BACHELOR OF SCIENCE
in Information Technology

Program Description

> The Bachelor of Science in Information Technology focuses in creating web applications and mobile applications. The program also includes the study of the utilization of both hardware and software technologies involving planning, installing, customizing, operating, managing and administering, and maintaining information technology infrastructure that provides computing solutions to address the needs of an organization.
>
> The program prepares graduates to address various user needs involving the selection, development, application, integration and management of computing technologies within the organization.

Program Educational Objectives

Within three to five years after obtaining a Bachelor's degree in Information Technology at the University of St. La Salle, a graduate is expected to have:

1. Made contributions as an IT practitioner in computing industry applying skills and abilities learned on web and mobile application development, software and hardware integration, information security and networking.
2. Exhibited high standards of professionalism while maintaining social and ethical responsibilities both in local and International organizational environment.
3. Capability of communicating and engaging in life-long learning activities relevant to their profession, including earning advanced degrees, attaining professional certification and engaging in research activities to further nation building and national development.

Program Outcomes

By the time of graduation, the students of the program shall have the ability to:

1. Analyze and evaluate complex problems and design efficient computing solutions.
2. Solve problems by utilizing a user-centered methodology in the design, creation, implementation, and management of computer-based systems.
3. Design and develop a web and/or mobile based computing solutions.
4. Analyze and implement IT security controls and policies.
5. Design and implement network configuration and management.
6. Perform system management and maintenance to ensure system stability and reliability.
7. Engage in continuous learning as well as research and assess new ideas and information to provide capability for life-long learning.
8. Plan and design the development, application, integration and management of computing technologies within an organization.
9. Implement and evaluate an integrated web and mobile based computing solutions to address current issues in the society.
10. Produce technical documentation responsive to an identified computing solution.
11. Use communication and collaboration skills as a member of a diverse team.
12. Demonstrate professional behavior in response to an ethically challenging scenario in computing, writing, presentation, and clear instructions.

Admission Requirements

1. High School graduates and transferees seeking admission to the BSIT program must meet the criteria and cut-off scores set by the University for the BSIT program.
2. Shiftees must not have accumulated 15 or more units of failures.

Retention Policies

1. Students who fail in 50% or more of the subjects taken during the previous semester will be asked to shift to another course. Courses dropped are considered failed.
2. Students who fail in two or more major subjects in one semester shall be put on probation.
3. Student must not incur more than two failures in the same Math or IT Core/ Professional courses; otherwise they will be advised to drop from the program.

Teaching and Learning Activities

1. Lecture and Classroom discussions
2. Programming demonstration
3. Guided Hands-on Programming Sessions
4. Guided Design and Development of Project Specifications
5. Independent Project Requirements Gathering, Design and Implementation
6. Mentorship and Monitored Internships.
7. Case Analysis and Case Studies

BACHELOR OF SCIENCE
in Information Technology

FIRST YEAR

First Semester

		Total Credit Units	Lec	Lab	Total Assessed Units	Pre-requisite	Co-requisite
CC101	Introduction to Computing	3	3	0	3		
CC102	Computer Programming 1	3	2	3	5		
ITP201	Graphics Design	3	2	3	5		
ARTAP	Art Appreciation	3	3	0	3		
MATHMW	Mathematics in the Modern	3	3	0	3		
PCOM	Purposive Communication	3	3	0	3		
STS	Science, Technology and Society	3	3	0	3		
IRS1	Lasallian Spirituality	3	3	0	3		
PED1	Physical Education 1 (Wellness and Fitness)	2	2	0	2		
	Total	**26**	**24**	**6**	**30**		

Second Semester

		Total Credit Units	Lec	Lab	Total Assessed Units	Pre-requisite	Co-requisite
ITC101	Introduction to Web Authoring	3	2	3	5	ITP201	
CC103	Computer Programming 2	3	2	3	5	CC102	
ITL301	Usability, HCI and UI Design	3	0	3	3	ITP201	
ETHICS	Ethics	3	3	0	3		
FORLAN	Foreign Language	3	3	0	3		
USELF	Understanding Self	3	3	0	3		
IRS2	Christian Morality	3	3	0	3		
PED2	Physical Education 2 (Team Sports and Rhythmic Activities)	2	2	0	2		
Math 1	College Algebra	3	3	0	3		
	Total	**26**	**21**	**9**	**30**		

