Drexel University
CATALOG 2011-2012

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Goodwin College
School of Technology and Professional Studies

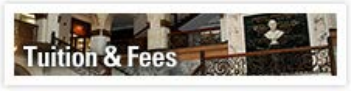
About the School

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. The minimum number of credits required for the degree of Bachelor of Science varies from one program to another. All graduating students, regardless of the program, must have earned a grade point average of 2.0 or higher for all coursework undertaken at Drexel University.

Degree requirements

Requirements for Goodwin's School of Technology and 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.



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

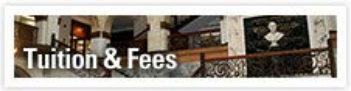
The College offers several degree completion options to students with busy schedules or wishing to complete previous studies.

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.



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The College works seamlessly with organizations to provide the support and training that their employees want and that management needs in order to maintain a competitive edge in their industry. A Drexel education is a benefit that makes sense for both employers and employees. It enhances an organization's reputation, improves employee retention rates, and makes for a skilled and talented workforce.

Drexel University and Burlington County College (BCC) programs

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

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

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

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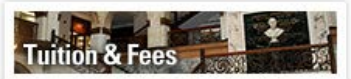
The Goodwin College of Professional Studies

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.



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Architecture

About the Major

The mission of the Drexel Architecture Program is to pursue architecture as a professional discipline by combining the rigors of the academy with the realities of contemporary architectural practice. The program does this by providing a strong, broadly based curriculum in the arts, humanities, social sciences and the applied sciences coupled with professional courses taught by faculty who reflect the broad diversity of architectural practice today.

At Drexel there are two paths to an accredited Bachelor of Architecture degree, serving two distinct populations.

For all Drexel architecture students, work experience obtained before graduation can receive credit in the Intern Development Program (IDP), which is part of most state licensure requirements. The Bachelor of Architecture Program is accredited by the National Architectural Accrediting Board (NAAB).

Accreditation
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 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Drexel University, Antoinette Westphal College of Media Arts & Design, Department of Architecture + Interiors offers the following NAAB-accredited degree program(s):

2+4 Option:	6 year program (2 years full-time, 4 years part-time) Bachelor of Architecture 227 undergraduate quarter-term credits
Part-Time Evening Option:	7 year part-time program Bachelor of Architecture 227 undergraduate quarter-term credits
Next accreditation visit for both tracks:	2012

About the 2+4 Option

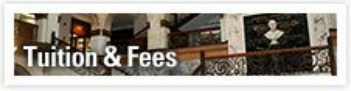
The 2+4 Option is an accelerated route designed for a small class of well-prepared students entering directly from high school. In this program two years of full-time coursework address the basic principles of architectural design and satisfy fundamental University core requirements in the arts and sciences as well as those job-related skills that are needed for entry-level professional positions. A comprehensive review of performance will take place after each year to ensure that students are making sufficient progress in all areas.

After successfully completing the minimum requirements of the full-time phase, students find full-time employment in the building industry, including architecture firms, while continuing their academic program part-time in the evening for four additional years. By combining work and study, Drexel students may be able to simultaneously satisfy their required internship for licensure (IDP) while completing their professional degree, thus qualifying for the registration exam on graduation in most jurisdictions.

About the Part-time Evening Program

The Part-Time Evening Option is one of only two part-time evening architectural programs in the United States, leading to an accredited Bachelor of Architecture degree. Designed for non-traditional and transfer students, this program offers all courses part-time in the evening, enabling students to work full-time. The Evening Program sequence is seven years, but transfer students with university-level design credits can reduce its length by meeting specific program requirements through transcript and portfolio review. All part-time evening courses are offered through Goodwin College of Professional Studies.

Both tracks of the Bachelor of Architecture program are accredited by the National Architectural Accrediting Board (NAAB). All Drexel architecture students may be able to receive credit in the Intern Development Program (IDP) for work experience obtained before graduation, which is part of most state licensure requirements.



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Additional Information
For more information, please visit the website of the Architecture Program. For advising guidelines and transfer information please review the Architecture Program's curriculum page.

Facilities
The Department's offices and 2 + 4 Option studios are located on the first floor of 3201 Arch Street--a Drexel loft building of strong architectural character. This facility also contains supporting seminar and computer rooms. Teaching facilities for evening program architectural instruction are located in a loft space on the fourth floor of the Main Building.

Note: 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.

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Architecture: 2 + 4 Program

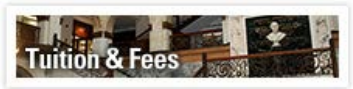
Bachelor of Architecture Degree: 227.0 quarter credits.

Degree Requirements

Incoming students, 2011/2012

General education requirements		69.0 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 101	Introduction to Analysis I	4.0
MATH 102	Introduction to Analysis II	4.0
PHIL 317	Ethics and the Design Profession	3.0
PHYS 103	General Physics I	4.0
PHYS 104	General Physics II	4.0
UNIV 101	The Drexel Experience	2.0
	Humanities electives	6.0
	Social science electives	9.0
	Free electives	24.0

Studios (must be taken in order)		63.0 Credits
ARCH 101	Studio 1-A	4.5
ARCH 102	Studio 1-B	4.5
ARCH 103	Studio 2-A	4.5
ARCH 104	Studio 2-B*	4.5
ARCH 105	Studio 3-A	4.5
ARCH 106	Studio 3-B	4.5
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



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ARCH 361	Studio 6-1*	4.0
ARCH 362	Studio 6-2	4.0
ARCH 363	Studio 6-3	4.0

Thesis sequence		**24.0 Credits**
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 Architecture Program's minimum studio advancement requirements. See the Program's Advising Guidelines for more details.

Required professional courses (Part-time option)		**50.0 Credits**
ARCH 14I	Architecture and Society I	3.0
ARCH 142	Architecture and Society II	3.0
ARCH 143	Architecture and Society III	3.0
ARCH 150	Introduction to CADD	4.0
ARCH 151	Architectural Drawing I	3.0
ARCH 152	Architectural Drawing II	3.0
ARCH 153	Introduction to CADD II	4.0
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
ARCH 335	Professional Practice I	2.0
ARCH 336	Professional Practice II	2.0
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 WI	History of the Modern Movement I	3.0
ARCH 345 WI	History of the Modern Movement II	3.0

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

ARCH 341 WI	Theories of Architecture I	3.0
ARCH 342 WI	Theories of Architecture II	3.0
ARCH 346 WI	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 WI	Special Topics in Architecture	3.0

Professional electives		**9.0 Credits**
Any three of the following courses		
ARCH 157	Architectural Representation V	3.0
ARCH 171	Design Build	3.0
ARCH 431	Architectural Programming	3.0
ARCH 432	The Development Process	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 463	Emerging Technologies	3.0
ARCH 464	Building Enclosure Design	3.0
ARCH 465	Energy and Architecture	3.0
ARCH 499 WI	Special Topics in Architecture (Writing Intensive)	3.0
CMGT	An approved Construction Management course	3.0

Writing-Intensive Course Requirements
In order to graduate, all students 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 may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List on the Drexel University Writing Center page. Students scheduling their courses in Banner/DrexelOne can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

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Architecture

Bachelor of Architecture Degree: Total 227.0 minimum required credits

2 + 4 Program: Sample Plan of Study

Freshman year

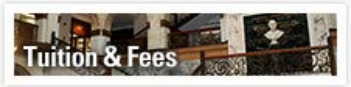
Term 1		Credits
ARCH 101	Studio 1-A	4.5
ARCH 151	Architectural Drawing I	3.0
ENGL 101	Expository Writing and Reading	3.0
MATH 101	Mathematical Analysis I	4.0
UNIV 101	The Drexel Experience I	1.0
	Total credits	15.5

Term 2		
ARCH 102	Studio 1-B	4.5
ARCH 152	Architectural Drawing II	3.0
ENGL 102	Persuasive Writing and Reading	3.0
MATH 102	Mathematical Analysis II	4.0
UNIV 101	The Drexel Experience II	1.0
	Total credits	15.5

Term 3		
ARCH 103	Studio 2-A	4.5
ARCH 150	Introduction to CADD I	4.0
ENGL 103	Analytical Writing and Reading	3.0
	Humanities elective	3.0
	Free elective	3.0
	Total credits	17.5

Sophomore year

Term 4		
ARCH 104	Studio 2-B*	4.5
ARCH 14I WI	Architecture and Society I	3.0



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ARCH 161	Architectural Construction	3.0
PHYS 103	General Physics I	4.0
	Free elective	3.0
	Total credits	17.5

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

Term 5

ARCH 105	Studio 3-A	4.5
ARCH 142 WI	Architecture and Society II	3.0
ARCH 153	Introduction to CAD II	4.0
PHYS 104	General Physics II	4.0
	Free elective	3.0
	Total credits	18.5

