



DEGREE PROGRAM LISTING

Bachelor of Science in Information Technology

Length of Program: 4 years

Program Description

This program is designed to prepare students for opportunities in information technology by encouraging use of the unique language of IT and the application of key concepts of the profession. Students will demonstrate the technical abilities and practical skills that help organizations innovate practices, products and processes. The program is designed to empower individuals to become passionate, solution-minded information technology professionals by fostering innovation, research, leadership development, solving real-life problems. Students will work toward leadership roles in organizations, honoring ethical responsibilities to stakeholders and the community while pursuing innovation, creation, application, integration, and the administration of computing technologies. In addition, this program provides a foundation for further studies.

Program Objectives

- Examine how IT is integral to the effective management of a modern-day, competitive organization and the role an IT professional plays in organizational leadership
- Demonstrate an understanding of the installation and maintenance of client and server operating systems, their associated network services, users, and file systems
- Configure secure network and computing applications while identifying the privacy concerns inherent in the IT profession
- Demonstrate the responsibilities of a project manager and the skills required to plan, design and execute projects to provide effective business solutions.
- Use critical thinking and decision support tools in the way of math formulas, computer software and information systems to analyze or solve problems

9/4/20

- Communicate effectively via multiple channels of exchange including oral, written and multi-media.
- Utilize basic research skills to examine IT practices and solutions
- Reflect on and relate one's social, ethical and legal responsibilities to stakeholders, the community and the environment

9/4/20

Roadmap: Information Technology - Bachelor

Lakewood University

Online learning

This roadmap is a recommended semester-by-semester plan of study for this major. A course with an "*" denotes its status as a general education course.

Course Code	Course subject and Title	Prerequisite	Credit Hours
Semester One			
LUO100	Lakewood University Orientation		0
NETF100	Networking Fundamentals		3
COMM100	Interpersonal Communication*		3
PJMG100	Project Management		3
ALG100	College Algebra		3
Semester Two			
ENG100	Introduction to English *		3
GOVT100	American Government*		3
CSA100	Computer Systems Architecture		3
DATA200	Fundamentals of Database		3
Semester Three			
PSY100	Introduction to Psychology *		3
BIO100	Principles of Biology		3
CLDF100	Cloud Fundamentals		3
MANA300	Managerial Accounting		3
Semester Four			
ENVS100	Environmental Science		3
STAT200	Statistics I		3
PHL100	Introduction to Philosophy		3
	Major Elective		3
Semester Five			
CSF200	Computer Security Fundamentals		3
SOCI100	Introduction to Sociology*		3
CALC100	Calculus I*		3
	Major Elective		3
Semester Six			
BSLWIS300	Business Law- Legal Issues in IT		3
OPMG200	Operations Management		3
DCDN300	Data Communication and Distributed Networks		3
PROG300	Introduction to Programming		3

9/4/20

Semester Seven			
	Major Elective		3
MCRE200	Microeconomics		3
OSAS300	Operating Systems and Application Software		3
SYSAD300	Introduction to System Analysis and Design		3
Semester Eight			
BUSE200	Business Ethics		3
	Major Elective		3
ENTP200	Entrepreneurship		3
DDA400	Database Design and Administrative		3
Semester Nine			
SARC400	System Architecture and Integration		3
SWDV300	Software Development		3
	Major Elective		3
ORGB200	Organizational Behavior		3
Semester Ten			
DINT400	Database Integrations		3
	General Elective		3
	Major Elective		3
	Major Elective		3
Total:			120

GE = 39

Major Electives:

1. Network Administration
 - a. Routing and Switching- RTSW400
 - b. Wireless and Mobile Communication- WLMC300
 - c. Network Security Management- NETM200
 - d. Enterprise Networking- ENTN400
 - e. Specialized Network Administration- SPAD400
 - f. Directory Services and Infrastructure- DSI300

2. Software Analysis and Development
 - a. Software Quality Control and Testing- SWQCT300
 - b. E-commerce Development- ECOMD200
 - c. Object-Oriented Application Development I- APPD300
 - d. Object-Oriented Application Development II- APPDII400
 - e. System Analysis and Design- SYAD400
 - f. Software Development for Mobile Devices- SWDVMB400

3. Business and Project Management
 - a. Advanced Database Management- ADM300
 - b. Information Systems Project Management- ISPM400
 - c. Enterprise Resource Management- ENTRM400

9/4/20

- d. Advanced Internet Security and Threats- AIST400
- e. E-Business Infrastructure Management- EBUSM300
- f. IT Management Strategy- ITMS300

General Elective:

- 1. Web Development- WDVP300
- 2. Advanced Java Programming- AJP400
- 3. Management Information System- MIS200

BACHELOR DEGREE COURSE DESCRIPTIONS

Advanced Database Management

3 Credit Hours

This course will provide students with an advanced understanding of what they learned about SQL in the fundamental course and introduce different advanced topics, including query optimization, concurrency, data warehouses, object-oriented extensions, and XML.

