II**	3.0
	Free elective	3.0
	Total credits	6.0

Certificate in Creativity Studies

18.0 - 19.0 Credits

The undergraduate certificate in Creativity Studies 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 the undergraduate certificate in creative studies as a stand-alone professional development credential or as a concentration within their baccalaureate degree.

Requirements		**18.0 Credits**
Core Courses		
CRTV 301	**Foundations in Creativity**	3.0
CRTV 302	**Tools and Techniques to Enhance Creativity**	3.0
CRTV 303	**Creativity in the Workplace**	3.0
PRST 450	**Creative Leadership for Professionals**	3.0
Electives		
Students select two (2) additional courses from the following:		
MGMT 260	**Introduction to Entrepreneurship**	4.0
PRST 212	**Creative Studies in the World Wide Web**	3.0
PRST 330	**Career and Professional Development**	3.0

Property Management

Designed for working professionals, Drexel's B. S. 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® program.

Students in their senior year will prepare for and take the Certified Apartment Manager (CAM) examination administered by the National Apartment Association and will complete the CAM Community Analysis Project in their final, capstone course in the program.

The program is professionally involved and requires students to interact with industry leaders, visit best practice sites, and complete various analysis reports. Students also have the opportunity to be involved in team assessment activities.

For additional information, visit Godwin College's Property Management page.

Property Management

Bachelor of Science Degree: 180.0 credits
Required courses

English composition requirements		9.0 Credits
ENGL 101	**Expository Writing and Reading**	3.0
ENGL 102	**Persuasive Writing and Reading**	3.0
ENGL 103	**Analytical Writing and Reading**	3.0

Communication requirements		9.0 Credits
COM 111	**Principles of Communication**	3.0
COM 230	**Techniques of Speaking**	3.0
COM 280	**Public Relations**	3.0
or		
COM 345	**Intercultural Communication**	

Mathematics requirements		8.0 Credits
MATH 101	**Introduction to Analysis I**	4.0
MATH 102	**Introduction to Analysis II**	4.0

Natural Science requirements		12.0 Credits
PHYS 103	**General Physics I**	4.0
Students select one of the following sequences:		
BIO 102	**Biology I: Cells and Tissues**	4.0
BIO 104	**Biology II: Growth and Heredity**	4.0
or		
CHEM 101	**General Chemistry I**	3.5
CHEM 102	**General Chemistry II**	4.5

Social Science requirements		9.0 Credits
ANTH 101	**Cultural Diversity: Introduction to Cultural Anthropology**	3.0
PSY 101	**General Psychology I**	3.0
SOC 101	**Introduction to Sociology**	3.0

Humanities and Social Science electives		9.0 Credits
	Three electives*	9.0

***Students select elective courses from the subject areas of ANTH, ARTH, FMVD, FMST, HIST, ENGL, MUSC, PHIL, PSCI, PSY, SOC, THTR, or any foreign language.**

Minor in Business Administration		24.0 Credits
ACCT 115	**Financial Accounting Foundations**	4.0
BLAW 201	**Business Law I**	4.0

FIN 301	**Introduction to Finance**	4.0
MKTG 301 WI	**Introduction to Marketing Management**	4.0
ORGB 300 WI	**Organizational Behavior**	4.0
STAT 201	**Statistics I**	4.0

Property Management Core		**57.0 Credits**
CAT 301	**Project Management**	3.0
CAT 302	**Customer Service Theory and Practice**	3.0
CAT 303	**Client Relations Management**	3.0
CMGT 262	**Building Codes**	3.0
CMGT 266	**Building Systems I**	3.0
CMGT 267	**Building Systems II**	3.0
CMGT 468	**Real Estate Development**	3.0
CRTV 301	**Foundations in Creativity**	3.0
DSMR 231	**Retail Principles**	3.0
REAL 330	**Facilities and Property Management**	3.0
PRST 211	**Computer Applications for Professionals**	3.0
PRMT 110	**Introduction to Property Management**	3.0
PRMT 210	**Rental Property and Fair Housing Law**	3.0
PRMT 310	**Property Financing and Valuation**	3.0
PRMT 315	**Property Risk Management**	3.0
PRMT 320	**Sustainable Property Management**	3.0
PRMT 325	**Human Resources for Property Managers**	3.0
PRMT 330	**Property Management Technology**	3.0
PRMT 491	**Senior Project in Property Management**	3.0

