Drexel University
Catalog 2007 / 2008

Table of Contents

The College of Information Science and Technology Undergraduate Programs

The College of Information Science and Technology

The College of Information Science and Technology is also known as "The *iSchool* at Drexel." This identity highlights the College's participation in The I-Schools Caucus, and its status as a founding member of the organization. The I-Schools Caucus is a national alliance of library, information science and information system schools, the purpose of which is to raise awareness and understanding of the information sciences as a cutting-edge and progressive field of study.

The College of Information Science and Technology educates interdisciplinary professionals to provide information services and systems to meet a wide range of needs. The College complements its educational programs with research that increases the benefits of information science and technology for all sectors of society.

The College offers the following bachelor degree programs:

Bachelor of Science in Information Systems

Bachelor of Science in Information Technology

Bachelor of Science in Software Engineering

General Information

The College offers the majors in Information Systems and Information Technology both as four and five-year programs, and offers the Software Engineering major as a five-year program. The degree programs are open to freshmen and transfers from other departments at Drexel and other universities. Students have access to the College of Information Science and Technology's Computing Resource Center and the computing facilities available to all Drexel students.

Transfer admission occurs in the fall and winter terms only due to the sequence of required courses. Internal transfer students can be admitted any term. Please contact a College advisor for more information.

The College of Information Science and Technology offers graduate work leading to the degrees of Master of Science, Library and Information Science; Master of Science in Information Systems; Master of Science in Software Engineering; and Doctor of Philosophy.

Co-operative education, academic eligibility requirements, acceptance of transfer students, and career services are described in detail in the Drexel University Undergraduate Admissions web site.

Information Systems

The College of Information Science and Technology is also known as "The iSchool at Drexel." This identity highlights the College's participation in The iSchool Consortium, and its status as a founding member of the organization. The iSchool Consortium is a national alliance of library, information science and information system schools, the purpose of which is to raise awareness and understanding of the information sciences as a cutting-edge and progressive field of study.

Drexel's College of Information Science and Technology offers a Bachelor of Science Degree in Information Systems (BSIS) to meet the growing demand for individuals skilled in the development and management of information systems. This forward-looking program for undergraduates offers a solid background in liberal arts and sciences as well as the skills and knowledge needed to design, create, manage, and effectively use modern information systems.

The Information Systems curriculum has no single application focus. It is directed to the art and science of managing information in all application environments. Students learn how to determine information needs, design appropriate information systems, manage those systems, and measure the systems' performance. The emphasis is on the users of computers, and on building professional-level information systems skills.

The BSIS is accredited by the Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET).

Information Systems

Bachelor of Science Degree: 188.0 credits

Degree Requirements

Information systems requirements		77.0 Credits
INFO 101	**Introduction to Information Technology**	3.0
INFO 102	**Introduction to Information Systems**	3.0
INFO 105	**Information Evaluation, Organization, and Use**	3.0
INFO 108	**Foundations of Software**	4.0
INFO 110	**Human-Computer Interaction I**	3.0
INFO 151	**IS Software I: User Needs**	3.0
INFO 152	**IS Software II: Connections**	3.0
INFO 153	**IS Software III: Construction**	3.0
INFO 154	**IS Software IV: Challenges**	3.0
INFO 200	**Systems Analysis I**	3.0
INFO 210	**Database Management Systems**	3.0
INFO 215	**Social Aspects of Information Systems**	3.0
INFO 330	**Computer Networking Technology I**	4.0
INFO 355	**Systems Analysis II**	3.0
INFO 420 WI	**Software Project Management**	3.0
INFO 425 WI	**Design Problem I**	3.0
INFO 424	**Team Project Practicum**	3.0
INFO 426 WI	**Design Problem II**	3.0
	Required Concentration courses*	6.0
	Information Systems electives**	15.0

*Concentration options:

Database Management Systems (INFO 365 and INFO 366)
Distributed Computing and Networking (INFO 340 and INFO 341)
Human-Centered Computing (INFO 405 and either PSY 337 or INFO 310)
Information Retrieval and Analysis (INFO 300 and INFO 435)
Computer Science (See advisor; CS minor required)

**Any non-required INFO course.

Behavioral science requirements		21.0 Credits
PSY 101	**General Psychology**	3.0
PSY 330	**Cognitive Psychology**	3.0
SOC 101	**Introduction to Sociology**	3.0

or

ANTH 101	**Cultural Diversity**	
SOC 250	**Research Methods I**	3.0
SOC 350	**Research Methods II**	3.0
	Behavioral Science electives*	6.0

* Any non-required course offered by the AFAS, ANTH, PSYCH, SOC or WMST departments.