Summer

		Total Credit Units	Lec	Lab	Total Assessed Units	Pre-requisite	Co-requisite
ITL302	Computer Platform Technologies	3	3	0	3	CC103	
ITP204	Technopreneurship	3	3	0	3		
RVARTS	Reading Visual Art	3	3	0	3		
	Total	**9**	**9**	**0**	**9**		

SECOND YEAR

First Semester

		Total Credit Units	Lec	Lab	Total Assessed Units	Pre-requisite	Co-requisite
ITP203	Object Oriented Programming	3	2	3	5	CC103	
ITP202	Operating Systems	3	3	0	3	ITL302	
ITC102	Database Management System 1	3	2	3	5	CC103	
ITP205	Web Design and Implementation	3	2	3	5	ITC101	
Math 2	Trigonometry	3	3	0	3		
PED3	Physical Education 3 (Individual and Dual Sports)	2	2	0	2		
NSTP1	National Service Training Program	3	3	0	3		
IGG1	Group Guidance 1	1.5	1.5	0	1.5		
	Total	**21.5**	**18.5**	**9**	**27.5**		

Second Semester

		Total Credit requisite Units	No. of hrs Lec	Lab	Total Assessed Units	Pre-requisite	Co-
ITP206	Web Application Development	3	2	3	5	ITP205	
ITC103	Database Management System 2	3	2	3	5	ITC102	
ITP209	Computer Networking 1	3	2	3	5	ITL302	
CC104	Data Structures and Algorithms	3	3	0	3	CC103	
PSPEAK	Public Speaking	3	3	0	3		
CWRLD	The Contemporary World	3	3	0	3		
NSTP2	National Service Training Program	3	3	0	3		
IRS3	Spirituality in the Workplace	3	3	0	3		
	Total	**24**	**21**	**9**	**30**		

THIRD YEAR

First Semester

		Total Credit requisite Units	No. of hrs Lec	Lab	Total Assessed Units	Pre-requisite	Co-
ITP208	Systems Analysis and Design	3	3	0	3	ITP203	
ITP207	System Integration and Architecture 1	3	2	3	5	ITP202	
ITC104	Introduction to Mobile Authoring	3	2	3	5	ITP203	
GBOOKS	Great Books	3	3	0	3		
RHIST	Readings in Philippine History	3	3	0	3		
LOGIC	Logic	3	3	0	3		
ABMB	Accounting for Non-Accountants	3	3	0	3		
Math 3	Discrete Structures	3	3	0	3		
PED4	Physical Education 4 (Recreation and Water Safety)	2	2	0	2		
	Total	**26**	**24**	**6**	**30**		

Second Semester

		Total Credit requisite Units	No. of hrs Lec	Lab	Total Assessed Units	Pre-requisite	Co-
ITP210	Information Assurance and Security 1	3	3	0	3	ITP207	
ITP211	Mobile Application Development	3	2	3	5	ITC104	
ITP213	Computer Networking 2	3	2	3	5	ITP209	
ITL304	System Integration and Architecture 2	3	2	3	5	ITP207	
ITP214	Social Issues & Professional Practices	3	3	0	3	3rd Year	
ITP215	Capstone and Research 1	3	3	0	3	ITP208	
ITP218	Quantitative Methods	3	3	0	3		
ITP222	Project Management	3	3	0	3	ITP208	
	Total	**24**	**21**	**9**	**30**		

FOURTH YEAR

First Semester		Total Credit requisite Units	No. of hrs Lec	Lab	Total Assessed Units	Pre-requisite	Co-
ITP216	Information Assurance and Security 2	3	0	3	3	ITP210	
ITP217	Capstone and Research 2	3	3	0	3	ITP215, ITP211, ITP206, ITP213	
ITP219	Content Management System	3	3	0	3	ITP206	
ITP220	Systems Administration and Maintenance	3	2	3	5	ITP210	
ITL303	Web Animation Techniques	3	3	0	3	ITP205	
ITP212	IT Trends	3	3	0	3	CC101	
GENSOC	Gender and Society	3	3	0	3		
RIZAL	Rizal's Life, Works, and Writings	3	3	0	3		
ITL305	Enterprise Business Application	3		3	3	ABMB	
	Total	**27**	**20**	**9**	**29**		