Term 6

ARCH 106	Studio 3-B	4.5
ARCH 143 WI	Architecture and Society III	3.0
	Social Science elective	3.0
	Free electives	6.0
	Total credits	16.5

Third year (Part-time)

Term 7

ARCH 241	Studio 4-1*	4.0
CIVE 261	Materials and Structural Behavior I	3.0
	Total credits	7.0

Term 8

ARCH 242	Studio 4-2	4.0
CIVE 262	Materials and Structural Behavior II	3.0
	Total credits	7.0

Term 9

ARCH 243	Studio 4-3	4.0
CIVE 263	Materials and Structural Behavior III	3.0
	Total credits	7.0

Term 10 - Summer Quarter

	History/Theory elective (See Degree Requirements)	3.0
	Professional elective	3.0
	Humanities elective	3.0
	Total credits	9.0

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

Fourth year (Part-time)

Term 11

ARCH 351	Studio 5-1	4.0
ARCH 261	Environmental Systems I	3.0
	Total credits	7.0

Term 12

ARCH 352	Studio 5-2	4.0
ARCH 262	Environmental Systems II	3.0
	Total credits	7.0

Term 13

ARCH 353	Studio 5-3	4.0
ARCH 263	Environmental Systems III	3.0
	Total credits	7.0

Term 14 - Summer Quarter

	Two History/Theory electives	6.0
	Social science elective	3.0
	Total credits	9.0

Fifth year (Part-time)

Term 15		Credits
ARCH 361	Studio 6-1*	4.0
ARCH 335	Professional Practice I	3.0
	Free elective	3.0
	Total credits	9.0

Term 16

ARCH 362	Studio 6-2	4.0
ARCH 336	Professional Practice II	3.0
	Social Science elective	3.0
	Total credits	9.0

Term 17

ARCH 363	Studio 6-3	4.0
PHIL 317	Ethics and the Design Profession	3.0
	Total credits	7.0

Term 18 - Summer Quarter

	Professional elective	3.0
	Free elective	3.0
	Total credits	6.0

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

Sixth year (Part-time)

Term 19		Credits
ARCH 496	Thesis I	8.0
	History/Theory elective	3.0
	Total credits	11.0

Term 20

ARCH 497	Thesis II	8.0
	Professional elective	3.0
	Total credits	11.0

Term 22

ARCH 498	Thesis III	8.0
	Professional elective	3.0
	Total credits	11.0

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Architecture: Part-Time Evening Program

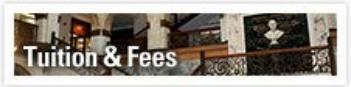
Bachelor of Architecture Degree: 227.0 quarter credits.

Degree Requirements

Incoming students, 2011/2012

General education requirements		**69.0 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
PHIL 317	Ethics and the Design Profession	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	6.0
	Social science electives	9.0
	Free electives	24.0

Studios (must be taken in order)		**63.0 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



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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

Thesis sequence		**24.0 Credits**
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 Architecture Program's minimum studio advancement requirements. See the Program's Advising Guidelines for more details.

Required professional courses (2+4 option)		**48.0 Credits**
ARCH 14I	Architecture and Society I	3.0
ARCH 142	Architecture and Society II	3.0
ARCH 143	Architecture and Society III	3.0
ARCH 150	Introduction to CADD I	4.0
ARCH 155	Basic Architectural Drawing	3.0
ARCH 156	Graphic Communications I	3.0
ARCH 153	Introduction to CADD II	4.0
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
ARCH 335	Professional Practice I	3.0
ARCH 336	Professional Practice II	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 WI	History of the Modern Movement I	3.0
ARCH 345 WI	History of the Modern Movement II	3.0

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

ARCH 341 WI	Theories of Architecture I	3.0
ARCH 342 WI	Theories of Architecture II	3.0
ARCH 346 WI	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 WI	Special Topics in Architecture	3.0

Professional electives		**9.0 Credits**
Any three of the following courses*		
ARCH 157	Architectural Representation V	3.0
ARCH 171	Design Build	3.0
ARCH 431	Architectural Programming	3.0
ARCH 432	The Development Process	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 463	Emerging Technologies	3.0
ARCH 464	Building Enclosure Design	3.0
ARCH 465	Energy and Architecture	3.0
ARCH 499 WI	Special Topics in Architecture (Writing Intensive)	3.0
CMGT	An approved Construction Management course	3.0

Writing-Intensive Course Requirements
In order to graduate, all students 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 may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List on the Drexel University Writing Center page. Students scheduling their courses in Banner/DrexelOne can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

Architecture

Bachelor of Architecture Degree: 227.0 credits

Part-time Evening Program: Sanmple 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 schedule.

First year

Term 1		Credits
ARCH 111	Studio 1-1	3.0
ARCH 155	Basic Architectural Drawing	3.0
ENGL 101	Expository Writing and Reading	3.0
	Total credits	9.0

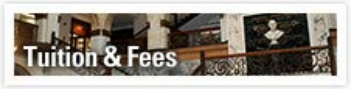
Term 2		
ARCH 112	Studio 1-2	3.0
ARCH 156	Graphic Communication I	3.0
ENGL 102	Persuasive Writing and Reading	3.0
	Total credits	9.0

Term 3		
ARCH 113	Studio 1-3	3.0
ARCH 161	Architectural Construction	3.0
ENGL 103	Techniques of Analysis Evaluation	3.0
	Total credits	9.0

Term 4 - Summer Quarter		
ARCH 150	Introduction to CADD I	4.0
	Free elective	3.0
	Total credits	7.0

Second year

Term 5		Credits
ARCH 121	Studio 2-1	3.0
ARCH 14I WI	Architecture and Society I	3.0



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MATH 181	Mathematical Analysis I	3.0
	Total credits	9.0

Term 6

ARCH 122	Studio 2-2	3.0
ARCH 142	Architecture and Society II	3.0
MATH 183	Mathematical Analysis II	3.0
	Total credits	9.0

Term 7

ARCH 123	Studio 2-3	3.0
ARCH 143	Architecture and Society III	3.0
MATH 182	Mathematical Analysis III	3.0
	Total credits	9.0

Term 8 - Summer Quarter

ARCH 153	Introduction to CADD II	4.0
	Social science elective	3.0
	Total credits	7.0

Third year

Term 9

ARCH 231	Studio 3-1*	3.0
PHYS 182	Applied Physics I	3.0
	Social science elective	3.0
	Total credits	9.0

Term 10

ARCH 232	Studio 3-2	3.0
PHYS 183	Applied Physics II	3.0
	Humanities elective	3.0
	Total credits	9.0

Term 11

ARCH 233	Studio 3-3	3.0
PHYS 184	Applied Physics III	3.0
	Humanities elective	3.0
	Total credits	9.0

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

Term 12 - Summer quarter

	Free electives	6.0
	Total credits	6.0

Fourth year

Term 13

ARCH 241	Studio 4-1	4.0
CIVE 261	Materials and Structural Behavior I	3.0
	Total credits	7.0

Term 14

ARCH 242	Studio 4-2	4.0
CIVE 262	Materials and Structural Behavior II	3.0
	Total credits	7.0

Term 15

ARCH 243	Studio 4-3	4.0
CIVE 263	Materials and Structural Behavior III	3.0
	Total credits	7.0

Term 16

	History/Theory elective	3.0
	Professional elective	3.0
	Free elective	3.0
	Total credits	9.0

Fifth year

Term 17		Credits
ARCH 351	Studio 5-1	4.0
ARCH 261	Environmental Systems I	3.0
	Total credits	7.0

Term 18

ARCH 352	Studio 5-2	4.0
ARCH 262	Environmental Systems II	3.0
	Total credits	7.0

Term 19

ARCH 353	Studio 5-3	4.0
ARCH 263	Environmental Systems III	3.0
	Total credits	7.0

Term 20 - Summer Quarter		
	History/Theory elective	3.0
	Professional elective	3.0
	Free elective	3.0
	Total credits	9.0

Sixth year

Term 21		
ARCH 361	Studio 6-1*	4.0
ARCH 335	Professional Practice I	3.0
	Free elective	3.0
	Total credits	9.0
Term 22		
ARCH 362	Studio 6-2	4.0
ARCH 336	Professional Practice II	3.0
	Social science elective	3.0
	Total credits	9.0
Term 23		
ARCH 363	Studio 6-3	4.0
PHIL 317	Ethics and the Design Profession	3.0
	Total credits	7.0
Term 24 - Summer quarter		
	History/Theory elective (See Degree Requirements)	3.0
	Professional elective	3.0
	Total credits	6.0

*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)

Term 25		Credits
ARCH 496	Thesis I	8.0
	History/Theory elective (See Degree Requirements)	3.0
	Total credits	11.0
Term 26		
ARCH 497	Thesis II	8.0
	Free elective	3.0

	Total credits	11.0

Term 27

ARCH 498	Thesis III	8.0
	Free elective	3.0
	Total credits	11.0

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Construction Management

About the Major

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.

