INFORMATION TECHNOLOGY, B.S.

Program Description

The Department offers three separate programs in computing. Two of these programs provide a foundation in the discipline of computer science, one leading to a B.A. and the other to a B.S. The remaining program leads to a B.S. in Information Technology.

The primary goal of these programs is the preparation of graduates for direct entry into the computing profession with sufficient background to make continuing contributions in the field. The B.S. in Computer Science program provides the foundation for remaining current in computer science. It requires courses in related fields and provides breadth and depth in the discipline. The B.A. program is applications-oriented and has fewer required courses to provide greater flexibility. The information technology major is designed for those students interested in the study of networks and client support systems.

Mission Statement

The mission of the La Salle's Information Technology (IT) program extends the University's mission with an emphasis on the success of its students. IT students establish a foundation aware of theoretical IT paradigms coupled with current IT practices. This groundwork will provide a basis of continued learning in this dynamic, emerging field. Students analyze technological problems, design team-based solutions to real-world problems, and develop communication plans for both IT experts and non-experts. Students are encouraged to complete internships as well as participate in industry-based research opportunities to understand the broad application of technology within society. Students completing this program are prepared to continue as IT industry professionals and researchers.

4+1 Graduate Program Option

During their senior year, students with a GPA of at least 3.0 may apply for the 4+1 BS/MS Information Technology/Cybersecurity option. Students who are accepted into this program will receive their bachelor's degree once they complete its requirements and will then begin the master's program immediately upon graduation. Up to three courses from the undergraduate program will then count towards the completion of the masters degree. Students must earn a grade of B or higher in any course that is being transferred to the graduate program. Eligible masters programs are as follows:

- Cybersecurity (CYB) - a total of 8 additional classes (24 credits) are required to complete the M.S. in CYB; this degree can be completed in as few as four semesters after graduation (approximately 15 months)

Why Take This Major?

Students who pursue Information Technology as a major are those who enjoy working with computer hardware, networks, security, and databases. Graduates pursue careers as network administrators, computer security specialists, database administrators, and web programmers.

Degree Earned

B.S.

Required for Graduation

- Courses
  - Major: 17
  - Total: 40
- Credits
  - Major: 52
  - Total: 120
- GPA
  - Major: 2.0
  - Cumulative: 2.0

Student Learning Outcomes

Upon completion of the program, students will be able to:

- manage and administer computer and network systems
- devise plans and processes to evaluate IT solutions
- execute processes and procedures to help end-users with technology problems
- execute procedures to secure corporate data and networks
- effectively communicate IT-related information to others within an organization
- formulate plans and procedures to manage computer hardware and software
- evaluate and select computer usage and tools in support of IT organizations and needs
- devise and implement IT policies, procedures, and standards to meet organizational strategic plans

Progress Chart

Level One - Core Courses

12 courses and 2 modules required.

Major Requirements

Major requirements include 4 Level Two ILO requirements*, fulfilled through the major.*

Students in this major must complete **40** courses in total in order to graduate. **17** courses will be from this major program.

Code	Title	Credits
Level One - Core Courses		
Universal Required Courses		
Students must complete the following 4 courses.		
ILO 8.1: Written Communication (https://catalog.lasalle.edu/undergraduate/ilo/)		
ENG 110	College Writing I: Persuasion	3
ILO 5.1: Information Literacy (https://catalog.lasalle.edu/undergraduate/ilo/)		
ENG 210	College Writing II: Research	3
ILO 1.1: Understanding Diverse Perspectives (https://catalog.lasalle.edu/undergraduate/ilo/)		
FYS 130	First-Year Academic Seminar [1]	3
ILO 2.1: Reflective Thinking and Valuing (https://catalog.lasalle.edu/undergraduate/ilo/)		
REL 100	Religion Matters	3
Elective Core Courses		

