

Bachelor of Science in Information Technology

Offered by:

Department of Information Technology
College of Engineering
Central Luzon State University

University Information

1. Vision of the University

Central Luzon State University (CLSU) envisions itself as a world-class National Research University for science and technology, particularly in agriculture and allied fields.

2. Mission of the University

CLSU is committed to developing globally competitive, work-ready, socially responsible, and empowered human resources who value lifelong learning. The University strives to generate, disseminate, and apply knowledge and technologies that contribute to poverty alleviation, environmental protection, and sustainable development.

3. Quality Policy Statement

- a. Excellent service to humanity is our commitment.
- b. We are dedicated to developing globally competent and empowered human resources and to generating knowledge and technologies that promote inclusive societal development.
- c. We pledge to uphold CLSU's core values and principles, comply with statutory and regulatory standards, and continuously improve the effectiveness of our quality management systems.
- d. Mahalaga ang inyong tinig upang higit na mapahusay ang kalidad ng aming paglilingkod.

4. Goals of the College of Engineering

In line with the University's mission, the College of Engineering aims to:

- a. Provide quality education and apply engineering and technology knowledge that anticipates and addresses future and relevant agro-industrial needs, preparing students for global practice.
- b. Engage in research with significant socio-economic impact, contributing to sustainable development, and disseminate the results of these research efforts.
- c. Share the vast store of knowledge and technology with the community and stakeholders to make the Philippines and the world a better place.

5. Objectives of the Department of Information Technology

- a. Provide relevant and quality education in information and communications technology (ICT).
- b. Generate innovative technologies and systems that support global and national initiatives to bridge the digital divide across the diverse range of human experiences in every sector of society and the economy.

c. Provide technological expertise in the field of information technology for the benefit of the country, the region, and beyond.

Program Description

The Bachelor of Science in Information Technology (BSIT) program equips students with the expertise to plan, create, install, customize, operate, manage, and maintain information technologies that address the computing needs of organizations. Throughout the program, students develop critical skills essential for the selection, development, application, integration, and management of computing technologies. By engaging in problem-solving activities and research-driven projects, students learn to assess emerging technologies, identify effective solutions for organizational challenges, and stay at the forefront of IT innovations. Graduates of the program are well-prepared for a variety of roles, including software engineer, web and applications developer, systems administrator, database administrator, network administrator, network engineer, IT auditor, systems analyst, computer programmer, IT manager, and multimedia specialist.

Program Educational Objectives

The BSIT program is designed to produce graduates who are (VITAL):

1. **Versatile:** Extensively trained professionals equipped with analytical, technical, interpersonal, leadership, and entrepreneurial competence, providing them with maximum flexibility to assume appropriate ICT leadership roles and to function effectively in multidisciplinary and diverse teams.
 2. **Innovative and Growth Committed:** Cognizant of opportunities for personal and professional growth, participating in lifelong learning processes, whether on-the-job or in graduate school.
 3. **Technology Adaptive:** Adaptive to the changing work environment, staying abreast of technology trends and developments.
 4. **Accountable Leaders:** Capable of leading and conducting ICT-based solutions, taking into account the environmental, legal, ethical, moral, cultural, and societal implications of ICT projects and research.
 5. **Legacy-Building Professionals:** Adept with a sense of professionalism and personal discipline, prepared to succeed in their chosen careers and become productive, responsible, and contributing global citizens.
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Program Specializations

The program currently offers two specializations (majors), which students can choose to pursue starting in the second semester of their junior year:

BSIT - Software Systems and Web Applications Engineering

Graduates of this major are focused on the development of software solutions, web applications, and emerging technologies like AI, AR/VR, and blockchain. They are often involved in coding, systems design, and creating software that meets user needs.

BSIT - Network Systems and Infrastructure Engineering

Graduates of this major are more involved in the design, implementation, and management of network systems, cybersecurity, and IT infrastructure. Their work ensures that the underlying technology and systems operate securely and efficiently.