Concentrations

Residential Property Management Concentration		**15.0 Credits**
PRMT 335	**Marketing and Leasing Residential Property**	3.0
Students select 12 additional credits from the following:		
PRMT 340	**Managing and Marketing Retail Property**	3.0
PRMT 345	**Managing and Marketing Housing for an Aging Population**	3.0
PRMT 350	**Affordable Housing Management**	3.0
PRMT 355	**Student Housing Management**	3.0
PRMT 356	**Military Housing Management**	3.0

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

Affordable Housing Administration Concentration		**15.0 Credits**
HSAD 323	**Health Services and the Elderly**	3.0
PRMT 335	**Marketing and Leasing Residential Property**	3.0
PRMT 350	**Affordable Housing Management**	3.0
PRMT 345	**Managing and Marketing Housing for an Aging Population**	3.0
SOC 210	**Race and Ethnic Relations**	3.0

SOC 240	**Urban Sociology**	3.0

Residential Property Management Concentration		**15.0 Credits**
CMGT 263	**Understanding Construction Drawings**	3.0
PRMT 335	**Marketing and Leasing Residential Property**	3.0
PRMT 340	**Managing and Marketing Retail Property**	3.0
PRMT 360	**Managing and Marketing Commercial Property**	3.0
PRMT 365	**Commercial Property Appraisal**	3.0
PRMT 356	**Military Housing Management**	3.0

Property Management Major electives		**18.0 Credits**
Students select a minimum of 18 credits from the following list:		
BACS 200 WI	**Foundations of Behavioral Health Care**	3.0
CAT 360	**Applied Organizational Research**	3.0
CMGT 263	**Understanding Construction Drawings**	3.0
CRTV 302	**Tools and Techniques in Creativity**	3.0
CRTV 303	**Creativity in the Workplace**	3.0
HSAD 316	**Health Care Across Cultures**	3.0
HSAD 323	**Health Services and the Elderly**	3.0
INTR 200	**History of Modern Architecture**	3.0
PHIL 323	**Organizational Ethics**	3.0
PRMT 340	**Managing and Marketing Retail Property**	3.0
PRMT 345	**Managing and Marketing Housing for an Aging Population**	3.0
PRMT 350	**Affordable Housing Management**	3.0
PRMT 355	**Student Housing Management**	3.0
PRMT 356	**Military Housing Management**	3.0
PRMT 360	**Managing and Marketing Commercial Property**	3.0
PRMT 365	**Commercial Property Appraisal**	3.0
PRMT 399	**Independent Study in Property Management**	0.5 - 6.0
PRST 450	**Creative Leadership for Professionals**	3.0
SOC 120	**Sociology of the Family**	3.0
SOC 210	**Race and Ethnic Relations**	3.0
SOC 240	**Urban Sociology**	3.0

Free Electives*	**9.0 -10.0 Credits**

Writing-Intensive Course Requirements
In order to graduate, all students beginning with the entering class of 2002/01 (fall, 2002) must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid “clustering” these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

A "WI" next to a course in this catalog indicates that this course can fulfill a writing-intensive requirement. Departments will designate specific sections of such courses as writing-intensive. Sections of writing-intensive courses are not indicated in this catalog. Students should check the section comments in Banner when registering. Students scheduling their courses in Banner can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term. For more information on writing-intensive courses, see the Drexel University Writing Program's Writing-Intensive Course page.

Property Management

Bachelor of Science Degree: 180.0 credits

Required courses (part-time option)

English composition requirements		9.0 Credits
ENGL 101	**Expository Writing and Reading**	3.0
ENGL 102	**Persuasive Writing and Reading**	3.0
ENGL 103	**Analytical Writing and Reading**	3.0

Communication requirements		9.0 Credits
COM 111	**Principles of Communication**	3.0
COM 230	**Techniques of Speaking**	3.0
COM 280	**Public Relations**	3.0
or		
COM 345	**Intercultural Communication**	

Mathematics requirements		9.0 Credits
MATH 181	**Mathematical Analysis I**	3.0
MATH 182	**Mathematical Analysis II**	3.0
MATH 183	**Mathematical Analysis III**	3.0

Natural Science requirements		9..0 Credits
PHYS 182	**Applied Physics I**	3.0
Students select one of the following sequences:		6.0
BIO 161	**General Biology I**	
BIO 162	**General Biology II**	
or		
CHEM 161	**General Chemistry I**	
CHEM 162	**General Chemistry II**	

Social Science requirements		9.0 Credits
ANTH 101	**Cultural Diversity: Introduction to Cultural Anthropology**	3.0
PSY 101	**General Psychology I**	3.0
SOC 101	**Introduction to Sociology**	3.0