Students must complete 1 course in each of the following 4 ILOs.		
ILO 3.1a: Scientific Reasoning (https://catalog.lasalle.edu/undergraduate/ilo/)		
PHY 201	Computer Electronics	3
ILO 3.1b: Quantitative Reasoning (https://catalog.lasalle.edu/undergraduate/ilo/)		
MTH 260	Discrete Structures I	3
ILO 6.1: Technological Competency (https://catalog.lasalle.edu/undergraduate/ilo/)		
CSC 240	Database Management Systems	3
ILO 8.1a/12.1: Oral Communication/Collaborative Engagement (https://catalog.lasalle.edu/undergraduate/ilo/)		
Choose course within ILO (https://catalog.lasalle.edu/undergraduate/ilo/)		3
Distinct Discipline Core Courses		
Students must complete 1 course in each of the following 4 ILOs. Each course must be from a different discipline. (A "discipline" is represented by the 3- or 4-letter prefix attached to each course.)		
ILO 4.1: Critical Analysis and Reasoning (https://catalog.lasalle.edu/undergraduate/ilo/)		
Choose course within ILO (https://catalog.lasalle.edu/undergraduate/ilo/)		3
ILO 9.1: Creative and Artistic Expression (https://catalog.lasalle.edu/undergraduate/ilo/)		
Choose course within ILO (https://catalog.lasalle.edu/undergraduate/ilo/)		3
ILO 10.1: Ethical Understanding and Reasoning (https://catalog.lasalle.edu/undergraduate/ilo/)		
Choose course within ILO (https://catalog.lasalle.edu/undergraduate/ilo/)		3
ILO 11.1: Cultural and Global Awareness and Sensitivity (https://catalog.lasalle.edu/undergraduate/ilo/)		
Choose course within ILO (https://catalog.lasalle.edu/undergraduate/ilo/)		3
Universal Required Modules		
Students must complete the following 2 non-credit modules. [2]		
ILO 7.1a (https://catalog.lasalle.edu/undergraduate/ilo/)		
Health Literacy Module		
ILO 7.1b (https://catalog.lasalle.edu/undergraduate/ilo/)		
Financial Literacy Module		
Major Requirements		
Level Two		
Students must complete 1 course/learning experience in each of the 4 commitments.		
ILO 2.2: Broader Identity (Capstone Course/Experience) (https://catalog.lasalle.edu/undergraduate/ilo/)		
CSIT 380	Applied Technology Systems (ILO 2.2)	3
Select one ILO from 3.2a, 3.2b, 4.2, 5.2, 6.2, 7.2a, or 7.2b: Expanded Literacies (https://catalog.lasalle.edu/undergraduate/ilo/)		
CSC 301	Computer Architecture (ILO 6.2)	3
ILO 8.2b: Effective Expression (Writing-Intensive Course) (https://catalog.lasalle.edu/undergraduate/ilo/)		
CSIT 321	Client Support (ILO 8.2b)	3
Select one ILO from 10.2, 11.2, or 12.2: Active Responsibility (https://catalog.lasalle.edu/undergraduate/ilo/)		
CSIT 422	Information Security (ILO 10.2)	3
All Other Required Courses		
CSIT 220	Data Communication	3
CSIT 300	Computers, Ethics, And Social Values	3
CSIT 320	LANs and Network Administration	3
CSIT 321	Client Support	3
CSIT 327	Administrative Scripting	3
or CSC 349	Mobile Computing	
CSIT 380	Applied Technology Systems	3
CSIT 422	Information Security	3
CSIT 460	Internship	3-4
CSC 230	Programming Concepts and User Interfaces	4
CSC 240	Database Management Systems	3
CSC 301	Computer Architecture	3
CSC 340	.Net Programming	3
or CSC 341	Open-Source Application Development	
CSC 343	Client-Side Scripting	3
Select one of the following:		3
BUS 203	Organizational Behavior and Skill Development	
One CSC/CSIT elective numbered 280 or higher		
One CSC/CSIT elective numbered 280 or higher		3
MTH 260	Discrete Structures I	3
PHY 201	Computer Electronics	3
Free Electives		
In addition to the requirements listed above, students must take enough courses to the fulfill graduation credit requirements for their School and major.		
Total Credits		**100-101**

1

NOTE. The following students use Level 2 Capstone Experience in Major instead of FYS 130 First-Year Academic Seminar: Honors, BUSCA, Core-to-Core, Transfer, and Non-Traditional/Evening.