Second Semester		Total Credit requisite Units	No. of hrs Lec	Lab	Total Assessed Units	Pre-requisite	Co-
ITP221	Internship	9	500	0	9	4th year Graduating	
	Total	**9**	**500**	**0**	**9**		

SUMMARY OF REQUIRED COURSES Bachelor of

Science in Information Technology

		No. of Total Units Required	Units Equivalent
General Education			
	Mathematics in the Modern World	3	
	Purposive Communication	3	
	Science, Technology and Society	3	
	The Contemporary World	3	
	Understanding Self	3	
	Reading Visual Art	3	
	Art Appreciation	3	
	Rizal`s Life, Works, and Writings	3	
	Ethics	3	
	Readings in Philippine History	3	
	Great Books	3	33
Mathemathics			
	College Algebra	3	
	Trigonometry	3	
	Discrete Structures	3	9
Other Non-Technical Courses			
	Group Guidance 1	1.5	
	Lasallian Spirituality	3	
	Christian Morality	3	
	Spirituality in the Workplace	3	10.5
Languages and Humanities			
	Logic	3	
	Gender and Society	3	
	Foreign Language	3	
	Public Speaking in the Discipline	3	12
Physical Education			
	Wellness and Fitness	2	
	Team Sports and Rhythmic Activities	2	
	Individual and Dual Sports	2	
	Recreation and Water Safety	2	8
NSTP			
	National Service Training Program 1	3	
	National Service Training Program 2	3	6
Common Courses			
	Introduction to Computing	3	
	Computer Programming1	3	
	Computer Programming2	3	
	Data Structures and Algorithms	3	12
Core Courses			
	Introduction to Web Authoring	3	
	Database Management System 1	3	
	Database Management System 2	3	
	Introduction to Mobile Authoring	3	12
Professional Courses			
	Graphics Design	3	
	Operating System	3	
	Technopreneurship	3	
	Object Oriented Programming	3	
	Web Design and Implementation	3	
	Web Application Development	3	
	Systems Analysis and Design	3	
	Systems Integration and Architecture 1	3	

Computer Networking 1	3	
Information Assurance and Security 1	3	
Mobile Application Development	3	
IT Trends	3	
Computer Networking 2	3	
Social Issues and Professional Practices	3	
Capstone and Research 1	9	
Information Assurance and Security 2	3	
Capstone and Research 2	3	
Quantitative Methods	3	
Enterprise Business Application	3	
Content Management Systems	3	
Systems Administration and Maintenance	3	
Internship	9	78

IT Elective Courses

Usability, HCI and User Interaction Design	3	
Computer Platform Technologies	3	
Web Animation Techniques	3	
System Integration and Architecture 2	3	12
Total		**192.5**

MAJOR COURSE DESCRIPTION
Information Technology

CC101   **3 units**
INTRODUCTION TO COMPUTING
(LECTURE) This course provides an
overview of the Computing Industry and
Computing Profession, including Research
and Applications in different fields, the key
components of computer systems.

At the end of the course, the students are
expected to put up an exhibit as part of an
information awareness on the latest ICT
software   and   hardware   innovations,
computer security and viruses.

CC102   **3**
units
COMPUTER
PROGRAMMING 1 (WITH
LABORATORY)
Problem solving using general purpose
programming language. The emphasis is to
train students to design, implement, test,
and debug programs intended to solve
computing problems using fundamental
programming constructs.

At the end of the course, the students are
expected   to   apply   their   skills   and
techniques to solve industry and societal
problems by analyzing the requirement and
implementing project prototypes.

CC103   **3**
units
COMPUTER
PROGRAMMING 2 (WITH
LABORATORY)
Problem solving using general purpose
programming language. The emphasis is to
train students to design, implement, test,
and debug programs intended to solve
computing problems using basic data
structures and standard libraries.

At the end of the course, the students are
expected   to   apply   their   skills   and
techniques to solve industry and societal
problems by analyzing the requirement and
implementing project prototypes.

CC104   **3 units**
DATA   STRUCTURES   AND
ALGORITHMS (LECTURE)
The course covers the standard data
representation and algorithms to solve
computing   problems   efficiently   (with
respect to space requirements and time
complexity of algorithm). This covers the
following: Stacks, Queues, Trees, Graphs,
Maps, and Sets.   Thorough discussion of
sorting   and   searching   algorithms   and

hashing is covered.

At the end of the course, the students are
expected   to   choose   among   which
alternative data structure is most efficient
to solve specific data- representation and
algorithmic problems.