Humanities and Social Science electives		9.0 Credits
	Three electives*	9.0

***Students select elective courses from the subject areas of ANTH, ARTH, FMVD, FMST, HIST, ENGL, MUSC, PHIL, PSCI, PSY, SOC, THTR, or any foreign language.**

Minor in Business Administration	24.0 Credits

ACCT 115	**Financial Accounting Foundations**	4.0
BLAW 201	**Business Law I**	4.0
FIN 301	**Introduction to Finance**	4.0
MKTG 301 WI	**Introduction to Marketing Management**	4.0
ORGB 300 WI	**Organizational Behavior**	4.0
STAT 201	**Statistics I**	4.0

Property Management Core		**57.0 Credits**
CAT 301	**Project Management**	3.0
CAT 302	**Customer Service Theory and Practice**	3.0
CAT 303	**Client Relations Management**	3.0
CMGT 262	**Building Codes**	3.0
CMGT 266	**Building Systems I**	3.0
CMGT 267	**Building Systems II**	3.0
CMGT 468	**Real Estate Development**	3.0
CRTV 301	**Foundations in Creativity**	3.0
DSMR 231	**Retail Principles**	3.0
REAL 330	**Facilities and Property Management**	3.0
PRST 211	**Computer Applications for Professionals**	3.0
PRMT 110	**Introduction to Property Management**	3.0
PRMT 210	**Rental Property and Fair Housing Law**	3.0
PRMT 310	**Property Financing and Valuation**	3.0
PRMT 315	**Property Risk Management**	3.0
PRMT 320	**Sustainable Property Management**	3.0
PRMT 325	**Human Resources for Property Managers**	3.0
PRMT 330	**Property Management Technology**	3.0
PRMT 491	**Senior Project in Property Management**	3.0

Concentrations

Residential Property Management Concentration		**15.0 Credits**
PRMT 335	**Marketing and Leasing Residential Property**	3.0
Students select 12 additional credits from the following:		
PRMT 340	**Managing and Marketing Retail Property**	3.0
PRMT 345	**Managing and Marketing Housing for an Aging Population**	3.0
PRMT 350	**Affordable Housing Management**	3.0
PRMT 355	**Student Housing Management**	3.0
PRMT 356	**Military Housing Management**	3.0

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

Affordable Housing Administration Concentration		**15.0 Credits**
HSAD 323	**Health Services and the Elderly**	3.0
PRMT 335	**Marketing and Leasing Residential Property**	3.0
PRMT 350	**Affordable Housing Management**	3.0
PRMT 345	**Managing and Marketing Housing for an Aging Population**	3.0

SOC 210	**Race and Ethnic Relations**	3.0
SOC 240	**Urban Sociology**	3.0

Commercial Property Management Concentration		**15.0 Credits**
CMGT 263	**Understanding Construction Drawings**	3.0
PRMT 335	**Marketing and Leasing Residential Property**	3.0
PRMT 340	**Managing and Marketing Retail Property**	3.0
PRMT 360	**Managing and Marketing Commercial Property**	3.0
PRMT 365	**Commercial Property Appraisal**	3.0
PRMT 356	**Military Housing Management**	3.0

Property Management Major electives		**18.0 Credits**
Students select a minimum of 18 credits from the following list:		
BACS 200 WI	**Foundations of Behavioral Health Care**	3.0
CAT 360	**Applied Organizational Research**	3.0
CMGT 263	**Understanding Construction Drawings**	3.0
CRTV 302	**Tools and Techniques in Creativity**	3.0
CRTV 303	**Creativity in the Workplace**	3.0
HSAD 316	**Health Care Across Cultures**	3.0
HSAD 323	**Health Services and the Elderly**	3.0
INTR 200	**History of Modern Architecture**	3.0
PHIL 323	**Organizational Ethics**	3.0
PRMT 340	**Managing and Marketing Retail Property**	3.0
PRMT 345	**Managing and Marketing Housing for an Aging Population**	3.0
PRMT 350	**Affordable Housing Management**	3.0
PRMT 355	**Student Housing Management**	3.0
PRMT 356	**Military Housing Management**	3.0
PRMT 360	**Managing and Marketing Commercial Property**	3.0
PRMT 365	**Commercial Property Appraisal**	3.0
PRMT 399	**Independent Study in Property Management**	0.5 - 6.0
PRST 450	**Creative Leadership for Professionals**	3.0
SOC 120	**Sociology of the Family**	3.0
SOC 210	**Race and Ethnic Relations**	3.0
SOC 240	**Urban Sociology**	3.0

Free Electives*	**11.0 -12.0 Credits**

Writing-Intensive Course Requirements
In order to graduate, all students beginning with the entering class of 2002/01 (fall, 2002) must pass three writing-intensive courses after their freshman year. Two writing-intensive courses must be in a student's major. The third can be in any discipline. Students are advised to take one writing-intensive class each year, beginning with the sophomore year, and to avoid “clustering” these courses near the end of their matriculation. Transfer students need to meet with an academic advisor to review the number of writing-intensive courses required to graduate.