Advanced Internet Security and Threats

3 Credit Hours

The course will cover the advanced topics in Internet and Network security to help students understand complex attack paths and countermeasures specific system with different hardware/software components and architecture.

Advanced Java Programming

3 Credit Hours

The advanced course in Java programming will focus on advanced features. Topics will include Object Oriented Analysis and Design, automatic documentation generation using JAVADOC, Graphical User Interface development, database programming using Java Database Connectivity, network programming using sockets and Remote Method Invocation, N-tier programming using Common Request Broker Architecture, object serialization and remote objects, and collections

American Government

3 Credit Hours

The course provides a survey of the organization of American government, which includes an overview of the historical significance and provisions of the Constitution; the Bill of Rights; Congress; the Supreme Court; the Presidency; political parties and interest groups. The objective of the course is to lay the proper foundation for informed citizenship and more specialized study in political science.

Business Ethics

3 Credit Hours

This course examines business ethics from both an organizational and managerial perspective. Students will examine the goal of business organizations, as well as individual conduct in business settings. Ethical reasoning and ethical leadership will guide debate on topics such as: creating an ethical climate in an

9/4/20

organization, honesty, affirmative action, environmental ethics, ethics in advertising and sales, financial management, personnel management, and the role of character and virtues in effective leadership.

Business Law – Legal Issues in IT

3 Credit Hours

A course in legal and regulatory requirements that impact information technology with an emphasis on compliance and prevention of liabilities.

Calculus I

3 Credit Hours

This primary course on Calculus is designed for students intending to continue to advanced courses in calculus, and mathematics in general. Topics include a detailed study of differential calculus and its applications and are introduced to antiderivatives.

Calculus II

3 Credit Hours

This advance course is designed in a way intended for students who have already completed a Calculus I course and want to extend their skills in this subject.

Cloud Fundamentals

3 Credit Hours

Upon completion of this course students will be able to understand the cloud, enable Microsoft Cloud Services, administer Office 365 and Microsoft Intune and use and configure Microsoft cloud service, configure Exchange Online, SharePoint Online, including OneDrive, Skype for Business Online.

College Mathematics I

3 Credit Hours

This course is a basic review of mathematical skills, including terminology, checking accounts, taxes, payroll, step-by-step approaches. This course will help you develop math skills used in personal and business applications.

Computer Security Fundamentals

3 Credit Hours

This course provides students with a core foundation of technical knowledge necessary to design and build secure computing systems, to detect unauthorized use, and to protect those systems, their resources, and the data that they store or access.

Computer Systems Architecture

3 Credit Hours

This course will help students discover the concepts and essential skills necessary to administer operating systems, networks, software, file systems, file servers, web systems, database systems, system documentation, policies, and procedures.

Data Communication and Distributed Networks

3 Credit Hours

This course will provide students with a clear understanding of how networks, from LANs to the massive and global Internet, are built and how we can use computers to share information and communicate with one another. Topics included communication codes, transmission methods, interfacing, error detection, communication protocols, communications architectures, switching methods, and network types.

9/4/20

Database Design and Administration

3 Credit Hours

Upon completion of this course students will be able to improve business performance and bring efficiency through the development of credible databases. Students will learn to strategically develop appropriate architecture and design while performing data modeling, data warehousing using the updated tools and technologies.

Database Integrations

3 Credit Hours

This course will help students understand issues arising in data integration, focusing on the theoretical foundations of the area, and algorithms and software systems facilitating integration.

Directory Services and Infrastructure

3 Credit Hours

This course will prepare students to install, configure, secure and maintain services in the Windows Active Directory environment. Topics included but not limited to group policies, directory configuration, security strategies and certificate services.

E-Business Infrastructure Management

3 Credit Hours

This course will help students explore the process of running a business on the internet and common course topics included but not limited to internet marketing, database management, and web design. This course will help students manage the strategic development of e-business based organizations and appropriate e-business technologies.