Mathematics/natural science requirements		**24.0 Credits**
MATH 101	**Introduction to Analysis I**	4.0
MATH 102	**Introduction to Analysis II**	4.0
or		
MATH 121	**Calculus I**	4.0
MATH 122	**Calculus II**	4.0
MATH 180	**Discrete Computational Structures**	4.0
	Natural science sequences*	8.0-9.0
	Math or science elective**	3.0-4.0

* Students select one of the following course sequences:
CHEM 101 and CHEM 102
CHEM 111 and CHEM 112
ENVR 260/261 and ENVR 262/263
PHYS 103 and PHYS 104
PHEV 145 and PHEV 146
BIO 102 and BIO 104
BIO 151, CHEM 151, and PHYS 151
or PHYS 111 and PHYS 112.

** Any non-required science or math course.

Arts/humanities requirements		**24.0 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
PHIL 105	**Critical Reasoning**	3.0
PHIL 111	**Beginning Logic**	3.0
COM 230	**Techniques of Speaking**	3.0
COM 310 WI	**Technical Communication**	3.0
	Arts/Humanities electives*	3.0

* Any non-required course offered by the COM, HIST, ENGL, PHIL, PSCI, ARTH, FMVD, VSST, and WRIT departments or any foreign language course.

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

Other courses		**16.0 Credits**
	Free electives	16.0

Business requirements **24.0 Credits**

IST students who take all their courses at Drexel can qualify for a minor in business. Course grades of a C or higher is required for the courses to count toward a business minor. Students should see their advisors for more information.

ECON 201	**Economics I**	4.0
ECON 202	**Economics II**	4.0
ORGB 300 WI	**Organizational Behavior**	4.0
STAT 201	**Statistics I**	4.0
STAT 202	**Statistics II**	4.0

Students select one additional business course from the following:

ACCT 115	**Financial Accounting Foundations**	4.0
BLAW 201	**Business Law I**	4.0
MKTG 301 WI	**Introduction to Marketing Management**	4.0
OPM 300 WI	**Operations Management**	4.0

Writing-Intensive Course Requirements

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

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

Recommended Plan Of Study

BS Information Systems
5 YR UG Co-op Concentration

Term 1		Credits
ENGL 101	Expository Writing and Reading	3.0
INFO 101	Introduction to Information Systems	3.0
INFO 108	Foundations of Software	4.0
UNIV 101	The Drexel Experience	1.0
MATH 101	Introduction to Math Analysis	4.0
or		
MATH 121	Calculus I	4.0
	Term Credits	*15.0*

Term 2		Credits
ENGL 102	Persuasive Writing and Reading	3.0
INFO 102	Introduction to Information Systems	3.0
INFO 151	IS Software I: User Needs	3.0
UNIV 101	The Drexel Experience	1.0
MATH 102	Introduction to Math Analysis	4.0
or		
MATH 122	Calculus II	4.0
	Term Credits	*14.0*

Term 3		Credits
ENGL 103	Analytical Writing and Reading	3.0
INFO 105	Information Organization, Evaluation and Use	3.0
INFO 110	Human-Computer Interaction	3.0
INFO 152	IS Software II: Connections	3.0
MATH 180	Discrete Computational Structures	4.0
	Term Credits	*16.0*

Term 4		Credits
INFO 153	IS Software III: Construction	3.0
INFO 200	Systems Analysis I	3.0
PHIL 105	Critical Reasoning	3.0
SOC 250	Research Methods I	3.0
ANTH 101	Introduction to Cultural Diversity	3.0
or		
SOC 101	Introduction to Sociology	3.0
	Information Systems (INFO) elective	3.0
	Term Credits	*18.0*