ITC101   **3 units**
INTRODUCTION TO WEB AUTHORING (WITH LABORATORY)
Designed to introduce students to many of the basic concepts, issues and techniques related to designing, developing and developing personal websites.

At the end of the course, the students are expected to design and implement a (1) web page document, (2) Cascading Style Sheets (3) JavaScripts; conceptualize, design and implement a web page based on a given specification that uses graphical editing tools.

ITC102   **3 units**
DATABASE MANAGEMENT SYSTEM 1 (WITH LABORATORY)
This course covers discussion of database system from analysis, relational model to relational database which includes the nature of the data, data association and data semantics. Structured query language also discuss in this course which focus on data definition, data manipulation and data control language. Several DBMS will be introduced to implement data models for use in business application programs.

At the end of the course, the students are expected to work in a team to design a database from data gathering to physical database and present it in front of the panel.

ITC103   **3 units**
DATABASE MANAGEMENT SYSTEM 2 (WITH LABORATORY)
This course covers advance features of DBMS and research integration in designing domain-specific DBMS models. Topics include database objects, concurrency and locking, database security and backup and recovery.

At the end of the course, the students are expected to work in a team to develop a system and database structure using any programming language.

ITC104   **3 units**
INTRODUCTION TO MOBILE AUTHORING (WITH LABORATORY)
This course will introduce students to the different mobile computing platforms and technologies. The course will specifically look at the tools used to design mobile applications; explore user interface considerations for mobile devices; and the design and development of native application.

At the end of the course, the students are expected to understand the technical challenges posed by current mobile devices and wireless communications and be able to evaluate and select appropriate suitable software tools and APIs for the development of a particular mobile application.

ITP201   **3 units**
**GRAPHICS DESIGN (WITH
LABORATORY)** Students will be taught
the fundamentals of working with raster
and vector editing using industry-
standard software such as Adobe
Photoshop and Adobe Illustrator.

At the end of the course, the students are
expected to demonstrate proficiency in a
range of computer graphics technology,
including bitmap image editing, vector
graphics, page layout, web design, mobile
web design effects and produce a portfolio
of work that meets employer and
marketplace expectations.

ITP202   **3
units**
**OPERATING SYSTEM
(LECTURE)**
This course provides an introduction to the
concepts, theories and components that
serve as the basis for the design of the
classical and modern Operating Systems.
Topics include concepts on Computer and
operating system structures, Process and
memory management, Process
synchronization and communication, Virtual
memory management, Secondary Storage
Management, File systems Management
and Protection and Security.

At the end of the course, the students are
expected to demonstrate competence and
understanding of the concepts, structure
and design of operating systems and its
impact on application system design and
performance.

ITP203   **3 units**
**OBJECT-ORIENTED PROGRAMMING
(WITH LABORATORY)**
This course introduces students to the
object- oriented programming paradigm
using Java. It focuses on definition of
classes along with the fundamental
principles of object-oriented design such as
data encapsulation, inheritance, and
polymorphism.

At the end of the course, the students are
expected to apply their skills and
techniques to solve industry and societal
problems by analyzing the requirement and
implementing project prototypes.

ITP204   **3
units**
**TECHNOPRENEURSHIP
(LECTURE)**
This course covers the theories and
principles of technopreneurship,
development of an IT business model and
management of IT business start-ups.

At the end of the course, the students are
expected to develop and pitch a product
and/or business model to a prospective
customers/investors

ITP205   **3 units**
**WEB DESIGN AND IMPLEMENTATION
(WITH LABORATORY)**
This course will prepare students with skills
in designing and implementing website
development based on professional and
industry demands. To develop skills in web
development using Extended

Hypertext Markup Language, extended basic HTML with Cascading Style Sheets, and integration of JavaScript as a web development for its user's interface, database management, PHP scripting and dynamic programming language needed for a working website.

At the end of the course, the students are expected develop web applications using adopted client- side scripting and other Web GUI technologies to create and validate documents, generate contents via programming and integrate digital libraries with other media contents; and set up a web server to support server-side processing in a secure fashion and identify common server-side configuration issues that affect securing.

ITP206   3 units
WEB APPLICATION DEVELOPMENT (WITH LABORATORY)
The course covers design and development of web-based applications. Emphasis is on advanced server-side and client-side programming and integration of web applications with database and web server applications.