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Property Management

Bachelor of Science Degree: 180.0 credits

Part-time/Evening Program
Recommended Plan of Study:

First year

(Fall)		Credits
COM 111	**Principles of Communication**	3.0
ENGL 101	**Expository Writing and Reading**	3.0
MATH 181	**Mathematical Analysis I**	3.0
	Total credits	9.0

(Winter)		
ENGL 102	**Persuasive Writing and Reading**	3.0
MATH 182	**Mathematical Analysis II**	3.0
PRMT 110	**Introduction to Property Management**	3.0
	Total credits	9.0

(Spring)		
ENGL 103	**Techniques of Analysis Evaluation**	3.0
MATH 183	**Mathematical Analysis III**	3.0
SOC 101	**Introduction to Sociology**	3.0
	Total credits	9.0

(Summer)		
ANTH 101	**Cultural Diversity: Introduction to Cultural Anthropology**	3.0
COM 230	**Techniques of Speaking**	3.0
	Total credits	6.0

Second year

(Fall)		
PHYS 182	**Applied Physics I**	3.0
STAT 201	**Statistics I**	4.0
	Humanities/Social science elective	3.0
	Total credits	10.0

(Winter)		
PSY 101	**General Psychology I**	3.0
	Science sequence I*	3.0
	Free elective	3.0
	Total credits	9.0

*BIO 161 or CHEM 161.

(Spring)

BLAW 201	**Business Law I**	4.0
	Science sequence II*	3.0
	Humanities/Social science elective	3.0
	Total credits	10.0

*BIO 162 or CHEM 162.

(Summer)

PRMT 210	**Rental Property and Fair Housing Law**	3.0
	Humanities/Social science elective	3.0
	Total credits	6.0

Third year

(Fall)

ACCT 115	**Financial Accounting Foundations**	4.0
CMGT 266	**Building Systems I**	3.0
PRST 211	**Computer Applications for Professionals**	3.0
	Total credits	10.0

(Winter)

CMGT 267	**Building Systems II**	3.0
FIN 301	**Introduction to Finance**	4.0
	Property Management elective (see degree requirements list)	3.0
	Total credits	10.0

(Spring)

MKTG 301 WI	**Introduction to Marketing Management**	4.0
PRMT 310	**Property Financing and Valuation**	3.0
	Property Management elective (see degree requirements list)	3.0
	Total credits	10.0

(Summer)

PRMT 315	**Property Risk Management**	3.0
	Property Management elective (see degree requirements list)	3.0
	Total credits	6.0

Fourth year

(Fall)

CAT 301	**Project Management**	3.0
DSMR 231	**Retail Principles**	3.0
	Concentration requirement (see degree requirements list)	3.0
	Total credits	9.0

(Winter)

CAT 302	**Customer Service Theory and Practice**	3.0
COM 280 **or** COM 345	**Public Relations** **Intercultural Communication**	3.0
	Free elective	3.0
	Total credits	9.0

(Spring)

CAT 303	**Client Relations Management**	3.0
PRMT 320	**Sustainable Property Management**	3.0

	Total credits	6.0

(Summer)

ORGB 300 WI	**Organizational Behavior**	4.0
	Property Management elective (see degree requirements list)	3.0
	Total credits	7.0

Fifth year

(Fall)

PRMT 325	**Human Resources for Property Managers**	3.0
CRTV 301	**Foundations in Creativity**	3.0
	Property Management elective (see degree requirements list)	3.0
	Total credits	9.0

(Winter)

PRMT 330	**Property Management Technology**	3.0
	Concentration requirement (see degree requirements list)	3.0
	Total credits	6.0

(Spring)

CMGT 262	**Building Codes**	3.0
	Free elective	3.0
	Total credits	6.0

(Summer)

	Concentration requirement (see degree requirements list)	3.0
	Property Management elective (see degree requirements list)	3.0
	Total credits	6.0

Sixth year

(Fall)