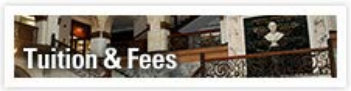
Students in Drexel's Construction Management program receive broad academic, technical, business, and construction management courses that are designed to produce well-rounded construction professionals.

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
- 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 page at http://goodwin.drexel.edu/cmgt/.



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Construction Management

Bachelor of Science Degree: 184.5 quarter credits

Degree Requirements

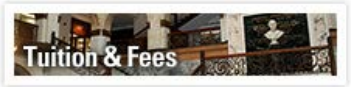
Incoming students, 2011/2012

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 WI	Business Communication	3.0
COM 310 WI	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



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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 WI	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 Capstone		3.0 Credits
CMGT 499	CM Independent Study - Project	3.0

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

Writing-Intensive Course Requirements

In order to graduate, all students 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 may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List on the Drexel University Writing Center page. Students scheduling their courses in Banner/DrexelOne can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

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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
	Humanities/Social Science elective	3.0
	Construction Management elective (See degree requirements for list)	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
	Free elective	3.0
	Two Construction Management electives (See degree requirements for list)	6.0
	Humanities/Social Science elective	3.0
	Term Credits	*15.0*

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)	184.5

Construction Management: Real Estate Concentration

Bachelor of Science Degree: 184.5 quarter credits

Degree Requirements

Incoming students, 2011/2012

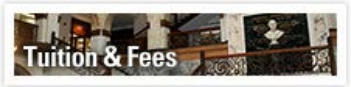
The concentration in real estate provides students with training in issues such as project finance, real estate as investment, design and construction, operations, development law, environmental remediation, public policy, market analysis, and architecture. For this specialization, students take the 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 WI	Business Communication	3.0
COM 310 WI	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



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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 WI	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**

Writing-Intensive Course Requirements
In order to graduate, all students 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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Communications and Applied Technology

About the Major

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

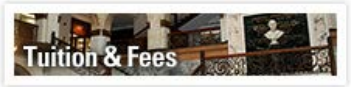
- Combine communications and technology skills training with study of sound business fundamentals.
- Hone written, oral, and interpersonal communication skills for effectiveness in a variety of organizational settings, with both internal and external audiences.
- Expand written communication skills including 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.

Curriculum

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

English Composition
Humanities
Social Sciences
Physical Sciences
Mathematics
Business
Computing Technology
Customer Operations

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



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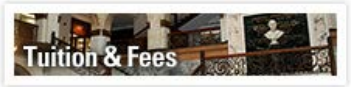
Communications and Applied Technology

Program Delivery Options

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

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

- *Online option.* Students who desire a quality Drexel education but who do not live or work in close proximity to the university can complete their degree entirely online. The same distinguished Drexel full-time and adjunct faculty that teach on campus also teach online courses using the same syllabus and learning objectives. Please visit the Drexel E-Learning web site for more information.



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Communications and Applied Technology

Bachelor of Science Degree: 180.0 quarter credits

Degree Requirements

Incoming students, 2011/2012

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

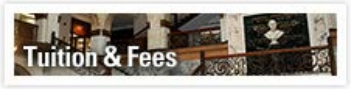
Mathematics requirements		9.0 Credits
MATH 181	Mathematical Analysis I	3.0
MATH 182	Mathematical Analysis II	3.0
MATH 183	Mathematical Analysis III	3.0

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, 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

Business Minor 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	Introduction to Marketing Management	4.0
ORGB 300 WI	Organizational Behavior	4.0



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OPM 200	Operations Management	4.0
STAT 201	Statistics I	4.0

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

Communications and Applied Technology	**60.0 Credits**	
CAT 200	Strategies for Lifelong Learning	3.0
CAT 201 WI	Interpersonal Communication	3.0
CAT 302	Customer Service Theory and Practice	3.0
CAT 303	Client Relations Management	3.0
CAT 360	Applied Organizational Research	3.0
CAT 491	Senior Project in 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
PROJ 301	Project Management	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.

Writing-Intensive Course Requirements
In order to graduate, all students 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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Computing and Security Technology

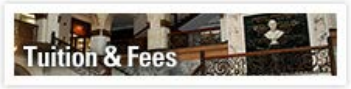
About the Major

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 College's School of Technology and Professional Studies web site.



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Computing and Security Technology

Bachelor of Science Degree: 185.0 quarter credits

Degree Requirements

Incoming students, 2011/2012

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 electives*	**9.0 Credits**

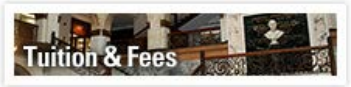
***Students select 9.0 credits from the following subject areas: ANAT, BIO, CHEM, ENVS, FDSC, NFS, PHEV, and PHYS. Courses from other departments may be considered with advisor approval.**

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



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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 Technology	3.0
CT 362	Network Auditing Tools	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

Writing-Intensive Course Requirements
In order to graduate, all students 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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Culinary Arts

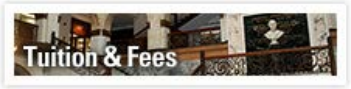
About the Major

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 page on the College's website.



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Hospitality Management

Program Delivery Options

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

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

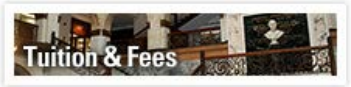
Four plus One option BS/MBA combined degree, with co-op experience:
This option combines the four-year BS degree followed by the one-year Professional MBA to qualify freshmen applicants. Incoming freshmen will generally have a minimum of 1300 on the SAT, a GPA of 3.5 or higher, and be in the top 10%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

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

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

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

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



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Culinary Arts

Bachelor of Science Degree: 184.0 quarter credits

Degree Requirements

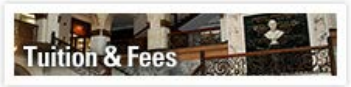
Incoming students, 2011/2012

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		16.0 - 19.0

* 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, FMVD, 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



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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 360	Hospitality Industry Public Relations	3.0
HRM 455	Hospitality in Human Resource Management	3.0

Culinary arts requirements **46.0 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 325	Garde Manger Lab	3.0
CULA 405 WI	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 **6.0 - 9.0 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	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 Integrated Marketing Communications	4.0
MKTG 324	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 353	Business-to-Business Marketing	4.0
MKTG 355	Interactive Marketing	4.0
MKTG 356	Consumer Behavior	4.0
MKTG 357	Global Marketing	4.0
MKTG 358	Transportation and Logistics	4.0

Writing-Intensive Course Requirements

In order to graduate, all students 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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Recommended Plan Of Study

BS Culinary Arts, with Business Administration Minor

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 & Food	3.0
	Term Credits	*18.0*

Term 4		Credits
CULA 121	Techniques & Traditions II	3.0
CULA 125	Found of Professional Baking	3.0
ECON 202	Principles of Macroeconomics	4.0
HRM 220	Purchasing for the Hospitality Industry	3.0
	Free elective	3.0
	Term Credits	*16.0*

Term 5		Credits
CULA 315	Fund of American Cuisine	3.0
CULA 325	Garde Manger Lab	3.0
ECON 202	Principles of Macroeconomics	4.0
HRM 215	Commercial Food Production	4.0
	Arts and Humanities elective	3.0
	Term Credits	*17.0*

Term 6		Credits
CULA 216	A la Carte	3.0
CULA 220	Patisserie I	2.0
CULA 235	Professional Dining Room Management	2.0

FDSC 154	Foods: Composition, Interaction and Formulation	4.0
STAT 202	Business Statistics II	4.0
	Term Credits	*15.0*

Term 7		Credits
COOP 101	Career Management/Professional Development	0.0
CULA 300	Fund of Vegetarian Cuisine	3.0
CULA 305	Fund of Italian Cuisine	3.0
FIN 301	Introduction to Finance	4.0
	Free electives	6.0
	Term Credits	*16.0*

Term 8		Credits
CULA 225	Patisserie II	2.0
CULA 310	Fund 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 Industry Public Relations	3.0
	Free elective	3.0
	Term Credits	*15.0*

Term 10		Credits
CULA 316	Butchery Lab	2.0
ORGB 300	Organizational Behavior	4.0
	Arts and Humanities elective	3.0
	Social science elective	3.0
	Culinary Arts (CULA) elective	2.0
	Free elective	2.0
	Term Credits	*16.0*

Term 11		Credits
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
	Free elective	3.0
	Term Credits	*16.0*

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

	Total Credits (minimum)	184.0

Recommended Plan Of Study

BS Culinary Arts, with Entrepreneurship Minor

4 YR UG Co-op Concentration

Entrepreneurship Min

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 & Food	3.0
	Term Credits	*18.0*