Term 5		Credits
INFO 154	IS Software IV: Challenges	3.0
INFO 210	Database Management Systems	3.0
PSY 101	General Psychology I	3.0
SOC 350	Research Methods II	3.0
	Information Systems (INFO) elective	3.0
	Term Credits	*15.0*

Term 6		Credits
COM 230	Techniques of Speaking	3.0
ECON 201	Economics I	4.0
INFO 355	Systems Analysis II	3.0
PHIL 111	Beginning Logic	3.0
	INFO concentration course (see degree requirements)	3.0
	Term Credits	*16.0*

Term 7		Credits

ECON 202	Economics II	4.0
INFO 215	Social Aspects of Information	3.0
INFO 330	Computer Networking Technology I	4.0
PSY 330	Cognitive Psychology	3.0
	INFO concentration course (see degree requirements)	3.0
	Term Credits	*17.0*

Term 8		Credits
COM 310	Technical Communication	3.0
STAT 201	Statistics I	4.0
	Free elective	3.0
	Information Systems (INFO) elective	3.0
	Science sequence course 1 (See degree requirements list)	4.0
	Term Credits	*17.0*

Term 9		Credits
ORGB 300	Organizational Behavior	4.0
STAT 202	Statistics II	4.0
	Information Systems (INFO) elective	3.0
	Science sequence course 2 (See degree requirements list)	4.0
	Term Credits	*15.0*

Term 10		Credits
INFO 420	Software Project Management	3.0
ACCT 115	Financial Accounting Foundations	4.0
or		
BLAW 201	Business Law I	4.0
or		
MKTG 301	Introduction to Marketing Management	4.0
or		
OPM 300	Operations Management	4.0
	Behavioral science elective	3.0
	Free elective	3.0
	Information Systems (INFO) elective	3.0
	Term Credits	*16.0*

Term 11		Credits
INFO 425	Design Problem I	3.0
	Behavioral science elective	3.0
	Free electives	6.0
	Math/natural science course	4.0
	Term Credits	*16.0*

Term 12		Credits
INFO 426	Design Problem II	3.0
	Arts and Humanities elective	3.0
	Free electives	7.0
	Term Credits	*13.0*

	Total Credits (minimum)	188.0

Minor in Information Systems

The information systems minor is available to all University students in good standing, with the exception of information systems majors. A minimum of 25 credits is needed to complete the academic minor in information systems.

Required courses		Credits
INFO 102	**Introduction to Information Systems**	3.0
INFO 110	**Human-Computer Interaction I**	3.0
INFO 200	**Systems Analysis I**	3.0
INFO 210	**Database Management Systems**	3.0
INFO 330	**Computer Networking Technology I**	4.0
INFO 355	**Systems Analysis II**	3.0

An additional 6 credits or more are to be chosen from other course offerings in information systems pertinent to the student's overall program of study. Guidance in selecting these electives will be provided by staff and faculty of the College of Information Science and Technology.

Information Technology

The College of Information Science and Technology is also known as "The iSchool at Drexel." This identity highlights the College's participation in The iSchool Consortium, and its status as a founding member of the organization. The iSchool Consortium is a national alliance of library, information science and information system schools, the purpose of which is to raise awareness and understanding of the information sciences as a cutting-edge and progressive field of study.

The Bachelor of Science Degree in Information Technology (B.S.I.T.) is offered by Drexel's College of Information Science and Technology as both a five-year and a four-year co-op program. In addition to the core coursework in information systems, the major includes 15 credits towards a minor in business. Only 9 additional credits would be required to complete a minor in business.

Students graduating with a Bachelor of Science Degree in Information Technology (B.S.I.T.) will:

- Understand and be able to apply core information technologies.
- Approach the application of information technology from a user-centered perspective aimed at meeting the needs of users and organizations in a societal and global context.
- Apply sound methods and approaches to identify and analyze IT problems and design, implement, and evaluate effective and usable IT solutions.
- Display personal and interpersonal IT career skills, including the ability to work on a team, to communicate with technical and nontechnical people, and to pursue lifelong learning.

Integration with B.S.I.S.