2

The Modules are **not** required for Transfer Students, Core-to-Core Students, or BUSCA Students. BUSCA students are required to take modules if/when they pursue a bachelor's degree.

Recommended Course Sequence

First year students typically take:

Code	Title	Credits
CSC 230	Programming Concepts and User Interfaces	4
CSC 240	Database Management Systems	3
CSIT 220	Data Communication	3

It is important for students to complete these courses as soon as they are able since most of the rest of the curriculum relies on the knowledge from these classes.

Students should take CSIT 320 LANs and Network Administration during either their sophomore or junior year as some upper-division IT courses rely on the knowledge from this course.

Dual Major Requirements

Students in the Information Technology program may consider a double major or minor in Computer Science. Please see the Department Chair for more information on our double major offerings.

Course Descriptions

Computer Science / Information Technology

CSIT 220 Data Communication
This course will address current methods and practices in the use of computer networks to enable communication; physical layers, architectural layers, design, operation, management, and the ISO standards. Local, cloud and wide area networks are examined. Student projects may include introductory LAN design, implementation and administration.

CSIT 299 Technology Careers Preparation
The course will help students explore career decisions, prepare resumes, develop effective networking techniques, practice interviewing strategies, and explore other job search techniques. We will be working with members of the Computer Science Advisory Board in a mentoring role. The course format will include individual assignments, guest presentations, and role modeling. Students considering internships and future careers in technology would benefit from this course. Prerequisite(s): Junior/senior standing

CSIT 300 Computers, Ethics, And Social Values
The topics in this course include privacy and information use/misuse offline and online, intellectual property, the First Amendment, e-waste, accuracy of information, ethics, effects of computers on work and society, responsibilities and risks of computing, current issues such as credit cards and associated debt, cyberwar, and cloud computing. (offered in alternate years) Prerequisite(s): CSIT 220, CSC 240 Corequisite(s): ENG 210

CSIT 301 Computer Architecture
This course is an introduction to computer architecture and hardware; underlying structures needed to accomplish tasks electronically; and hardware and software architecture components relative to memory management, I/O control, and processing capabilities. Prerequisite: .CSIT 220.

CSIT 320 LANs and Network Administration
This course provides a practical approach to network administration methodology using current technologies; network hardware; Network Operating System installation; account management; file sharing; network printing; protocol and services configuration; client connectivity and troubleshooting; network application support; server maintenance; and cross-platform integration. One hour of lecture and two hours of laboratory are scheduled per week. (offered in alternate years) Prerequisite(s): CSIT 220

CSIT 321 Client Support
Topics in this course include installation, maintenance, and customization of a PC client operating system (OS), additional system and application software and hardware installation. The course will also provide a survey of OS utilities, services, and settings, including command-line instructions, menus, start-up processes, purposes of essential OS files, browser options, the task manager, the registry, firewall, etc. (offered in alternate years) Prerequisite(s): CSIT 220

CSIT 327 Administrative Scripting
Production environments use scripts because of the rapid deployment and their "hands-off" nature, which is lacking in GUIs. The main focus is the use of scripts to automate installation, maintenance, and analysis of operating systems, networks, and applications. This course will examine popular scripting languages that are used in Windows and Linux environments. (offered in alternate years) Prerequisite(s): CSC 230 and CSIT 320

CSIT 330 Computer Forensics
This course focuses on legislation related to digital forensics, the role of a computer forensics examiner, evidence preservation, and computer forensic tools. This course provides a comparative study of legislation related to civil and criminal cases using digital forensics, evidence analysis, chain of custody, and data retrieval from computer hardware and software applications. Students will have hands-on labs examining network intrusion and digital evidence preservation using various computer forensic tools. Prerequisite(s): CSIT 220

CSIT 360 Internship
Part-time, paid or non-paid employment in a cooperating site will provide practical experience in the discipline. Working under professional supervision for at least 20 hours per week, students learn how to apply their education to the everyday demands of the world of work. Students will meet regularly with a faculty member and will be encouraged to reflect on the relationship between course work and their internship experience. Restriction(s): junior or senior standing, 2.5 GPA overall and in the major, and departmental approval