Graduates of the BSIT program, regardless of the chosen major, can fulfill the following roles:

Primary Job Roles

- Web and Applications Developer
- Database Administrator
- Systems Administrator
- Network Engineer
- Software Engineer
- IT Security Administrator
- Systems Integration Personnel
- IT Auditor
- Technical Support Specialist

Secondary Job Roles

- QA Specialist
- Systems Analyst
- Computer Programmer
- IT Manager
- Multimedia Specialist
- IT Research Specialist
- IT Entrepreneur
- IT Instructor

Furthermore, graduates can specialize in additional roles based on their major:

BSIT - Software Systems and Web Applications Engineering Majors

- Blockchain Developer
- Data Analyst/Data Scientist
- AI Engineer
- AR/VR Developer
- Systems Architect (complex software systems)

BSIT - Network Systems and Infrastructure Engineering Majors

- Cybersecurity Specialist
- Internet of Things (IoT) Engineer
- Cloud Infrastructure Engineer
- HPC Engineer
- Systems Architect (complex network systems)

Admission Requirements

The BSIT program follows the general admission requirements established by the Office of Admission. For detailed information, please visit: <https://oad.clsu2.edu.ph/services/students/admission-requirements/>.

Program of Study (effective SY 2024-2025)

First Year					
First Semester					
Catalogue No.	Descriptive Title	No. of Units		Total Units	Prerequisite
		Lec	Lab		
COMSCI 1100	Introduction to Computing	2	1	3	None
COMSCI 1101	Computer Programming 1	2	1	3	None
INTECH 1100	Discrete Mathematics	3	-	3	None
MATH 1100	Mathematics in the Modern World	3	-	3	None
PSYCH 1100	Understanding the Self	3	-	3	None
SOCSCI 1110	Ethics	3	-	3	None
PATHFIT 1	Movement Competency Training	2	-	2	None
NSTP 1100	Basic Army Science/Civic Welfare Training Service	3	-	3	None
Total				23	

First Year					
Second Semester					
Catalogue No.	Descriptive Title	No. of Units		Total Units	Prerequisite
		Lec	Lab		
COMSCI 1200	Computer Programming 2	2	1	3	ComSci 1101
COMSCI 1201	Data Structures and Algorithm	2	1	3	ComSci 1101, Intech 1100
ENSCI 1100	Science, Technology and Society	3	-	3	None
INTECH 1200	Social and Professional Issues	3	-	3	Comsci 1100
SOCSCI 1100	Readings in Philippine History	3	-	3	None
COMM 1100	Purposive Communication	3	-	3	None
PATHFIT 2	Exercise-based Fitness Activities	2	-	2	PATHFIT 1
NSTP 1200	Reserved Officer Training/ Civic Welfare Training Service	3	-	3	NSTP 1100
Total				23	

Second Year First Semester					
Catalogue No.	Descriptive Title	No. of Units		Total Units	Prerequisite
		Lec	Lab		
COMSCI 2100	Information Management	2	1	3	ComSci 1201
COMSCI 2101	Operating Systems	3	-	3	ComSci 1100
COMSCI 2110	Object Oriented Programming	2	1	3	ComSci 1200
INTECH 2100	Web Design and Multimedia	2	1	3	ComSci 1100
ARTS 1100	Art Appreciation	3	-	3	None
ENGL 3125	Technical Writing	3	-	3	None
PATHFIT 3	Menu of Dance, Sports, Martial Arts, Group Exercise, Outdoor and Adventure Activities	2	-	2	PATHFIT 2
ACCT 1001	Fundamentals of Accounting	3	-	3	None
		Total		23	

Second Year Second Semester					
Catalogue No.	Descriptive Title	No. of Units		Total Units	Prerequisite
		Lec	Lab		
COMSCI 2200	Advanced Database Management Systems	2	1	3	ComSci 2100
COMSCI 2201	Systems Integration and Architecture	3	-	3	ComSci 2110
INTECH 2200	Computer Networks 1	2	1	3	ComSci 2101
INTECH 2201	Web Applications Development 1	2	1	3	Intech 2100
INTECH 2202	Information Assurance and Security 1	3		3	Comsci 1100
SOCSCI 1105	The Contemporary World	3	-	3	None
PATHFIT 4	Menu of Dance, Sports, Martial Arts, Group Exercise, Outdoor and Adventure Activities	2	-	2	PATHFIT 2
GEELEC 1	Communications & AI	3	-	3	None
		Total		23	