The B.S.I.T. integrates closely with Drexel's bachelor of science in information systems (B.S.I.S.), and each enriches the other. The two degrees share a common freshman year and the same set of major courses, but they have different requirements. The difference is in the nature of specialization in upper-level courses. The B.S.I.T. is aimed at students who want a degree focused on applied information technology but with an emphasis on IT infrastructure rather than applications in business.

The structure of the freshman year allows students to embark on IT or IS without having to choose between them until later.

Information Technology

Bachelor of Science Degree: 188.0 credits

Degree Requirements

Technology requirements		78.0 Credits
INFO 101	**Introduction to Information Technology**	3.0
INFO 102	**Introduction to Information Systems**	3.0
INFO 105	**Information Evaluation, Organization, and Use**	3.0
INFO 108	**Foundations of Software**	4.0
INFO 110	**Human-Computer Interaction I**	3.0
INFO 151	**IS Software I: User Needs**	3.0
INFO 152	**IS Software II: Connections**	3.0
INFO 153	**IS Software II: Construction**	3.0
INFO 154	**IS Software II: Challenges**	3.0
INFO 200	**Systems Analysis I**	3.0
INFO 210	**Database Management Systems**	3.0
INFO 215	**Social Aspects of Information Systems**	3.0
INFO 320	**Server Technology I**	4.0
INFO 330	**Computer Networking Technology I**	4.0
INFO 410	**Information Technology Infrastructure**	3.0
INFO 415	**Information Technology Services**	3.0
INFO 420 WI	**Software Project Management**	3.0
INFO 424	**Team Project Practicum**	3.0
INFO 425 WI	**Design Problem I**	3.0
INFO 426 WI	**Design Problem II**	3.0
	Technology electives	12.0 -15.0

Advanced requirements		9.0 - 12.0 Credits

Students select one of the following sequences:

Database Management Systems		
INFO 300	**Information Retrieval Systems**	3.0
INFO 365	**Database Administration I**	3.0
INFO 366	**Database Administration II**	3.0
or		
Server and Network Technology		

INFO 321	**Server Technology II**	4.0
INFO 322	**Server Technology III**	4.0
INFO 331	**Computer Networking Technology II**	4.0

Behavioral science requirements		**12.0 Credits**
PSY 101	**General Psychology I**	3.0
PSY 330	**Cognitive Psychology**	3.0
	Electives	6.0

Mathematics/natural science requirements		**20.0 - 21.0 Credits**
MATH 101	**Introduction to Analysis I**	4.0
or		
MATH 121	**Calculus I**	4.0
MATH 102	**Introduction to Analysis II**	4.0
or		
MATH 122	**Calculus II**	4.0
MATH 180	**Discrete Computational Structures**	4.0
	Natural science sequence*	8.0-9.0

* Students select one of the following course sequences:
CHEM 101 and CHEM 102
CHEM 111 and CHEM 112
ENVR 260/261 and ENVR 262/263
PHYS 103 and PHYS 104
PHEV 145 and PHEV 146
BIO 102 and BIO 104
BIO 151, CHEM 151, and PHYS 151
or PHYS 111 and PHYS 112.

Arts/humanities requirements		**24.0 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
PHIL 105	**Critical Reasoning**	3.0
PHIL 111	**Beginning Logic**	3.0
COM 230	**Techniques of Speaking**	3.0
COM 310 WI	**Technical Communication**	3.0
	Arts/Humanities electives*	3.0

* Any non-required course offered by the COM, HIST, ENGL, PHIL, PSCI, ARTH, FMVD, VSST, and WRIT departments or any foreign language course.

Business requirements		**12.0 Credits**
STAT 201	**Statistics I**	4.0
STAT 202	**Statistics II**	4.0
Students select one of the following:		
ACCT 115	**Financial Accounting Foundations**	4.0
ECON 201	**Economics I**	4.0
ORGB 300 WI	**Organizational Behavior**	4.0

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

Other courses		30.0 - 31.0 Credits
	Free electives	30.0-31.0

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

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

Recommended Plan Of Study

BS Information Technology
5 YR UG Co-op Concentration

Term 1		Credits
ENGL 101	Expository Writing and Reading	3.0
INFO 101	Introduction to Information Systems I	3.0
INFO 108	Foundations of Software	4.0
UNIV 101	The Drexel Experience	1.0
MATH 101	Introduction to Math Analysis	4.0
or		
MATH 121	Calculus I	4.0
	Term Credits	*15.0*