Term 4		Credits
CULA 121	Techniques & Traditions II	3.0
CULA 125	Found of Professional Baking	3.0
HRM 220	Purchasing for the Hospitality Industry	3.0
MGMT 260	Introduction to Entrepreneurship	4.0
	Free elective	3.0
	Term Credits	*16.0*

Term 5		Credits
CULA 315	Fund of American Cuisine	3.0
CULA 325	Garde Manger Lab	3.0
HRM 215	Commercial Food Production	4.0
MGMT 364	Technology Management	4.0
	Arts and Humanities elective	3.0
	Term Credits	*17.0*

Term 6		Credits
ACCT 120	Accounting Essentials for New Ventures	4.0
CULA 216	A la Carte	3.0
CULA 220	Patisserie I	2.0

CULA 235	Professional Dining Room Management	2.0
FDSC 154	Foods: Composition, Interaction and Formulation	4.0
	Term Credits	*15.0*

Term 7		Credits
COOP 101	Career Management/Professional Development	0.0
CULA 300	Fund of Vegetarian Cuisine	3.0
CULA 305	Fund of Italian Cuisine	3.0
MGMT 365	Business Plan for Entrepreneurs	4.0
	Arts and Humanities elective	3.0
	Free elective	3.0
	Term Credits	*16.0*

Term 8		Credits
CULA 225	Patisserie II	2.0
CULA 310	Fund of French Cuisine	3.0
CULA 405	Culture and Gastronomy I	3.0
CULA 415	Food Styling and Show Competition	3.0
	Free elective	3.0
	Term Credits	*14.0*

Term 9		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
	Free elective	3.0
	Term Credits	*15.0*

Term 10		Credits
CULA 316	Butchery Lab	2.0
	Free elective	2.0
	Culinary Arts (CULA) elective	2.0
	Arts and Humanities elective	3.0
	Entrepreneurship elective (see requirements)	4.0
	Social science elective	3.0
	Term Credits	*16.0*

Term 11		Credits
HRM 320	Hospitality Management Information Systems	3.0
HRM 335	Beverage Management	3.0
HRM 350	Cost Controls in Hospitality	3.0
	Culinary Arts (CULA) elective	3.0
	Free elective	3.0
	Term Credits	*15.0*

Term 12		Credits
CULA 420	Senior Design Project	3.0
HRM 455	Hospitality Human Resources Management	3.0
	Culinary Arts (CULA) elective	2.0
	Social science elective	3.0
	Entrepreneurship elective (see requirements)	4.0
	Term Credits	*15.0*

	Total Credits (minimum)	184.0

Recommended Plan Of Study

BS Culinary Arts, with a Marketing Minor

4 YR UG Co-op Concentration

Marketing 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 & Food	3.0
	Term Credits	*18.0*

Term 4		Credits
CULA 121	Techniques & Traditions II	3.0
CULA 125	Found of Professional Baking	3.0
HRM 220	Purchasing for the Hospitality Industry	3.0
	Free elective	3.0
	Social science elective	3.0
	Term Credits	*15.0*

Term 5		Credits
CULA 315	Fund of American Cuisine	3.0
CULA 325	Garde Manger Lab	3.0
HRM 215	Commercial Food Production	4.0
	Social science elective	3.0
	Arts and Humanities elective	3.0
	Term Credits	*16.0*

Term 6		Credits
CULA 216	A la Carte	3.0
CULA 220	Patisserie I	2.0
CULA 235	Professional Dining Room Management	2.0

FDSC 154	Foods: Composition, Interaction and Formulation	4.0
	Free elective	3.0
	Term Credits	*14.0*

Term 7		Credits
COOP 101	Career Management/Professional Development	0.0
CULA 300	Fund of Vegetarian Cuisine	3.0
CULA 305	Fund of Italian Cuisine	3.0
MKTG 301	Introduction to Marketing Management	4.0
	Free elective	3.0
	Arts and Humanities elective	3.0
	Term Credits	*16.0*

Term 8		Credits
CULA 225	Patisserie II	2.0
CULA 310	Fund of French Cuisine	3.0
CULA 405	Culture and Gastronomy I	3.0
CULA 415	Food Styling and Show Competition	3.0
	Marketing (MKTG) elective	4.0
	Free elective	3.0
	Term Credits	*18.0*

Term 9		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	2.0
	Term Credits	*14.0*

Term 10		Credits
CULA 316	Butchery Lab	2.0
	Culinary Arts (CULA) elective	2.0
	Marketing (MKTG) elective	4.0
	Free elective	2.0
	Arts and Humanities elective	3.0
	Term Credits	*13.0*

Term 11		Credits
HRM 320	Hospitality Management Information Systems	3.0
HRM 335	Beverage Management	3.0
HRM 350	Cost Controls in Hospitality	3.0
MKTG 380	Seminar in Marketing Strategy	4.0
	Marketing (MKTG) elective	4.0
	Term Credits	*17.0*

Term 12		Credits
CULA 420	Senior Design Project	3.0
HRM 455	Hospitality Human Resources Management	3.0
	Marketing (MKTG) elective	4.0
	Culinary Arts (CULA) elective	3.0
	Free elective	3.0
	Term Credits	*16.0*

	Total Credits (minimum)	184.0

Culinary Science

About the Major

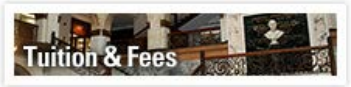
Culinary scientists learn to integrate and apply knowledge from the disciplines of chemistry, microbiology, culinary arts, hospitality management, food science, and nutrition in order to preserve, process, package, and distribute foods that are safe, nutritious, and delicious. Students majoring in Culinary 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.



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Hospitality Management

Program Delivery Options

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

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

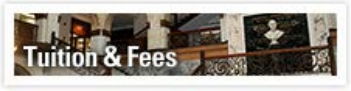
Four plus One option BS/MBA combined degree, with co-op experience:
This option combines the four-year BS degree followed by the one-year Professional MBA to qualify freshmen applicants. Incoming freshmen will generally have a minimum of 1300 on the SAT, a GPA of 3.5 or higher, and be in the top 10%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

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

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

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

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



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Culinary Science

Bachelor of Science Degree: 185.0 quarter credits

Degree Requirements

Incoming students, 2011/2012

Written Analysis and Communication		**15.0 Credits**
COM 230	Techniques of Speaking	3.0
COM 310 WI	Technical Communication	3.0
ENGL 101	Expository Writing and Reading	3.0
ENGL 102	Persuasive Writing and Reading	3.0
ENGL 103	Analytical Writing and Reading	3.0

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

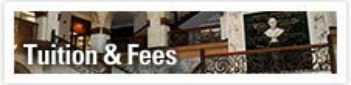
*Students may substitute MATH 181, MATH 182, and MATH 183 with permission from an advisor.

Nutrition		**8.0 Credits**
NFS 230	Intermediate Nutrition	4.0
NFS 365 WI	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 122	Cells and Genetics	4.5
BIO 126	Physiology and Ecology	4.5

Chemistry		**17.0 Credits**
CHEM 101	General Chemistry I	3.5



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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		**36.0 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 460	Food Chemistry	3.0
FDSC 461	Food Analysis	3.0
FDSC 468	Functional Foods	3.0
FDSC 490	Food Science Seminar	1.0
FDSC 491	Senior Project I	2.0
FDSC 492	Senior Project II	2.0

Hospitality Management/Culinary Arts Requirements		**34.0 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 WI	Culture and Gastronomy I	3.0
CULA 410	Culture and Gastronomy II	3.0

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

Business Minor or Science Concentration Requirements	**18.0 - 32.0 Credits**

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

Science Concentration Option Requirements	**18.0 -23.0 Credits**

CHEM 230	Quantitative Analysis	3.0
CHEM 231 WI	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	3.0
and		
BIO 222	Microbiology Laboratory	2.0
BIO 312	Genetically Modified Foods	2.0
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

*BIO 221 + BIO 222 counts as one course.

