

# INFORMATION TECHNOLOGY (BS)

This major prepares students who plan to design, create, and administer large information bases used by organizations.

Enterprises have an ever-growing investment in the exploding quantity of information, especially in web-related data, that requires increasingly sophisticated approaches for efficient access and productive use. Students gain the talents and skills to be successful in today's organizations following current industry practices: planning, designing, implementing, and administering data information and knowledge bases that can be effectively mined; assessing the information and data requirements of an organization and implementing these requirements as an information system; functioning as an effective member of an information services division in an organization.

The Bureau of Labor Statistics indicates high median pay and estimates a 15% increase (much higher than average) in the demand for computer and information systems managers for the period 2014 to 2024.

## Curriculum

Code	Title	Hours
<b>Major Requirements</b>		
Select one of the following:		3
STAT 103	Fundamentals of Statistics	
STAT 203	Introduction to Probability & Statistics	
ISSCM 241	Business Statistics	
PSYC 304	Statistics	
COMP 141	Introduction to Computing Tools and Techniques	3
COMP 163	Discrete Structures	3
or MATH 201	Introduction to Discrete Mathematics & Number Theory	
COMP 170	Introduction to Object-Oriented Programming	3
COMP 251	Introduction to Database Systems	3
COMP 264	Introduction to Computer Systems	3
or COMP 271	Data Structures I	
COMP 301	Introduction to Computer Security	3
COMP 317	Social, Legal, and Ethical Issues in Computing	3
COMP 377	IT Project Management	3
or ISSCM 349	Project Management	
Select six credit hours from the following:		6
COMP 305	Database Administration	
COMP 306	Data Mining	
COMP 343	Computer Networks	
COMP 353	Database Programming	
<b>Practicum Capstone</b>		
Students are encouraged to complete these credits during junior and senior years to draw on prior experience.		
Select six credits taken from one or more of the following:		6
COMP 312	Open Source Software Practicum	
COMP 390	Broadening Participation in STEM (Computing, Math & Science)	
COMP 391	Internship in Computer Science	

COMP 398	Independent Study	
<b>Electives</b>		
Select ten credit hours from the following:		10
COMP 250	Introduction to Scientific and Technical Communication <sup>2</sup>	
	or ENGL 210 Business Writing	
COMP 264	Introduction to Computer Systems <sup>2</sup>	
	or COMP 271 Data Structures I	
MGMT 315	International Management	
MGMT 318	Organizational Development and Change	
MGMT 320	Leading and Managing Teams	
MGMT 335	Micro-Enterprise Consulting	
MGMT 360	Values-Based Leadership	
ENTR 201	Introduction to Entrepreneurship	
ENTR 311	Social Entrepreneurship (Not for Profit Ventures)	
ENTR 313	Entrepreneurship - Global Opportunity Scan	
ENTR 345	Entrepreneurial Marketing	
ENTR 390	Entrepreneurship Strategies - Capstone	
ISSCM 393	Requirements Analysis and Communication <sup>3</sup>	
COMP 300 level electives <sup>4</sup>		
<b>Total Hours</b>		<b>49</b>

<sup>1</sup> That some COMP 3xx electives have a prereq of COMP 271 Data Structures I or higher, and MGMT and ENTR courses also have prereqs.

<sup>2</sup> You must take one of these classes as part of the Major requirements. The second one can be used as an elective if taken.

<sup>3</sup> MGMT 201 Managing People and Organizations plus ACCT 201 Introductory Accounting I may count in place of 3 credits of major Electives, only if ISSCM 349 Project Management is completed to also count toward this major.

<sup>4</sup> A special case is COMP 390 Broadening Participation in STEM (Computing, Math & Science), COMP 391 Internship in Computer Science and COMP 398 Independent Study Three additional units beyond the practicum can be counted as an elective, as long as you take no more than 6 units of COMP 391 Internship in Computer Science and no more than 6 units of COMP 398 Independent Study.

## Suggested Ordering of Courses

The below sequence of courses is meant to be used as a suggested path for completing coursework. An individual student's completion of requirements depends on course offerings in a given term as well as the start term for a major or graduate study. Students should consult their advisor for assistance with course selection.