REAL 330	**Facilities and Property Management**	3.0
	Concentration requirement (see degree requirements list)	3.0
	Total credits	6.0

(Winter)

CMGT 468	**Real Estate Development**	3.0
	Concentration requirement (see degree requirements list)	3.0
	Total credits	6.0

Certificate in Affordable Housing Administration

18.0 credits

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

Certificate in Commercial Property Management

18.0 credits

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		18.0 Credits
PRMT 110	**Introduction to Property Management**	3.0
CMGT 263	**Understanding Construction Drawings**	3.0
PRMT 335	**Marketing and Leasing Residential Property**	3.0
PRMT 340	**Managing and Marketing Retail Property**	3.0
PRMT 360	**Managing and Marketing Commercial Property**	3.0
PRMT 365	**Commercial Property Appraisal**	3.0

Certificate in Housing for an Aging Population

19.0 credits

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

Certificate in Residential Property Management

18.0 credits

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		18.0 Credits
PRMT 110	**Introduction to Property Management**	3.0
PRMT 335	**Marketing and Leasing Residential Property**	3.0
Students select 12 additional credits from the following:		
PRMT 340	**Managing and Marketing Retail Property**	3.0
PRMT 345	**Managing and Marketing Housing for an Aging Population**	3.0
PRMT 350	**Affordable Housing Management**	3.0
PRMT 355	**Student Housing Management**	3.0
PRMT 356	**Military Housing Management**	3.0

Sport Management

Through Drexel's Sport Management program, 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 and 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 B. S. in Sport Management consists of 181 credits. All students enrolled in the program are required to take 52 credits of general education courses plus 24 credits of general business. These courses are supplemented by 24 credits of free electives.

The balance of the program is based on technical elective courses drawn from four major concentrations, namely: Sport Business (21 credits); Sport Marketing (18 credits); Sport Law and Ethics (21.0 credits); and Sport Media and Technology (18 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 web page.

Sport Management

Bachelor of Science Degree: 181.0 credits
Required courses (incoming students, 2009/2010)

General education requirements		52.0 Credits
ANTH 101	**Cultural Diversity**	3.0
BIO 151	**Applied Biology I**	3.0
CHEM 151	**Applied Chemistry**	3.0
COM 230	**Techniques of Speaking**	3.0
COM 270 WI	**Writing for Business**	3.0
CS 161	**Introduction to Computing**	3.0
or		
INFO 101	**Introduction to Information Technology**	3.0
CT 230	**Web Development I**	3.0
CT 240	**Web Development II**	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
MATH 101	**Introduction to Analysis I**	4.0
MATH 102	**Introduction to Analysis II**	4.0
UNIV 101	**The Drexel Experience**	2.0
	Three natural science courses*	9.0
	Two social science courses**	6.0

*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.

General business requirements		24.0 Credits
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		21.0 Credits
SMT 110	**Business of Sport**	3.0
SMT 200	**Introduction to Facility and Event Management**	3.0
SMT 225	**Sports Budgeting**	3.0
SMT 320 WI	**Economic Aspects of Sport**	3.0

SMT 340	**International Aspects of Sport Management**	3.0

Students select two (2) additional courses from the following electives to complete a minimum of 21.0 credits in this area:

SMT 220	**Recreation, Wellness and Society**	3.0
SMT 240	**Olympic Games**	3.0
SMT 270	**Sports Facilities Management**	3.0
SMT 275	**Sports Event Management**	3.0

Sport Marketing courses		**18.0 Credits**
SMT 201	**Sports Marketing, Promotion and Public Relations**	3.0
SMT 215	**Sports Ticket Sales and Operations**	3.0
SMT 300	**Quantitative Analysis /Statistics for Sports**	3.0
SMT 305	**Fundraising in Sports**	3.0
SMT 307	**Corporate Sponsorship in Sports**	3.0

Students select one (1) additional course from the following electives to complete a minimum of 18.0 credits in this area:

SMT 309	**Capital Campaigns in Athletics**	3.0
SMT 345	**Fan Experience Management**	3.0
SMT 347	**Sport Tourism**	3.0

Sport Law and Ethics courses		**21.0 Credits**
SMT 152	**Leadership in Sport and Society**	3.0
SMT 230	**Sport and the Law**	3.0
SMT 255	**Legal Foundations of Title IX**	3.0
SMT 310	**Sports Contracts**	3.0
PHIL 325	**Ethics in Sport Management**	3.0
or		
SMT 254	**Women and Minority in Sport**	3.0
SMT 260	**Sports Agents and Labor Relations**	3.0
or		
SMT 337	**Risk Management for Sports**	3.0
SMT 235	**Sport Administration and Governance**	3.0
or		
SMT 245	**NCAA Compliance**	3.0