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	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	Marketing Channels and Distribution Systems	4.0
MKTG 326	Marketing Research	4.0
MKTG 353	Business-to-Business Marketing	4.0
MKTG 356	Consumer Behavior	4.0
MKTG 357	Global Marketing	4.0
MKTG 358	Transportation and Logistics	4.0

Writing-Intensive Course Requirements
In order to graduate, all students 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 may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List on the Drexel University Writing Center page. Students scheduling their courses in Banner/DrexelOne can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

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

Term 5		Credits
CULA 315	Fund of American Cuisine	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 215	Commercial Food Production	4.0
	Free elective	3.0
	Term Credits	*14.0*

Term 6		Credits
BIO 126	Physiology and Ecology	4.5
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)	3.0

	elective	
	Term Credits	*16.5*

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	Found 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 460	Food Chemistry	3.0
FDSC 468	Functional Foods	3.0
FDSC 491	Senior Project I	2.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	*15.0*

Term 12		Credits
COM 310	Technical Communication	3.0
FDSC 490	Seminar in Food Science	1.0
FDSC 492	Senior Project II	2.0
STAT 202	Business Statistics II	4.0
	Free elective	3.0
	Term Credits	*13.0*

	Total Credits (minimum)	185.0

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

Term 5		Credits
CULA 315	Fund of American Cuisine	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
HRM 215	Commercial Food Production	4.0
	Culinary Arts (CULA) or HRM (Hospitality Management) elective	3.0
	Term Credits	*14.0*

Term 6		Credits
BIO 126	Physiology and Ecology	4.5
ECON 201	Principles of Microeconomics	4.0
ORGB 300	Organizational Behavior	4.0
	Free elective	3.0

	Term Credits	*15.5*

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) elective	3.0
	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 460	Food Chemistry	3.0
FDSC 468	Functional Foods	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	Found 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
FDSC 491	Senior Project I	2.0
MKTG 347	New Product Development	4.0
STAT 201	Introduction to Business Statistics	4.0
	Term Credits	*19.0*

Term 12		Credits
COM 310	Technical Communication	3.0
FDSC 490	Seminar in Food Science	1.0
FDSC 492	Senior Project II	2.0
STAT 202	Business Statistics II	4.0
	Free elective	3.0
	Term Credits	*13.0*

	Total Credits (minimum)	184.0

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

Term 5		Credits
COM 230	Techniques of Speaking	3.0
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	*14.0*

Term 6		Credits
ACCT 120	Accounting Essentials for New Ventures	4.0
BIO 126	Physiology and Ecology	4.5
MGMT 260	Introduction to Entrepreneurship	4.0
ORGB 300	Organizational Behavior	4.0
	Term Credits	*16.5*

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

Term 12		Credits
COM 310	Technical Communication	3.0
FDSC 490	Seminar in Food Science	1.0
FDSC 492	Senior Project II	2.0
STAT 202	Business Statistics II	4.0
	Culinary Arts (CULA) or HRM (Hospitality Management) elective	3.0
	Term Credits	*13.0*
	Total Credits (minimum)	186.0

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

Term 5		Credits
COM 230	Techniques of Speaking	3.0
CULA 315	Fund of American Cuisine	3.0
FDSC 270	Microbial Food Safety and Sanitation	4.0
	Culinary Arts (CULA) or HRM (Hospitality Management) elective	3.0
	Term Credits	*13.0*

Term 6		Credits
BIO 126	Physiology and Ecology	4.5
HRM 215	Commercial Food Production	4.0
STAT 201	Introduction to Business Statistics	4.0
	Free elective	3.0

	Term Credits	*15.5*

Term 7		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) elective	3.0
	Term Credits	*17.0*

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
	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
FDSC 451	Food Microbiology Laboratory	2.0
CULA 125	Found of Professional Baking	3.0
CULA 405	Culture and Gastronomy I	3.0
FDSC 450	Food Microbiology	3.0
	Marketing (MKTG) elective	4.0
	Term Credits	*15.0*

Term 11		Credits
CULA 410	Culture and Gastronomy II	3.0
FDSC 460	Food Chemistry	3.0
FDSC 468	Functional Foods	3.0
FDSC 491	Senior Project I	2.0
MKTG 347	New Product Development	4.0
	Term Credits	*15.0*

Term 12		Credits
COM 310	Technical Communication	3.0
FDSC 490	Seminar in Food Science	1.0
FDSC 491	Senior Project I	2.0
MKTG 380	Seminar in Marketing Strategy	4.0
	Marketing (MKTG) elective	4.0
	Term Credits	*14.0*

	Total Credits (minimum)	185.0

Engineering Technology

About the Major

The Bachelor of Science (BS) degree in Engineering Technology provides an integrated educational experience directed toward the development to apply fundamental knowledge to the solution of practical technological problems.

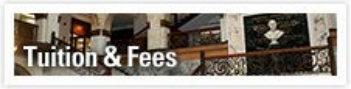
All students enrolled in the program are required to take general education courses, including mathematics, sciences and liberal arts. During their sophomore year, students need to choose one of the four available concentrations, namely biomedical, electrical, industrial, or mechanical engineering technology. These concentrations consist of core fundamental courses, technical electives, free electives, and a three-term senior design project reflecting industrial practices.

The Engineering Technology program distinguishes itself from traditional engineering programs by placing emphasis on the application of theory, by integrating most courses with laboratory experience, and by incorporating faculty with extensive industrial experience.

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

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

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



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Engineering Technology

Transfer Articulation Agreements

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

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

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

For more information contact:

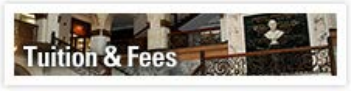
Goodwin College of Professional Studies
Gerry Marekova, Program Manager
gtm23@drexel.edu

Delaware County Community College
Admissions Office

admiss@dccc.edu

Burlington County College
Owen Schugsta, Assistant Director
Ocs23@drexel.edu
ext. 2053

Pennsylvania Institute of Technology
Gerry Marekova, Program Manager
gtm23@drexel.edu



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Engineering Technology
Biomedical Engineering Technology Concentration

Bachelor of Science Degree: 187.5 quarter credits

The Biomedical Engineering Technology concentration is focused on the practice of medical equipment operation and support in the clinical environment. This concentration provides students with the knowledge they need to work in the medical field operating complicated diagnostic and patient care equipment.

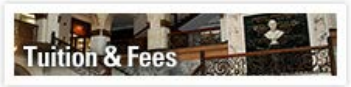
Degree Requirements

Incoming students, 2011/2012

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	Principles of Communication	3.0
COM 230	Techniques of Speaking	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 I	4.0
MATH 122	Calculus II	4.0
STAT 201	Statistics I	4.0



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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 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

Biomedical Engineering Technology Concentration requirements		28.5 Credits
BET 301	Healthcare Technology	3.0
BET 302	Biomedical Electronics	4.0
BET 303	Medical Imaging Systems	3.0
BET 305	Clinical Laboratory Equipment	4.0
BIO 107	Cells, Genetics and Physiology	3.0
BIO 108	Cells, Genetics and Physiology Lab	1.0
BMES 302	Lab II: Biomeasurements	2.0
BMES 335	Biomedical Informatics I	3.0
BMES 391	Biomedical Instrumentation I	3.0
BMES 488	Medical Device Development	3.0

Technical electives		6.0 Credits
Students select 6.0 additional credits from any BET, 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 ET	3.0
UNIV 101	The Drexel Experience	2.0

Free electives	12.0 Credits

Writing-Intensive Course Requirements
In order to graduate, all students 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 may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List on the Drexel University Writing Center page. Students scheduling their courses in Banner/DrexelOne can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

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Recommended Plan Of Study

BS Engineering Technology, Biomedical Engineering Tech

5 YR UG Co-op Concentration /Biomedical Engineering Tech

Term 1		Credits
CHEM 111	General Chemistry I	4.0
CHEM 113	General Chemistry I Laboratory	1.5
EET 102	Introduction to ET	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	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
BET 301	Healthcare Technology	3.0
BET 302	Biomedical Electronics	4.0
BIO 107	Cells, Genetics and Physiology	3.0
BIO 108	Cells, Genetics and Physiology Lab	1.5
BMES 302	Lab II: Biomeasurements	2.0
	Free elective	3.0
	Term Credits	*16.5*

Term 9		Credits
BET 303	Medical Imaging Systems	3.0
BET 305	Clinical Laboratory Equipment	3.0
BMES 391	Biomedical Instrumentation I	3.0
BMES 488	Medical Device Development	3.0
INDE 370	Industrial Project Management	3.0
	Term Credits	*15.0*

Term 10		Credits
BMES 335	Biomedical Informatics I	3.0
MET 421	Senior Design Project I	3.0
	Liberal studies elective	3.0
	Free elective	4.0
	Term Credits	*13.0*

Term 11		Credits
MET 422	Senior Design Project II	3.0
	Liberal studies elective	3.0
	Free elective	3.0
	Technical elective	3.0
	Term Credits	*12.0*

Term 12		Credits
MET 423	Senior Design Project III	3.0
	Technical elective	3.0
	Free elective	3.0
	Liberal studies elective	3.0
	Term Credits	*12.0*

	Total Credits (minimum)	189.0

Engineering Technology
Electrical Engineering Technology Concentration

Bachelor of Science Degree: 187.5 quarter credits

Electrical Engineering Technology provides much more extensive background in electric circuit analysis and in digital and analog electronics than the other specialization areas. Students also are required to study digital computer design, analysis of electric power systems, and control system analysis. EET students will also study applied mechanics and fluid power systems. Students are required to complete four advanced courses; a number of free elective courses permit the student great latitude in tailoring the program of study to match the career goals of the student.