CSIT 370 Selected Topics in Information Technology
This course is an introduction to specialized research in computers and computing, concentrating on one particular aspect of information technology. The subject matter will vary from term to term. Restriction(s): junior or senior standing

CSIT 371 Selected Topics in Information Technology
This course is an introduction to specialized research in computers and computing, concentrating on one particular aspect of information technology. The subject matter will vary from term to term. Restriction(s): junior or senior standing

CSIT 372 Selected Topics in Information Technology
This course is an introduction to specialized research in computers and computing, concentrating on one particular aspect of information technology. The subject matter will vary from term to term. Restriction(s): junior or senior standing

CSIT 373 Selected Topics in Information Technology
This course is an introduction to specialized research in computers and computing, concentrating on one particular aspect of information technology. The subject matter will vary from term to term. Restriction(s): junior or senior standing

CSIT 374 Selected Topics in Information Technology
This course is an introduction to specialized research in computers and computing, concentrating on one particular aspect of information technology. The subject matter will vary from term to term. Restriction(s): junior or senior standing

CSIT 375 Selected Topics in Information Technology
This course is an introduction to specialized research in computers and computing, concentrating on one particular aspect of information technology. The subject matter will vary from term to term. Restriction(s): junior or senior standing

CSIT 376 Selected Topics in Information

CSIT 377 Selected Topics in Information

CSIT 380 Applied Technology Systems
This course will provide an overview of software systems used in a business environment. The course will discuss the network architecture needed to support these environments, including specific issues related to licensing, metrics, infrastructure, and environmental requirements. (offered in alternate years) Prerequisite(s): CSIT 220 and CSC 240

CSIT 422 Information Security
Topics in this course include basic computer security concepts, terminology, and issues, including network security, Windows security, and Linux security; hardening, TCP/IP, scanning, sniffing, IPSec, public key infrastructure, Kerberos, certificates, cryptography, firewalls, intrusion detection systems, security policies, and processes. (offered in alternate years) Prerequisite(s): CSIT 320 or CSIT 321

CSIT 423 Penetration Testing & Ethical Hacking
This course systematically covers the skills in penetration testing: the act of attempting to penetrate a computer system on behalf of the owners of the system for the purpose of discovering security vulnerabilities that can be exploited by the hacker. The topics of this course include reconnaissance, scanning, enumeration, vulnerability assessment, escalation, workflow of penetration testing, and legal aspects of ethical hacking.

CSIT 440 Cloud Computing
This course covers a series of current cloud computing technologies, including technologies for Infrastructure as a Service, Platform as a Service, Software as a Service, and Physical Systems as a Service. For different layers of the cloud technologies, students will work with current technologies to create, deploy, and administer the service. The course will provide a foundation for development and exploration of cloud resources. Prerequisite(s): CSIT 220, CSC 230, CSC 240

CSIT 444 Research in CSIT I
This course provides the student with an opportunity to do research with a faculty member. The student and the faculty member agree on the research project before the student registers for the course.

CSIT 445 Research in CSIT II
This course is a continuation of the 444 research course. It provides the student with an opportunity to continue to conduct research with a faculty member.

CSIT 450 Cooperative Education
This experience will involve a full-time, paid, six-month assignment in a cooperating firm that engages the student in job-related learning under faculty and on-site supervision. Students will meet regularly with a faculty member and will be encouraged to reflect on the relationship between coursework and their co-op experience. The position is arranged through the Chair of the Department or director of the program. Required: junior or senior standing, 2.5 GPA overall and in the major, and recommendation of the co-op coordinator.

CSIT 460 Internship
Part-time, paid or non-paid employment in a cooperating site will provide practical experience in the discipline. Working under professional supervision for at least 20 hours per week, students learn how to apply their education to the everyday demands of the world of work. Students will meet regularly with a faculty member and will be encouraged to reflect on the relationship between course work and their internship experience. Restriction(s): junior or senior standing, 2.5 GPA overall and in the major, and departmental approval

CSIT 461 Internship II Srs

CSIT 470 Special Topics

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