Third Year First Semester					
Catalogue No.	Descriptive Title	No. of Units		Total Units	Prerequisite
		Lec	Lab		
INTECH 3100	Information Assurance and Security 2	3	-	3	Intech 2202
INTECH 3101	Human Computer Interaction	3	-	3	Comsci 1100
INTECH 3110	Computer Networks 2	2	1	3	ComSci 2101
INTECH 3112	Web Applications Development 2	2	1	3	Intech 2201
STAT 3206	Quantitative Methods	3	-	3	None

COMSCI 3100	Applications Development and Emerging Technologies	2	1	3	ComSci 2201
PHILI 1100	Life, Works and Writings of Dr. Jose Rizal	3	-	3	None
ITRM 3100	Research Methods	3	-	3	None
Total				24	

Third Year					
Second Semester					
Catalogue No.	Descriptive Title	No. of Units		Total Units	Prerequisite
		Lec	Lab		
ITCAP 3200	IT Capstone Project 1	3	-	3	ComSci 3100, Intech 3110, ITRM 3100
INTECH 3200	Systems Administration and Maintenance	2	1	3	Intech 3100
INTECH 3203	Integrative Programming and Technologies	2	1	3	Intech 2201
ITELEC 4__	(IT Elective 1)	3	-	3	As prescribed by the elective course
ITELEC 4__	(IT Elective 2)	3	-	3	As prescribed by the elective course
Total				15	

Fourth Year					
First Semester					
Catalogue No.	Descriptive Title	No. of Units		Total Units	Prerequisite
		Lec	Lab		
ITCAP 4100	IT Capstone Project 2	3	-	3	ITCAP 3200
INTECH 4100	Technopreneurship	3	-	3	Junior standing
ITELEC 4__	(IT Elective 3)	3	-	3	As prescribed by the elective course
ITELEC 4__	(IT Elective 4)	3	-	3	As prescribed by the elective course
Total				12	

Fourth Year					
Second Semester					
Catalogue No.	Descriptive Title	No. of Units		Total Units	Prerequisite
		Lec	Lab		
ITPRAC 4398	On-the-Job Training	9	-	9	All academic units
Total				9	