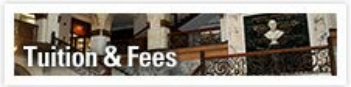
Degree Requirements

Incoming students, 2011/2012

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



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Applied Engineering Technical Core		63.0 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 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 ET	3.0
UNIV 101	The Drexel Experience	2.0

Free electives	**13.0 Credits**

Writing-Intensive Course Requirements
In order to graduate, all students 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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Recommended Plan Of Study

BS Engineering Technology, Electrical Engineering Tech

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 ET	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
	Liberal studies elective	3.0
	Free elective	4.0
	Term Credits	*14.0*

Term 11		Credits
MET 422	Senior Design Project II	3.0
	Liberal studies elective	3.0
	Free elective	3.0
	Technical elective	3.0
	Term Credits	*12.0*

Term 12		Credits
MET 423	Senior Design Project III	3.0
	Technical elective	3.0
	Free elective	4.0
	Liberal studies elective	3.0
	Term Credits	*13.0*

	Total Credits (minimum)	187.5

Engineering Technology
Mechanical Engineering Technology Concentration

Bachelor of Science Degree: 187.5 credits

Mechanical Engineering Technology prepares students to participate in the design, development, testing, and manufacturing of industrial machinery, consumer products, CNC (Consumer Numeric Control) and prototyping machinery, and other equipment. The concentration includes study in computer graphics, statics, dynamics, and stress analysis. The students also learn thermodynamics, fluid mechanics, electric circuits & electronics, and will study instrumentation and test various equipment and systems in the technology laboratory courses.

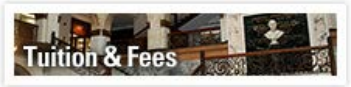
Degree Requirements

Incoming students, 2011/2012

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	Principles of Communication	3.0
COM 230	Techniques of Speaking	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 I	4.0
MATH 122	Calculus II	4.0
STAT 201	Statistics I	4.0



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Applied Engineering Technical Core		63.0 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		25.0 Credits
MET 204	Fluid Power	3.0
MET 316	Computer Numerical Control	3.0
MET 407	Manufacturing Processes	3.0
MET 408	Manufacturing Information Management	3.0
MHT 206	Thermodynamics II	3.0
MHT 222	Applied Dynamics I	3.0
MHT 301	Fluid Mechanics I	3.0
MHT 314	Thermo and 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 ET	3.0
UNIV 101	The Drexel Experience	2.0

Free electives	**14.0 Credits**

Writing-Intensive Course Requirements
In order to graduate, all students 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 may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List on the Drexel University Writing Center page. Students scheduling their courses in Banner/DrexelOne can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

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Recommended Plan Of Study

BS Engineering Technology, Mechanical Engineering Tech

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 ET	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
	Technical elective (See advisor)	3.0
	Liberal studies elective	3.0
	Free elective	4.0
	Term Credits	*13.0*

Term 12		Credits
MET 423	Senior Design Project III	3.0
	Free elective	4.0
	Technical elective (See advisor)	3.0
	Liberal studies elective	3.0
	Term Credits	*13.0*

	Total Credits (minimum)	187.5

Engineering Technology
Industrial Engineering Technology Concentration

Bachelor of Science Degree: 187.5 credits

This concentration reflects contemporary business and technology practices. Students in the Industrial Engineering Technology concentration will be provided with the scientific basis for designing, installing, and operating integrated systems, materials, information, energy, and managing and supervising people.

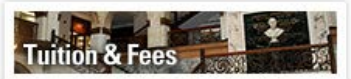
Degree Requirements

Incoming students, 2011/2012

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	Principles of Communictation	3.0
COM 230	Techniques of Speaking	3.0
ECON 201	Principles of Microeconomics	4.0
HIST 285	Technology in Historical Perspective	3.0
PHIL 315	Engineering Ethics	3.0
	Liberal studies electives	9.0

Basic Science requirements		**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 I	4.0
MATH 122	Calculus II	4.0
STAT 201	Statistics I	4.0



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Applied Engineering Technical Core		63.0 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 BET, 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	Introduction to ET	3.0
UNIV 101	The Drexel Experience	2.0

Free electives	**7.0 Credits**

Writing-Intensive Course Requirements
In order to graduate, all students 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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Recommended Plan Of Study

BS Engineering Technology, Industrial Engineering Tech

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 ET	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
	Technical elective (See advisor)	4.0
	Liberal studies elective	3.0
	Term Credits	*14.0*

Term 12		Credits
MET 423	Senior Design Project III	3.0
	Technical elective (See advisor)	3.0
	Free elective	4.0
	Liberal studies elective	3.0
	Term Credits	*13.0*

	Total Credits (minimum)	188.5

General Studies

About the Major

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.

Faculty

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

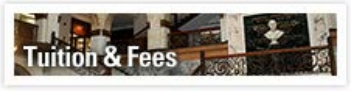
Advising

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

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

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

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



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Individualized Studies Concentration

Bachelor of Science Degree: 180.0 credits

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.

Degree Requirements

Incoming students, 2011/2012

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

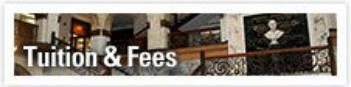
Computing requirement **3.0 Credits**

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.



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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

Writing-Intensive Course Requirements
In order to graduate, all students must pass three writing-intensive courses after their freshman year. 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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Liberal Studies

Bachelor of Science Degree: 180.0 credits

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.

Degree Requirements

Incoming students, 2011/2012

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

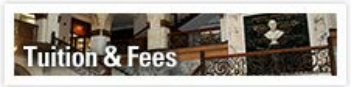
Computing requirement **3.0 Credits**

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.



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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

Writing-Intensive Course Requirements
In order to graduate, all students must pass three writing-intensive courses after their freshman year. 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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Physical Science Concentration

Bachelor of Science Degree: 180.0 quarter credits

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

Required Courses

Incoming students, 2011/2012

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

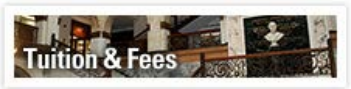
English and Communication requirements		15.0 Credits
ENGL 101	Expository Writing and Reading	3.0
ENGL 102	Persuasive Writing and Reading	3.0
ENGL 103	Analytical Writing and Reading	3.0
COM 230	Techniques of Speaking	3.0
COM 310 WI	Technical Communication	3.0

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



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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**

Writing-Intensive Course Requirements
In order to graduate, all students 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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Hospitality Management

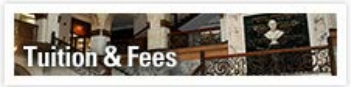
The Hospitality Management program recognizes the critical importance of an interdisciplinary education with a global perspective for tomorrow's leaders and managers. Committed to building student knowledge across functional areas and contributing disciplines, the program allows for increased specialization 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 Hospitality Management Programs web site.



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Hospitality Management

Program Delivery Options

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

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

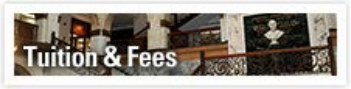
Four plus One option BS/MBA combined degree, with co-op experience:
This option combines the four-year BS degree followed by the one-year Professional MBA to qualify freshmen applicants. Incoming freshmen will generally have a minimum of 1300 on the SAT, a GPA of 3.5 or higher, and be in the top 10%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

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

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

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

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



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Hospitality Management

Bachelor of Science Degree: 182.0 quarter credits

Degree Requirements

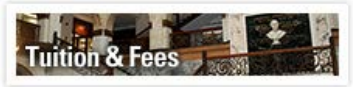
Incoming students, 2011/2012

General education requirements		**62.0 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	18.0	

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

** Students choose three/four classes from the following subject areas: ARTH, COM, ENGL, FMVD, 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		**91.0 - 100.0 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



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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*	9.0 - 15.0	

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

Concentrations

Food and Beverage Management (F&B)

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

16.0 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

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

Select 9.0 credits from the following courses: **9.0 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	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 Integrated Marketing Communications	4.0
MKTG 324	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 353	Business-to-Business Marketing	4.0
MKTG 355	Interactive Marketing	4.0
MKTG 356	Consumer Behavior	4.0
MKTG 357	Global Marketing	4.0
MKTG 358	Transportation and Logistics	4.0

Writing-Intensive Course Requirements
In order to graduate, all students 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 may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List on the Drexel University Writing Center page. Students scheduling their courses in Banner/DrexelOne can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

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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
	Concentration requirement (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
	Concentration requirement (See degree requirements for list)	3.0
	Free elective	3.0
	Term Credits	*16.0*

Term 6		Credits
STAT 201	Statistics I	4.0

	Hospitality Management program electives (See department for options)	6.0
	Concentration requirement (See degree requirements for list)	3.0
	Arts and Humanities elective	3.0
	Term Credits	*16.0*

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
	Concentration requirement (See degree requirements for list)	3.0
	Hospitality Management program elective (See department for options)	3.0
	Term Credits	*13.0*

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

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

Term 10		Credits
HRM 330	Hospitality Marketing	3.0
ORGB 300	Organizational Behavior	4.0
	Arts and Humanities elective	3.0
	Concentration requirement (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
	Concentration requirement (See degree requirements for list)	3.0
	Free elective	3.0
	Term Credits	*15.0*

Term 12		Credits
FIN 301	Introduction to Finance	4.0
HRM 455	Hospitality Human Resources Management	3.0
	Concentration requirement (See degree requirements for list)	3.0
	Social science elective	3.0
	Term Credits	*13.0*

	Total Credits (minimum)	182.0

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:

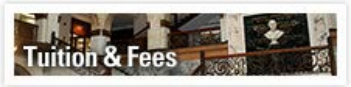
- Career advancement within students' current organizations and industries
- Preparation to pursue a master's degree in a variety of areas

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.