Term 2		Credits
ENGL 102	Persuasive Writing and Reading	3.0
INFO 102	Introduction to Information Systems II	3.0
INFO 151	IS Software I: User Needs	3.0
UNIV 101	The Drexel Experience	1.0
MATH 102	Introduction to Math Analysis	4.0
or		
MATH 122	Calculus II	4.0
	Free elective	3.0
	Term Credits	*17.0*

Term 3		Credits
ENGL 103	Analytical Writing and Reading	3.0
INFO 105	Information Organization, Evaluation and Use	3.0
INFO 110	Human-Computer Interaction	3.0
INFO 152	IS Software II: Connections	3.0
MATH 180	Discrete Computational Structures	4.0
	Term Credits	*16.0*

Term 4		Credits
COM 230	Techniques of Speaking	3.0
INFO 153	IS Software III: Construction	3.0
INFO 200	Systems Analysis I	3.0
INFO 320	Server Technology I	4.0
PSY 101	General Psychology I	3.0
	Term Credits	*16.0*

Term 5		Credits
INFO 154	IS Software IV: Challenges	3.0
INFO 210	Database Management Systems	3.0
PHIL 105	Critical Reasoning	3.0
PSY 330	Cognitive Psychology	3.0
	IT elective	3.0
	Term Credits	*15.0*

Term 6		Credits
PHIL 111	Beginning Logic	3.0
	Free elective	3.0
	IT advanced topic course (see degree requirements for sequences)	3.0
	IT elective	3.0
	Natural science sequence course (See degree requirements for list)	4.0
	Term Credits	*16.0*

Term 7		Credits

INFO 330	Computer Networking Technology I	4.0
INFO 215	Social Aspects of Information Systems	3.0
	Free elective	3.0
	IT advanced topic course (see degree requirements for sequences)	3.0
	Natural science sequence course (See degree requirements for list)	4.0
	Term Credits	*17.0*

Term 8		Credits
COM 310	Technical Communication	3.0
INFO 410	Information Technology Infrastructure	3.0
STAT 201	Statistics I	4.0
	Free elective	3.0
	IT elective	3.0
	Term Credits	*16.0*

Term 9		Credits
INFO 415	Information Technology Service	3.0
STAT 202	Statistics II	4.0
	Free elective	3.0
	IT advanced topic course (see degree requirements for sequences)	3.0
	IT elective	3.0
	Term Credits	*16.0*

Term 10		Credits
INFO 420	Software Project Management	3.0
INFO 424	Team Project Practicum	3.0
ACCT 115	Financial Accounting Foundations	4.0
or		
ECON 201	Economics I	4.0
or		
ORGB 300	Organizational Behavior	4.0
	Free elective	3.0
	IT elective	3.0
	Term Credits	*16.0*

Term 11		Credits
INFO 425	Design Problems I	3.0
	Arts and Humanities elective	3.0
	Behavioral science elective	3.0
	Free electives	6.0
	Term Credits	*15.0*

Term 12		Credits
INFO 426	Design Problem II	3.0
	Behavioral science elective	3.0
	Free electives	7.0
	Term Credits	*13.0*

	Total Credits (minimum)	188.0

Software Engineering

Advances in information technology have captured the public imagination and had tremendous economic and social impact over the last 50 years. These advances offer great benefit, but have also created a great need for highly dependable systems developed at predictable cost. Unfortunately, it has become increasingly clear that our ability to produce the software for these systems in a way that meets cost and quality requirements is quite limited.

For example:

- Studies conclude that cost and schedule overruns on commercial software projects commonly average at least 100%. Some studies report averages as high as 300 - 400%.
- Studies of large projects indicate that about 25% of them are abandoned and never completed.
- There is a growing list of incidents in which software failures have caused injury and death.

Software engineering is an attempt to solve this problem. The notion can be traced to a conference sponsored by NATO in 1967. The conference was organized to discuss the problems in creating software systems reliably. In the years since, there has been some progress, but the problems that motivated the original conference are still very much in evidence. There is good reason to believe that the creation of software will never be easy. But there is tremendous incentive to make the process as efficient and reliable as possible.