Sport Media and Technology		**18.0 Credits**
SMT 205	**Sports Information**	3.0
SMT 250 WI	**Technology and Sport**	3.0
SMT 315	**Sports Publications and Graphics**	3.0
COM 290	**Sport and the Mass Media**	3.0

Students select two (2) additional courses from the following electives to complete a minimum of 18.0 credits in this area:

COM 260 WI	**Fundamentals of Journalism**	3.0
COM 280	**Public Relations**	3.0
COM 305	**Sports Journalism**	3.0
COM 335	**Electronic Publishing**	3.0

Portfolio requirement		**3.0 Credits**
SMT 401 WI	**Professional Portfolio**	3.0

Electives		**24.0 Credits**
	Free electives†	24.0

†Students may pursue a minor or take further studies in the sport management

Recommended Plan Of Study

BS Sport Managment
5 YR UG Co-op Concentration

Term 1		Credits
BUSN 101	Foundations of Business I	4.0
ENGL 101	Expository Writing and Reading	3.0
MATH 101	Introduction to Analysis I	4.0
SMT 110	The Business of Sport	3.0
UNIV 101	The Drexel Experience	1.0
INFO 101	Introduction to Information Technology	3.0
or		
CS 161	Introduction to Computing	3.0
	Term Credits	*18.0*

Term 2		Credits
CT 230	Web Development I	3.0
ENGL 102	Persuasive Writing and Reading	3.0
MATH 102	Introduction to Analysis II	4.0
SMT 200	Introduction to Facility and Event Management	3.0
UNIV 101	The Drexel Experience	1.0
	Natural science elective	3.0
	Term Credits	*17.0*

Term 3		Credits
ACCT 115	Financial Accounting Foundations	4.0
ANTH 101	Introduction to Cultural Diversity	3.0
CT 240	Web Development II	3.0
ENGL 103	Analytical Writing and Reading	3.0
SMT 340	International Aspects of Sport	3.0
	Term Credits	*16.0*

Term 4		Credits
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	Technology and Sport	3.0
	Natural science elective	3.0
	Term Credits	*16.0*

Term 5		Credits
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		Credits
COM 270	Business Communication	3.0
SMT 205	Sports Information	3.0
SMT 215	Sports Ticket Sales and Operations	3.0
SMT 255	Legal Foundations of Title IX	3.0
	Free elective	3.0
	Term Credits	*15.0*

Term 7		Credits
MKTG 301		

	Introduction to Marketing Management	4.0
SMT 152	Leadership in Sports & Society	3.0
SMT 310	Sports Contracts	3.0
	Sport Management "area" elective (See degree requirements for options)	3.0
	Social science elective	3.0
	Term Credits	*16.0*

Term 8		Credits
ORGB 300	Organizational Behavior	4.0
SMT 315	Sports Publications and Graphics	3.0
	Free elective	3.0
	Two Sport Management "area" electives (See degree requirements for options)	6.0
	Term Credits	*16.0*

Term 9		Credits
SMT 309	Economic Aspects of Sport	3.0
SMT 307	Corporate Sponsorships in Sports	3.0
	Free elective	3.0
	Sport Management "area" elective (See degree requirements for options)	3.0
	Social science elective	3.0
	Term Credits	*15.0*

Term 10		Credits
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 (See degree requirements for options)	3.0
	Term Credits	*12.0*

Term 11		Credits
	Free electives	6.0
	Two Sport Management "area" electives (See degree requirements for options)	6.0
	Term Credits	*12.0*

Term 12		Credits
SMT 401	Professional Portfolio	3.0
	Free electives	6.0
	Sport Management "area" elective (See degree requirements for options)	3.0
	Term Credits	*12.0*
	Total Credits (minimum)	**181.0**

Minor in Coaching Leadership

24.0 credits

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.

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Required courses		**24.0 Credits**
SMT 101	**Principles of Coaching**	3.0
SMT 102	**Principles of Coaching II**	3.0
SMT 152	**Leadership in Sport**	3.0
SMT203	**Sports Conditioning**	3.0
SMT 210	**Prevention and Care of Athletic Injuries**	3.0
PSY 245 WI	**Sports Psychology**	3.0
NFS 310	**Nutrition and Sports**	3.0
SMT 475	**Coaching Practicum**	3.0