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Professional Studies

Bachelor of Science Degree: 180.0 quarter credits

Required Courses

Incoming students, 2011/2012

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

Corporate 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

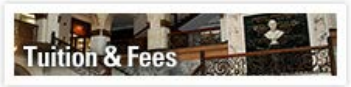
Mathematics requirements		**9.0 Credits**
MATH 181	Mathematical Analysis I	3.0
MATH 182	Mathematical Analysis II	3.0
MATH 183	Mathematical Analysis III	3.0

Natural Science requirements		**9.0 Credits**

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

Humanities and Social and Behavioral Science Requirements		**24.0 Credits**
ANTH 101	Cultural Diversity: Introduction to Cultural Anthropology	3.0
PHIL 323	Organizational Ethics	3.0
PSY 101	General Psychology I	3.0
SOC 101	Introduction to Sociology	3.0

Students select an additional psychology (PSY) course. Suggested courses



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include:

PSY 140	Approaches to Personality	3.0
PSY 150	Introduction to Social Psychology	3.0
PSY 240 WI	Abnormal Psychology	3.0
PSY 244	Culture and Personality	3.0

Students select an additional Sociology (SOC) course. Suggested courses include:

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 *international* or *intercultural* course. Suggested courses include the following:

COM 345	Intercultural Communication	3.0
GSTD 150	Introduction to World Religions	3.0

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

	Humanities elective	3.0

Business Minor 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	Introduction to Marketing Management	4.0
ORGB 300 WI	Organizational Behavior	4.0
OPM 200	Operations Management	4.0
STAT 201	Statistics I	4.0

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

Professional Studies Core **48.0 Credits**

CAT 200	Strategies for Lifelong Learning	3.0
CAT 201 WI	Interpersonal Communication	3.0
CAT 302	Customer Service Theory and Practice	3.0
CAT 360	Applied Organizational Research	3.0
CRTV 301	Foundations in Creativity	3.0
CRTV 302	Tools and Techniques in Creativity	3.0
CRTV 303	Creativity in the Workplace	3.0
PROJ 301	Project Management	3.0

PRST 211	Computer Applications for Professionals	3.0
PRST 212	Creative Studies in the WWW	3.0
PRST 303	Interpersonal Skills Virtual Teams	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

Free Electives* **48.0 Credits**

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

**** These two courses are not available online.**

Writing-Intensive Course Requirements
In order to graduate, all students 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 may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List on the Drexel University Writing Center page. Students scheduling their courses in Banner/DrexelOne can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

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Property Management

About the Major

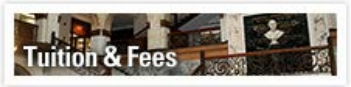
Designed for working professionals, Drexel's BS in Property Management provides a strong multidisciplinary education, including a firm foundation in general education and social science, specialized study in property management and construction management, and advanced knowledge of real estate, law,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



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Property Management

Bachelor of Science Degree: 180.0 quarter credits

Required Courses

Incoming class, 2011-2012

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

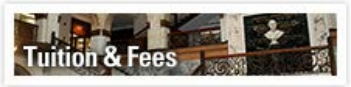
Communication requirements		9.0 Credits
COM 111	Principles of Communication	3.0
COM 230	Techniques of Speaking	3.0
COM 280	Public Relations	3.0
or		
COM 345	Intercultural Communication	

Mathematics requirements		8.0 - 9.0 Credits
MATH 101	Introduction to Analysis I	4.0
MATH 102	Introduction to Analysis II	4.0
or		
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
	Natural science electives	6.0

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

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



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Humanities and Social Science electives		9.0 Credits
	Three electives*	9.0

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

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	Introduction to Marketing Management	4.0
ORGB 300 WI	Organizational Behavior	4.0
STAT 201	Statistics I	4.0

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

Property Management Core		57.0 Credits
CAT 302	Customer Service Theory and Practice	3.0
CMGT 262	Building Codes	3.0
CRTV 301	Foundations in Creativity	3.0
REAL 310	Introduction to Real Estate	3.0
REAL 330	Facilities and Property Management	3.0
PROJ 301	Project 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 215	Building Systems for Property Management I	3.0
PRMT 216	Building Systems for Property Management II	3.0
PRMT 225	Technical Drawings for Property Managers	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 333	Social Responsibility for Property Managers	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 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
SOC 210	Race and Ethnic Relations	3.0
SOC 240	Urban Sociology	3.0

Commercial Property Management Concentration		**15.0 Credits**
PRMT 340	Managing and Marketing Retail Property	3.0
PRMT 341	Managing and Marketing Office Buildings	3.0
PRMT 342	Managing and Marketing Industrial Properties	3.0
PRMT 363	Commercial Property Financial Reporting	3.0
PRMT 365	Commercial Property Appraisal	3.0

Free Electives	30.0 Credits

Suggested electives:

BACS 200 WI	Foundations of Behavioral Health Care		3.0
CAT 201 WI	Interpersonal Communication		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
DSMR 231	Retail Principles		3.0
HSAD 316	Health Care Across Cultures		3.0
HSAD 323	Health Services and the Elderly		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 356	Military Housing Management		3.0
PRMT 360	Managing and Marketing Commercial Property		3.0
PRMT 365	Commercial Property Appraisal		3.0
PRMT 380	Special Topics in Property Management		3.0
PRMT 399	Independent Study in Property Management	var.	
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

Writing-Intensive Course Requirements
In order to graduate, all students 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 may indicate that this course can fulfill a writing-intensive requirement. For the most up-to-date list of writing-intensive courses being offered, students should check the Writing Intensive Course List on the Drexel University Writing Center page. Students scheduling their courses in Banner/DrexelOne can also conduct a search for courses with the attribute "WI" to bring up a list of all writing-intensive courses available that term.

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Sport Management

About the Major

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 a professional portfolio that will include such items as a press kit, facility operations manual, sponsorship deck, and sports contract. Students will then refine their portfolio items and present the final product for review in their senior year.

Coursework

The BS 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).

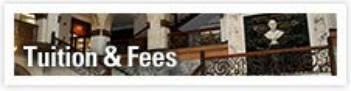
Degree Completion Options

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.



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Sport Management

Bachelor of Science Degree: 181.0 quarter credits

Required Courses

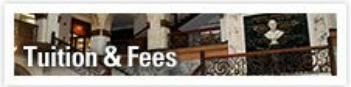
Incoming students, 2011/2012

General education requirements		52.0 Credits
ANTH 101	Cultural Diversity	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



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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 WI	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 area electives.

Writing-Intensive Course Requirements
In order to graduate, all students 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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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
	Social science elective	3.0
	Sport Management "area" elective (See degree requirements for options)	3.0
	Term Credits	*16.0*

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

Term 9		Credits
SMT 307	Corporate Sponsorships in Sports	3.0
SMT 309	Economic Aspects of Sport	3.0
	Sport Management "area" elective (See degree requirements for options)	3.0
	Social science elective	3.0
	Free 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
	Two Sport Management "area" electives (See degree requirements for options)	6.0
	Free electives	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 Architecture

27.0 quarter credits

A minor in architecture gives students majoring in other disciplines an opportunity to explore architecture through a coherent sequence of coursework. The minor in architecture can also be used for preparation towards professional graduate study in this field. Interested students should consult the architecture advisor for course selection and scheduling.

The minor requires 27 credits divided among design studio courses, courses in architectural history, and architectural elective courses. No more than 9 credits from a student's major can be used to fulfill the minor requirements.

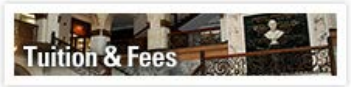
Required courses

ARCH 141	Architecture and Society I	3.0
ARCH 142 WI	Architecture and Society II	3.0
ARCH 143 WI	Architecture and Society III	3.0
	Elective architecture courses*	9.0

*Chosen from Bachelor of Architecture required professional courses, history/theory electives and professional electives appearing on the Degree requirements page. Selection should be made after consultation with the Architecture Academic Advisor.