List of IT Professional Electives

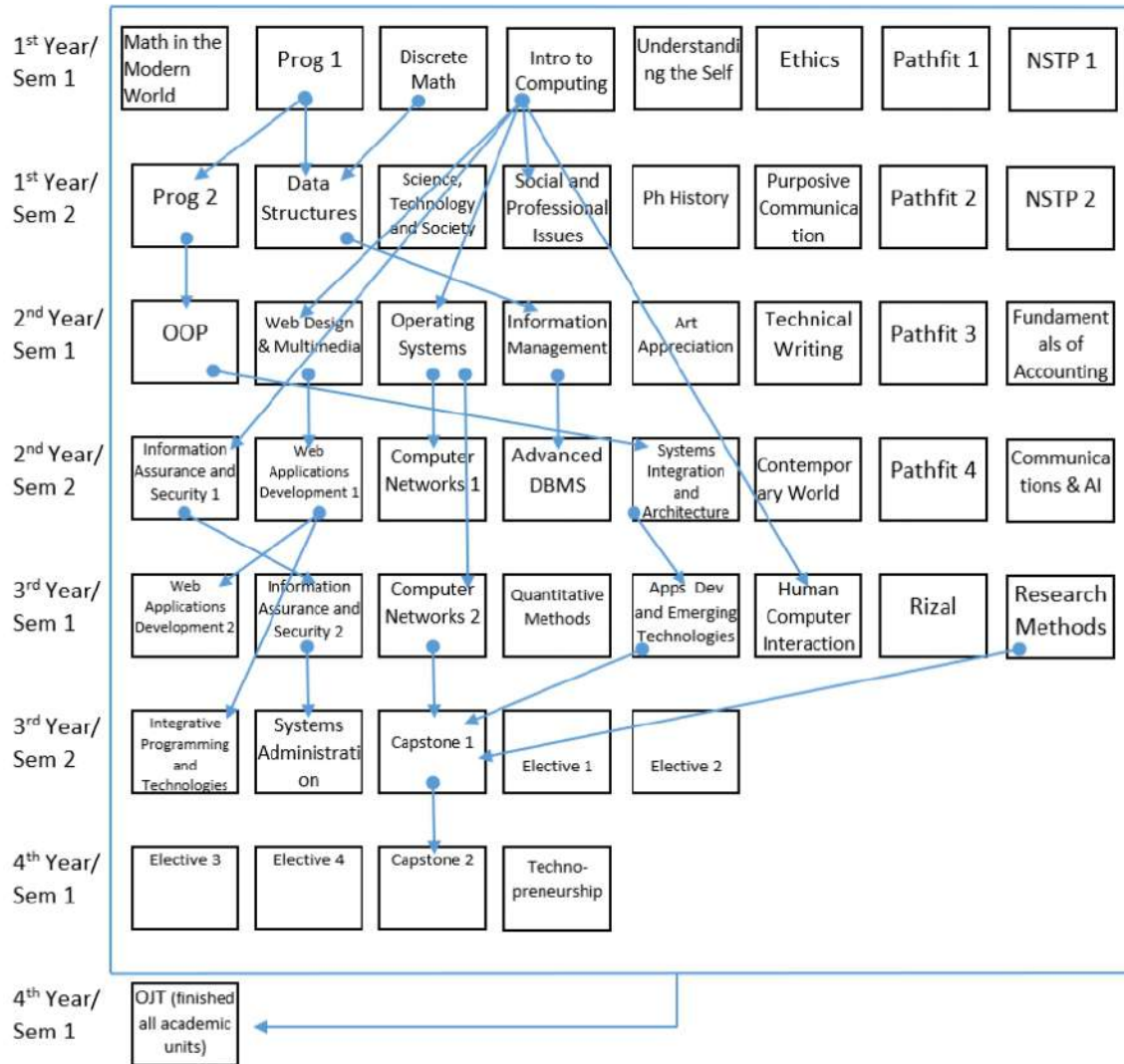
MAJOR IN SOFTWARE SYSTEMS AND WEB APPLICATIONS ENGINEERING

Catalogue No.	Descriptive Title	No. of Units		Total Units	Prerequisite
		lec	Lab		
ITELEC 4100	Cloud Computing Technologies	3	-	3	Senior Standing
ITELEC 4111	Blockchain Technology	3	-	3	COMSCI 3100
ITELEC 4112	Big Data	3	-	3	COMSCI 2100
ITELEC 4113	Advanced Systems Integration and Architecture	2	1	3	COMSCI 2201
ITELEC 4114	Advanced Web Applications Development	2	1	3	INTECH 3112
ITELEC 4115	Data Analytics	2	1	3	COMSCI 2100
ITELEC 4116	Augmented Reality and Virtual Reality	2	1	3	COMSCI 3100
ITELEC 4117	Artificial Intelligence and Expert Systems	2	1	3	Junior Standing
ITELEC 4118	Natural Language Processing	3	-	3	Junior Standing

MAJOR IN NETWORK SYSTEMS AND INFRASTRUCTURE ENGINEERING

Catalogue No.	Descriptive Title	No. of Units		Total Units	Prerequisite
		lec	Lab		
ITELEC 4100	Cloud Computing Technologies	3	-	3	Senior Standing
ITELEC 4211	Advanced Cyber Security	3	-	3	INTECH 3100
ITELEC 4212	Windows Enterprise Administration	3	-	3	Junior Standing
ITELEC 4213	Internet of Things	2	1	3	Junior Standing
ITELEC 4214	Wide Area and Enterprise Network Technologies Development	2	1	3	INTECH 3110
ITELEC 4215	Linux Systems Administration	2	1	3	Junior Standing
ITELEC 4216	Virtual Systems and Services	2	1	3	INTECH 3110
ITELEC 4217	High Performance Computing	2	1	3	Senior Standing
ITELEC 4218	Advanced Systems Administration	3	-	3	Senior Standing

Course Prerequisite Map



LABORATORY AND PHYSICAL FACILITIES

The BSIT program features 9 classrooms, each with a seating capacity of 50, and 7 computer laboratories, each equipped with 20 workstations.

Additional support facilities include student lounges, a reading lab, a consultation room, a function hall, and 4 research laboratories.

All facilities are equipped with projection equipment and internet access.

FACULTY

The Department of Information Technology has a teaching staff of 26 members, including 4 with PhD or doctoral degrees and 8 with master's degrees.