Course	Title	Hours
<b>Year 1</b>		
<b>Fall</b>		
COMP 150	Introduction to Computing <sup>1</sup>	3
COMP 141	Introduction to Computing Tools and Techniques	3
STAT 103	Fundamentals of Statistics <sup>2</sup>	3
CORE: Philosophical Knowledge Tier 1		3
CORE: College Writing Seminar		3
UNIV 101	First Year Seminar	1
<b>Hours</b>		<b>16</b>

<b>Spring</b>		
COMP 170	Introduction to Object-Oriented Programming <sup>3</sup>	3
COMP 163	Discrete Structures	3
CORE: Historical Knowledge Tier 1		3
CORE: Ethics		3
CORE: Scientific Knowledge Tier 1		3
<b>Hours</b>		<b>15</b>

**Year 2**

<b>Fall</b>		
COMP 271 or COMP 264	Data Structures I or Introduction to Computer Systems	3
COMP 301	Introduction to Computer Security	3
COMP 251	Introduction to Database Systems	3
CORE: Theology and Religious Studies Tier 1		3
CAS Language Requirement 101 level <sup>4</sup>		3
<b>Hours</b>		<b>15</b>

**Spring**

COMP 377	IT Project Management <sup>5</sup>	3
COMP 317	Social, Legal, and Ethical Issues in Computing	3
ITEC-BS Restricted Elective		3
CORE: Societal & Cultural Knowledge Tier 1		3
CAS Language Requirement 102 level		3
<b>Hours</b>		<b>15</b>

**Year 3**

<b>Fall</b>		
ITEC-BS Restricted Elective		3
COMP Free Elective		3
COMP Free Elective		1
CORE: Literary Knowledge & Experience Tier 1		3
CORE: Artistic Knowledge & Experience		3
CAS Elective		3
<b>Hours</b>		<b>16</b>

**Spring**

COMP Free Elective		3
CORE: Theology and Religious Studies Tier 2		3
CORE: Scientific Knowledge Tier 2		3
CORE: Historical Knowledge Tier 2		3
CAS Elective		3
<b>Hours</b>		<b>15</b>

**Year 4**

<b>Fall</b>		
COMP Practicum		3
CORE: Literary Knowledge & Experience Tier 2		3
CORE: Societal & Cultural Knowledge Tier 2		3
CORE: Philosophical Knowledge Tier 2		3
CAS Elective		3
<b>Hours</b>		<b>15</b>

**Spring**

COMP Practicum		3
COMP Free Elective if COMP 150 not taken		3

CAS Elective	3
CAS Elective	3
CAS Elective	3
<b>Hours</b>	<b>15</b>
<b>Total Hours</b>	<b>122</b>

<sup>1</sup> COMP 150 Introduction to Computing will apply to COMP Free Electives: Students with prior experience in computer programming, for example a high school course modeled on the Exploring Computer Science (<https://www.exploringcs.org/>) or Computer Science Principles (<https://apcentral.collegeboard.org/courses/ap-computer-science-principles/>) curriculum may replace this course with a different COMP Free Elective at any time during the program. A score of 4 or 5 on the AP CS Principles Exam will earn actual credit for this course.

<sup>2</sup> May substitute STAT 203 Introduction to Probability & Statistics, ISSCM 241 Business Statistics, or PSYC 304 Statistics.

<sup>3</sup> A score of 4 or 5 on the AP CS A Exam will earn credit for this course.

<sup>4</sup> Language must be completed through the 102 course level or through an exam (<https://www.luc.edu/cas/college-requirements/>).

<sup>5</sup> May substitute ISSCM 349 Project Management

## General Notes

- Credits never can be double-counted for different categories of the requirements for the major. But a course may satisfy a major requirement and also satisfy a University and/or College requirement (e.g., Core, residency, Engaged Learning, Writing Intensive).
- It is usually not meant to combine a computing major or minor with another, the principal exception being CCFR-MINR; see more detail in the double-dipping rules (<https://catalog.luc.edu/undergraduate/arts-sciences/computer-science/#policiestext>).

## College of Arts and Sciences Graduation Requirements

All Undergraduate students in the College of Arts and Sciences are required to take two Writing Intensive courses (6 credit hours) as well as complete a foreign language requirement at 102-level or higher (3 credit hours) or a language competency test. More information can be found here (<https://www.luc.edu/cas/college-requirements/>).

## Additional Undergraduate Graduation Requirements

All Undergraduate students are required to complete the University Core, at least one Engaged Learning course, and UNIV 101. SCPS students are not required to take UNIV 101. Nursing students in the Accelerated BSN program are not required to take core or UNIV 101. You can find more information in the University Requirements (<https://catalog.luc.edu/undergraduate/university-requirements/>) area.

## Learning Outcomes

- Understanding of IT Fundamentals: This includes a broad understanding of areas such as networking, databases, website development, information systems, and IT project management.
- Proficiency in Technical Skills: Graduates should be proficient in a variety of programming languages, operating systems, and hardware configurations.

- Knowledge of Information Systems: This includes understanding how information systems are used to support business processes, strategic goals, and decision making.
- Problem-Solving Skills: Students should be able to analyze a problem and identify and define the computing requirements appropriate to its solution.
- Project Management Skills: Students should understand the principles of project management as they relate to IT projects, including planning, coordination, execution, and evaluation.
- Understanding of IT Infrastructure: This includes knowledge of IT architecture and infrastructure, such as networks, operating systems, software applications, and data centers.
- Understanding of IT Security: Students should have a basic understanding of the principles and best practices of information security, including how to protect networks, systems, and data from cyber threats.