Three of the following*		Credits
ARCH 191	Studio 1	3.0
or		
ARCH 111	Studio 1-1	3.0
ARCH 192	Studio 2	3.0
or		
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

* Students who have successfully completed INTR 233 should enter the studio sequence at the second-year level (ARCH 121). Students who have successfully completed ARCH 192 should start the studio sequence with ARCH 113.



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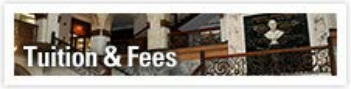
Minor in Coaching Leadership

24.0 quarter 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.

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
SMT 203	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



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Minor in Construction Management

24.0 quarter credits

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* :

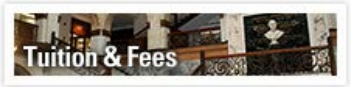
CMGT 261	Construction Safety	3.0
CMGT 263	Understanding Construction Drawing	3.0
CMGT 364	Estimating II	3.0
CMGT 461	Construction Management I	3.0
CMGT 462	Construction Management II	3.0
CMGT 463	Value Engineering I	3.0
CMGT 465	Marketing Construction Services	3.0

* 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 WI	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.



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Minor in Culinary Arts

24.0 quarter credits

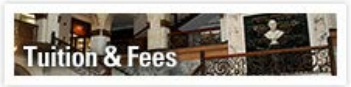
The Minor in Culinary Arts is designed for students pursuing a variety of majors who also have an interest in food and cuisine. The required courses introduce the major cuisines, and develop necessary culinary technical skills and fundamental knowledge of foods and food preparation. Students are able 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 WI	Culture and Gastronomy I	3.0
CULA 410	Culture and Gastronomy II	3.0
CULA 415	Food Styling and Photography	3.0



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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

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Minor in Emergency Management

24.0 quarter credits

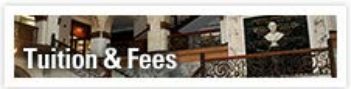
Natural or manmade disasters can strike at any time and anywhere. They take many forms—a hurricane, an earthquake, a tornado, a flood, a fire or a hazardous spill, an act of nature or an act of terrorism. Disasters can build over days or weeks, or hit suddenly, without warning. Every year, millions of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



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Minor in Food Science

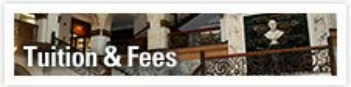
25.0 quarter credits

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



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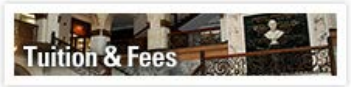
Minor in Gaming and Casino Operations

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



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Minor in Property Management

24.0 credits

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

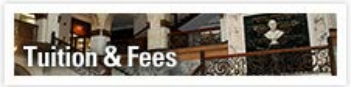
The Minor in Property Management is a flexible, convenient undergraduate credential for full- or part-time students, both on campus and online. Courses are offered in the fall, winter, spring, and summer, allowing students an opportunity to complete all requirements within one year.

Required courses

PRMT 110	Introduction to Property Management	3.0
PRMT 210	Rental Property and Fair Housing Law	3.0
PRMT 215	Building Systems for Property Management I	3.0
PRMT 310	Property Financing and Valuation	3.0
PRMT 315	Property Risk Management	3.0
PRMT 325	Human Resources for Property Managers	3.0
PRMT 330	Property Management Technology	3.0

Students select one of the following courses:

PRMT 216	Building Systems for Property Management II	3.0
PRMT 225	Technical Drawings for Property Managers	3.0
PRMT 335	Marketing and Leasing Residential Property	3.0



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Minor in Real Estate

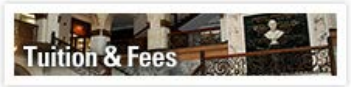
Designed for students in various disciplines (such as, architecture, business, civil engineering, architectural engineering, fashion merchandising and interior design) the minor in real estate provides the necessary knowledge, skills, and perspective to be successful in the real estate development process. 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



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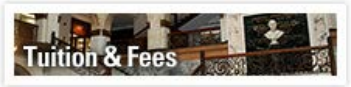
Certificate in Affordable Housing Administration

18.0 quarter 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



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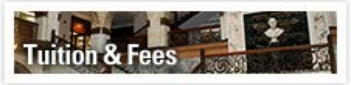
Certificate in Commercial Property Management

*18.0 quarter 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.

*Depending on a student's prior educational background, the total number of credits required may be higher due to prerequisites.

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



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Certificate in Computing Security

24.0 quarter credits

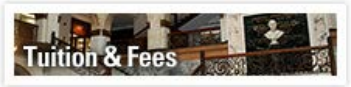
The Certificate in Computing Security is designed for computing technology professionals who have a BS degree in Computing Technology or considerable experience in the area, and who are seeking a career change or professional advancement with an additional focus on security.

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



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Construction Management I - Fundamentals Certificate Program

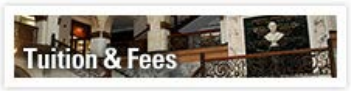
18.0 quarter credits

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

Students interested in continuing their education after certification are able to apply their coursework and credits directly to the Bachelor of Science in Construction Management.

Requirements

CMGT 101	Introduction to Construction Management	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 261	Construction Safety	3.0
CMGT 263	Understanding Construction Drawing	3.0



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Construction Management II - Construction Science Certificate Program

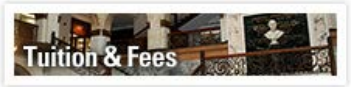
18.0 quarter credits

The Construction Management II - Construction Science Certificate focuses on introducing students to design concepts relating to heating, ventilation, and air conditioning systems and the integration of these systems into the construction process. In addition, the certificate also covers the process of estimating as well as building codes involved in construction projects.

Students interested in continuing their education after certification are able to apply their coursework and credits directly to the Bachelor of Science in Construction Management.

Requirements

CMGT 266	Building Systems I	3.0
CMGT 267	Building Systems II	3.0
CMGT 363	Estimating I	3.0
CMGT 364	Estimating II	3.0
Students select two (2) of the following three (3) courses:		
CMGT 262	Building Codes Construction	3.0
CMGT 264	Management of Field Operations	3.0
CMGT 265	Information Technology in Construction	3.0



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Construction Management III - Management Concepts Certificate Program

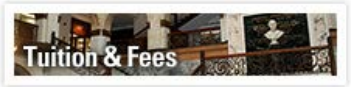
18.0 quarter credits

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

Students interested in continuing their education after certification are able to apply their coursework and credits directly to the Bachelor of Science in Construction Management.

Requirements

CMGT 361	Contracts & Specifications I	3.0
CMGT 362	Contracts & Specifications II	3.0
CMGT 461	Construction Management I	3.0
CMGT 463	Value Engineering I	3.0
CMGT 465	Marketing Construction Services	3.0
CMGT 467	Techniques of Project Control	3.0



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Construction Management IV - Customized Independent

18.0 quarter credits

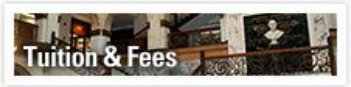
The Construction Management IV - Customized Independent Certificate is designed to allow students to choose the higher-level courses that best suit their special needs and interests. Students must select all six of their courses at the start of the Certificate program.

Students interested in continuing their education after certification are able to apply their coursework and credits directly to the Bachelor of Science in Construction Management.

Requirements

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

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



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Certificate in Fundamentals of Property Management

18.0 quarter credits

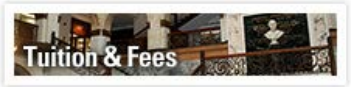
The Certificate in Fundamentals of Property Management is designed to provide students with the basic competencies required for the management of residential and commercial real estate. This certificate presents a comprehensive overview of the multidisciplinary responsibilities of the professional property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

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

Requirements		18.0 Credits
PRMT 110	Introduction to Property Management	3.0
PRMT 210	Rental Property and Fair Housing Law	3.0
PRMT 215	Building Systems for Property Management I	3.0
PRMT 225	Technical Drawings for Property Managers	3.0
PRMT 330	Property Management Technology	3.0

Students select one of the following courses:

PRMT 216	Building Systems for Property Management II	3.0
PRMT 335	Marketing and Leasing Residential Property	3.0



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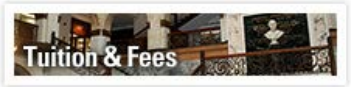
Certificate in Housing for an Aging Population

19.0 quarter 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 Aging	3.0



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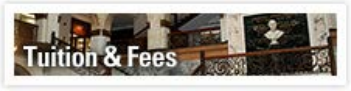
Certificate in Residential Property Management

18.0 quarter 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



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