At the end of the course, the students are expected to design, implement, test, document, and deploy a web application. Apply advanced web programming concepts and techniques; integrate web applications with database and web server applications.

ITP207   3 units
SYSTEMS INTEGRATION AND ARCHITECTURE 1 (WITH LABORATORY)
This course focuses on the software integration of information systems in organizations, the process by which different computing systems and software applications are linked together functionally. It examines the strategies and methods for blending a set of interdependent systems into a functioning or unified whole, thereby enabling two or more applications to interact and exchange data seamlessly. The course will explore tools and techniques for systems integration as well as proven management practices for integration projects.

At the end of the course, the students are expected to organize a team to submit an effective project plan with an appropriate computing requirements as a solution for a specific IT problem.

ITP208   3 units
SYSTEMS ANALYSIS AND DESIGN (LECTURE) This course introduces established and evolving methodologies for the analysis, design, and development of an information system. Emphasis is placed on system characteristics, managing projects, prototyping, CASE/OOM tools, and systems development life cycle phases.

At the end of the course, the students are expected to submit a report which includes the analysis of a problem and the design of an appropriate solution using a combination of OOM tools and techniques.

ITP209   **3 units**
COMPUTER NETWORKING 1
(WITH LABORATORY)
This course will introduce students to the fundamental concepts of networking, networking technologies, concepts and terminology.

At the end of the course, the students are expected to explain the concepts and theories of networking; describe and analyze the hardware and software components of a network and the interrelations between them; and explain networking protocols and their hierarchical relationship.

ITP210   **3 units**
INFORMATION ASSURANCE AND SECURITY 1
(LECTURE)
This course intended to provide students an introduction to information assurance from the perspective of web-based applications. The course covers fundamental concepts necessary to understand the threats to security and privacy as well as various defenses against those threats.

At the end of the course, the students are expected to examine the relationship between threats, vulnerabilities, countermeasures, attacks, compromises and remediation throughout the entire system life cycle; explain the key factors involved in the authentication and how they are used to verify identify and grant access to the system; and describe the legal and ethical considerations related to the handling and management of enterprise information assets.

ITP211   **3 units**
MOBILE APPLICATION DEVELOPMENT (WITH LABORATORY)
This course is intended to provide students with a comprehensive understanding of the tasks related to the development of enterprise-level mobile applications. The course will focus on the creation of mobile solutions for adopted modern platforms/ framework, including major mobile operating systems.

At the end of the course, the students are expected to develop enterprise-level mobile solutions, by taking full advantage of the capabilities of the adopted platform/framework. Work with software/ hardware tools to develop, test and debug mobile applications.

ITP212   **3 units**
IT TRENDS
(LECTURE)
This course introduces the students to the latest Information and Communication Technology (ICT) developments, new concepts and innovations in the field of Information Technology (IT) not covered in other subjects. This course includes a wide variety of interesting topics on the current technological trends in both software and hardware. Students will be exposed to the latest technological trends spanning the global, national and local levels through classroom lectures and discussions with IT industry experts in seminars and forums.

At the end of the course, the students are expected to put up an exhibit as part of an information awareness on the latest ICT developments and innovations.

ITP213   **3 units**
COMPUTER NETWORKING 2
            (WITH LABORATORY)

This course aims to provide advanced background on relevant computer networking topics, allowing students to acquire and pursue deeper knowledge in the field. The course provides the students with appropriate theoretical and practical skills in the area of multi-service networks.

At the end of the course, the students are expected to manage network operating system, systems software, network services and security; evaluate and compare systems software and emerging technologies; effectively communicate technical information verbally, in writing, and in presentations; and use appropriate resources to stay abreast of the latest industry tools and techniques analyzing the impact on existing systems and applying to future situations.

ITP214   **3 units**
SOCIAL ISSUES AND
            PROFESSIONAL PRACTICES
(LECTURE)

This course studies the social impact, implications, and effects of computers, and the responsibilities of computer professionals in directing the emerging technology. Specific topics include an overview of the history of computing, computer applications and their impact, the computing profession, the legal and ethical responsibilities of professionals, and careers in computing.

At the end of the course, the students are expected to put up an exhibit as part of an information awareness campaign about IT security and computer threats.