In summary, software engineering can be defined as the application of processes, methods, and tools to the problem of building and maintaining computer software with a defined level of quality, at a predictable cost, on a predictable schedule.

Software Engineering

Bachelor of Science in Software Engineering (BSSE): 188.0 credits

Degree Requirements

Software engineering requirements		36.0 Credits
SE 101	Foundations of Software Engineering I	3.0
SE 102	Foundations of Software Engineering II	3.0
SE 103	Foundations of Software Engineering III	3.0
SE 210	Software Specification and Design I	3.0
SE 211	Software Specification and Design II	3.0
SE 310	Software Architecture I	3.0
SE 311	Software Architecture II	3.0
SE 320	Sofware Verification and Validation	3.0
SE 410	Software Evolution	3.0
SE 491	Design Project I	3.0
SE 492	Design Project II	3.0
SE 493	Design Project III	3.0

Computer science requirements		16.0 - 17.0 Credits
CS 260	Data Structures	3.0
CS 265	Advanced Programming Techniques	3.0
CS 281	Systems Architecture I	4.0
CS 361	Concurrent Programming	3.0
CS 472	Computer Networks	3.0
or		
INFO 330	Computer Networking Technology I	4.0

Information systems requirements		9.0 Credits
INFO 210	Database Management Systems	3.0
INFO 310	Human Computer Interaction II	3.0
INFO 420 WI	Software Project Management	3.0

Computing electives		18.0 Credits
	Any non-required INFO, CS or SE course at the 300+ level	18.0

Mathematics/statistics requirements		26.0 Credits

CS 270	**Mathematical Foundations of Computer Science**	3.0
STAT 201	**Statistics I**	4.0
STAT 202	**Statistics II**	4.0
MATH 121	**Calculus I**	4.0
MATH 122	**Calculus II**	4.0
MATH 123	**Calculus III**	4.0
MATH 221	**Discrete Mathematics**	3.0

Basic Science requirements (Choose one of the following sequences)		**21.0 Credits**
BIO 102	**Biology I: Cells and Tissues**	4.0
BIO 104	**Biology I: Growth and Heredity**	4.0
BIO 106	**Organismal Biology**	4.0
or		
CHEM 101	**General Chemistry I**	3.5
CHEM 102	**General Chemistry II**	4.5
CHEM 103	**General Chemistry III**	5.0
or		
PHYS 111	**Physics I**	4.5
PHYS 112	**Physics II**	4.5
PHYS 211	**Physics III**	4.5
	Additional science electives	7.5 - 9.0

Liberal studies requirements		**33.0 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
PHIL 105	**Critical Reasoning**	3.0
PHIL 311	**Computer Ethics**	3.0
COM 230	**Techniques of Speaking**	3.0
COM 310 WI	**Technical Communication**	3.0
PSY 101	**General Psychology**	3.0
PSY 330	**Cognitive Psychology**	3.0
	Additional liberal studies electives	6.0

Students select two of the following business courses:		**8.0 Credits**
ACCT 115	**Financial Accounting Foundations**	4.0
ECON 201	**Economics I**	4.0
ECON 202	**Economics II**	4.0

University and college requirements		**20.0 -21.0 Credits**
UNIV 101	**The Drexel Experience ***	2.0
	Free electives	18.0-19.0

*First-term external transfer students are required to take INFO 120 Seminar for Transfer students instead of UNIV 101.

Writing-Intensive Course Requirements

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

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

Recommended Plan Of Study

BS Software Engineering
5 YR UG Co-op Concentration

Term 1		Credits
COOP 101	Career Management/Professional Development	0.0
ENGL 101	Expository Writing and Reading	3.0
MATH 121	Calculus I	4.0
SE 101	Foundations of Software Engineering I	3.0
UNIV 101	The Drexel Experience	1.0
BIO 102	Biology I: Cells and Tissues	4.0
or		
CHEM 101	General Chemistry I	4.0
or		
PHYS 111	Physics I	4.5
	Term Credits	*15.0*

Term 2		Credits
ENGL 102	Persuasive Writing and Reading	3.0
MATH 122	Calculus II	4.0
SE 102	Foundations of Software Engineering II	3.0
UNIV 101	The Drexel Experience	0.5
BIO 104	Biology II: Growth and Heredity	4.0
or		
CHEM 102	General Chemistry II	4.0
or		
PHYS 112	Physics II	4.5
	Term Credits	*14.5*

Term 3		Credits
ENGL 103	Analytical Writing and Reading	3.0
MATH 200	Multivariate Calculus	4.0
SE 103	Foundations of Software Engineering III	3.0
UNIV 101	The Drexel Experience	0.5
BIO 106	Biology III: Organismal Biology	4.0
or		
CHEM 103	General Chemistry III	5.0
or		
PHYS 211	Physics III	4.5
	Liberal studies elective	3.0
	Term Credits	*17.5*

Term 4		Credits
COM 230	Techniques of Speaking	3.0
SE 210	Software Specification and Design I	3.0
CS 265	Advanced Programming Tools and Techniques	3.0
CS 270	Mathematical Foundations of Computer Science	3.0
	Natural Science elective	3.0
	Term Credits	*15.0*

Term 5		Credits
CS 260	Data Structures	3.0
INFO 210	Database Management Systems	3.0
MATH 221	Discrete Mathematics	3.0
SE 211	Software Specification and Design II	3.0
	Natural Science elective	3.0
	Term Credits	*15.0*

Term 6		Credits
COM 310	Technical Communication	3.0

CS 281	Systems Architecture I	4.0
PSY 101	General Psychology I	3.0
SE 310	Software Architecture I	3.0
STAT 201	Business Statistics I	4.0
	Term Credits	*17.0*

Term 7		Credits
SE 311	Software Architecture II	3.0
STAT 202	Business Statistics II	4.0
	Free elective	3.0
	Computing elective (300-level or higher INFO, SE, CS)	3.0
	Natural Science elective	3.0
	Term Credits	*16.0*

Term 8		Credits
CS 361	Concurrent Programming	3.0
INFO 420	Software Project Management	3.0
PHIL 105	Critical Reasoning	3.0
SE 320	Software Verification and Validation	3.0
	Free elective	3.0
	Term Credits	*15.0*

Term 9		Credits
INFO 310	Human-Computer Interaction II	3.0
PHIL 311	Computer Ethics	3.0
SE 410	Software Evolution	3.0
	Computing electives (300-level or higher INFO, SE, CS)	3.0
	Free elective	3.0
	Term Credits	*15.0*

Term 10		Credits
SE 491	Design Project I	3.0
CS 472	Computer Networks	3.0
or		
INFO 330	Computer Networking Technologies I	4.0
ACCT 115	Financial Accounting Foundations	4.0
or		
ECON 201	Economics I	4.0
or		
ECON 202	Economics II	4.0
	Computing elective (300-level or higher INFO, SE, CS)	3.0
	Free elective	3.0
	Term Credits	*16.0*

Term 11		Credits
PSY 330	Cognitive Psychology	3.0
SE 492	Design Project II	3.0
ACCT 115	Financial Accounting Foundations	4.0
or		
ECON 201	Economics I	4.0
or		
ECON 202	Economics II	4.0
	Computing electives (300-level or higher INFO, SE, CS)	6.0
	Term Credits	*16.0*

Term 12		Credits
SE 493	Design Project III	3.0
	Computing elective (300-level or higher INFO, SE, CS)	3.0
	Free electives	7.0
	Liberal studies elective	3.0
	Term Credits	*16.0*

	Total Credits (minimum)	188.0

Minor in Software Engineering

The software engineering minor is available to all University students in good standing, with the exception of software engineering majors. A total of 24 credits is needed to complete the academic minor in software engineering.

Requirements		Credits
SE 210	**Software Specification and Design I**	3.0
SE 211	**Software Specification and Design II**	3.0
SE 310	**Software Architecture I**	3.0
SE 311	**Software Architecture II**	3.0
SE 320	**Sofware Verification and Validation**	3.0
SE 410	**Software Evolution**	3.0
	Two Computing/Software Engineering electives	6.0