ITP215   **3 units**
CAPSTONE AND RESEARCH 1
(LECTURE)

This course provides the students with opportunities to synthesize their accumulated knowledge to explore topics which reflect their personal interests, future goals and levels of ability to develop computing solutions through Information Technology (IT) infrastructure. It intends to provide practical experience in the whole process of software development of software-based projects from analysis through design to implementation and testing.

At the end of the course, the students are required to submit a complete written proposal documentation comprising the first three (3) chapters of the capstone project and conducted a successful proposal presentation before the panel members.

ITP216   **3 units**
INFORMATION   ASSURANCE   AND SECURITY 2
(LABORATORY)
This course focuses on the fundamentals of information security that are used in protecting both the information present in computer storage as well as information traveling over computer networks. Interest in information security has been spurred by the pervasive use of computer- based applications such as information systems, databases, and the Internet.

At the end of the course, the students are expected to discuss policies and practices to systems integration and architecture to ensure secure system operation and information assurance; perform a vulnerability analysis of a system and explain how design, implementation; identify installation of hardware and software that contributes to vulnerabilities of the organization; and propose strategies on how to counter attack threats.

ITP217   **3 units**
CAPSTONE   AND   RESEARCH   2
(LECTURE)
This course challenges students to proceed to systems development based on the approved capstone project proposal. The project will demonstrate the students' ability to analyze, synthesize, evaluate information, design and develop a prototype system.

At the end of the course, the students are required to submit a comprehensive written documentation comprising all chapters of the capstone project and conducted a successful oral presentation before the panel members.

ITP218   **3 units**
QUANTITATIVE   METHODS
(LECTURE)
This course is to provide students with the mathematical fundamentals required for successful quantitative analysis of problems in the field of computing. The course introduces the mathematical prerequisites for understanding probability and statistics.

At the end of the course, the students are expected to learn the techniques to find limits of sequences and functions, differentiating and integrating techniques, continuous functions, asymptotes and graphing techniques, permutations and combinations, the classical and statistical

definitions of probability, conditional probability, random variables, the mathematical expectation and the variance of random variables, Binomial, Poisson and Geometric distributions, the strong law of large numbers, discrete and continuous distribution functions, Normal distribution and the central limit theorem.

ITP219   3 units
CONTENT MANAGEMENT SYSTEMS (LECTURE)
This course presents web development techniques using industry's leading content management systems. Introduces and discuss the characteristics and components of various types of websites (corporate portals, corporate intranets and extranets, online magazines, newspapers, and publications, e-commerce and online reservations, government applications, small business Web sites). Presents methods, languages, and tools related to the web content management systems from an applied perspective.

At the end of the course, the students are expected to design and translate real-world business problems into practical IT solutions using CMS, CMS extensions, CMS modules, components and plugins.

ITP220   3 units
SYSTEMS   ADMINISTRATION AND MAINTENANCE (WITH LABORATORY)
This course focuses on administration of operating systems in a client-server technology (Windows and Linux on virtual machine), installation and maintenance. It prepares students to installation of Windows Server, NTFS file system and folder permissions, Domain Name System, Active Directory, local and domain Group Policy, Windows Terminal Services, Internet Security and Acceleration Server, Internet Information Services, communications and networking. An introduction to Linux, installing Ubuntu, advanced usage and managing Ubuntu, terminal, working with Windows, system administration, configuration of server: WWW, DHCP, DNS, Samba, NFS, emails and printers.

At the end of the course, the students are expected to justify how resources will be allocated for the various administrative domain; formulate policies governing the use of IT systems within the organization; recommend measures on how to administer and maintain systems effectively; and modify configuration of an operating system to implement policy.

ITP221   9 units
INTERNSHIP
The BSIT program in its internship course prepare the graduating students for their professional career after college and examines the practical and active interaction of our students with the IT and other professionals, technology, and organizations engaged in the communication, gathering, maintenance, and distribution of information using the hardware and software systems used in the IT industry. Under this course, students are exposed and trained to experience practical application and technical knowledge of development of web based and mobile applications, installation and maintenance of computer networks and information technology security. This course, likewise, provides students with an understanding of computer-based

information systems and technologies, as well as the strategies used in managing them. This course is an immersion program wherein students acquire and enhance their competencies, technical skills, and professional attitude in the environment of IT industry with proper guidance of a professional supervising their training during the entire internship period. This course requires 500 hours of On-the-Job Training for information technology related learning exposures.

Upon completion of the course, students are expected to learn the actual operation of any or all of the IT systems utilized by the specific department where they were assigned in the establishment representing the industry and translate into acquired skills for efficient hand- on application; develop desired work attitude and behavior towards their profession and other professionals and able to apply practical technical skills learned from their supervisors as needed for at least entry level positions; appreciate the importance of time management in balancing study with work and achieved a competitive portfolio of technical skills, trainings and seminars; realize and discover their interest, talents, and abilities and to focus or specialize on them in pursuit of their career path; confidently ready to face the challenge of the IT industry where it regards their workplace as a venue to work and live out the Lasallian Graduates Attributes.

design and implement software solutions that accommodate specified requirements and constraints, based on analysis or modelling and requirements specification.

ITL301   **3 units**
USABILITY, HCI, AND USER INTERACTION DESIGN (LABORATORY)
The course focuses on imparting to students the techniques in making software more intuitive to use and hence making it easy for target users to learn its fundamental functions and features. This course includes the principles of human computer interaction and use interface design techniques.

At the end of the course, the students are expected to create and conduct a simple usability test for an existing software application and the use any IDE to create a simple application that supports a graphical user interface.

ITL302   **3 units COMPUTER PLATFORM TECHNOLOGIES (LECTURE)**
This course provides the hardware/software technology background for information technology personnel. Hardware topics include CPU architecture, memory, registers, addressing modes, buses, instruction sets and a variety of input/output devices. At the end of the course, the students are expected to

ITL303   **3 units**
WEB   ANIMATION   TECHNIQUES (WITH LABORATORY)

This course will prepare students with skills in combining graphic animation tools and procedures with accepted principles of web page writing. It includes artistic principles and techniques of web page design and layout, relevant work practices and methodology in the fulfillment of web-based animation production and design tasks within a professional context and apply art and design theory in solving visual communication problems.

At the end of the course, the students are expected to create web sites with enhanced interactivity using HTML5 and CSS3 and JavaScript

ITL304   **3 units**
SYSTEMS   INTEGRATION   AND ARCHITECTURE 2 (WITH LABORATORY)

The course provides an introduction to single board microcontrollers and interfacing. Operation and applications of single board microcontrollers for the Internet of Things (IoT) systems.

At the end of the course, the students are expected to evaluate embedded system in terms of its interface and the components; demonstrate the interaction between software and hardware in an IoT device; and utilize the use of networking and basic networking hardware.

BACHELOR OF SCIENCE
in Entertainment and Multimedia Computing

Program Description

Bachelor of Science in Entertainment and Multimedia Computing is the study and use of concepts, principles, and techniques of computing in the design and development of multimedia products and solutions. It includes various applications such as in science, entertainment, education, simulations and advertising.

The Digital Animation Technology specialization is focused on the application of fundamental and advanced theories and advanced techniques in 2D and 3D animation, use and development for advancement of animation technologies, and production of commercially acceptable content and viable solutions for different platforms such as broadcast, web and mobile cast.

Program Educational Objectives

Within three to five years after obtaining a Bachelor's degree in Entertainment and Multimedia Computing at the University of St. La Salle, a graduate is expected to have:

1. Assumed leading and significant roles as digital animation professionals by applying skills, abilities and techniques learned in the design and development of multimedia products and solutions which include the use of various digital animation technologies.
2. Exhibited high standards of professionalism while maintaining social and ethical responsibilities both in local and International organizational environment.
3. Capability of communicating and engaging in life-long learning activities relevant to their profession, including earning advanced degrees, attaining professional certification and engaging in research activities to further nation building and national development.

PROGRAM OUTCOMES

By the time of graduation, the students of the program shall have the ability to:

1. Apply concepts of mathematics, computing sciences to the practice of being an entertainment and multimedia computing professional.
2. Analyze physical sciences concepts in relation to the practice of entertainment and multimedia computing.
3. Analyze and evaluate appropriate techniques, skills and modern computing tools necessary for the practice of being a professional game developer or animator.
4. Conceptualize and formulate ideas to solve problems based on the given requirements.
5. Compare and contrast the effects and impact of entertainment and multimedia computing projects on nature and society, and of their social and ethical responsibilities in consideration of intellectual property rights.
6. Demonstrate original, innovative, client-centric and creative outputs.
7. Illustrate, design, and build creative concepts that meets client needs within realistic constraints through project prototype implementation.
8. Integrate audio and video elements to clearly communicate the essence of the story.