E-commerce Development

3 Credit Hours

This course will provide students the basic understanding of the activities, issues, and concerns related to launching a new online business.

Economics

3 Credit Hours

This course provides an introduction to a broad range of economic concepts, theories and analytical techniques. It considers the use of a markets, supply and demand, and the fundamental model in which trade-offs and choices will be considered through comparison of costs and benefits of actions. Production and market structure will be analyzed at the firm level. Macroeconomic issues regarding the interaction of goods and services markets, labor and money at an aggregate level will be modelled

Introduction to English

3 Credit Hours

This course is designed to develop your ability to write clearly. Emphasis is on effective writing and revising techniques including purpose, organization, and mechanics. Various modes and strategies of descriptive, narrative and illustrative essays are covered. The culminating assignment is a research paper.

Enterprise Networking

3 Credit Hours

9/4/20

Students will be given the basic (design, implementation and management) concepts related to data communications and networking. Topics included but not limited to network topology, protocols, transmission media, switching techniques, access control and addressing for wired and wireless networks, network security and network management principles.

Enterprise Resource Management

3 Credit Hours

This course provides an overview of Enterprise Resource Planning, which will cover planning, manufacturing, sales, finance, and accounting. Students will be provided the basic understanding of methodology and practice of ERP using industry-leading software packages to explore the interaction among the different business processes.

Entrepreneurship

3 Credit Hours

The course focuses on the early development of independent ventures as well as those within established organizations. Individual and organizational level issues will be addressed. Entrepreneurial thinking will explore the thought processes that challenge existing norms and pave the way for novel solutions to problems in any field.

Fundamentals of Database

3 Credit Hours

This course will help students learn validate fundamental technology knowledge. Database Administration Fundamentals by covering introductory knowledge and skills including relational databases; core database concepts; relational database concepts; security requirements for databases and the data stored in them.

Information Systems Project Management

3 Credit Hours

The course provides students having current information technology skills with an advanced understanding of project management through an integrated view of the concepts, skills, digital tools, and techniques.

Interpersonal Communication

3 Credit Hours

This course teaches the basics of communication principles and concepts. Topics include: Intercultural issues, conflict management, and communicating in groups and in public.

Introduction to Sociology

3 Credit Hours

This course focuses on the importance of business ethics in today's workplace and the overarching concept of social responsibility. The course provides the student with a conceptual framework with which to analyze ethical decision making from the standpoint of the organization as well as from the perspective of the individual. The course describes management practices that organizations can utilize in order to create and maintain ethical organizational cultures. Finally, the course describes the unique issues and challenges of business ethics in an emerging global economy.

Introduction to Programming

3 Credit Hours

9/4/20

This course is designed for students with no prior programming experience introducing the fundamental concepts of procedural programming by introducing topics like data types, control structures, functions, arrays, files, and the mechanics of running, testing, and debugging.

Introduction to System Analysis and Design

3 Credit Hours

This course will enable students to describe principles, concepts and practice of system analysis and design process explaining the processes of constructing the different types of information systems apply object-oriented concepts to capture a business requirement.

IT Management Strategy

3 Credit Hours

This course focus on organizational issues related to information technology solve the issues strategically using different types of tools. Topics included but not limited to IT strategy formulation and business alignment; IT organization, structure, and governance, implementation and change management, organizational learning and knowledge management, and evaluation of IT impact on the organization.

Management Information System

3 Credit Hours

This course will provide fundamentals of how information and communication technology can be used and utilized in the context of Management and business problem solution.

Managerial Accounting

3 Credit Hours

This course will teach you the fundamentals of managerial accounting including how to navigate the financial and related information managers need to help them make decisions.

Microeconomics

3 Credit Hours

This is a survey course in the theory and application of microeconomics. The course topics focus on microeconomic issues and problems, such as competition and monopoly, pricing, consumer demand, and producer supply. The course develops a theoretical framework for microeconomic analysis and applies this theory to practical domestic and international economic policy problems.

Network Security Management

3 Credit Hours

This course focuses on security and risk management. Topics covered but not limited to Contemporary security issues, Security management processes, Architecture and models, Risk analysis and management, Security planning, and Analysis and safeguards.

Networking Fundamentals

3 Credit Hours

This course will help student discover the fundamentals of networking technology. Topics included but not limited to data communications, telecommunications, infrastructure security, inter/internetworking and the application of networking to multimedia, information storage, and distribution.

Object-Oriented Application Development I

3 Credit Hours

9/4/20

This course provides students with the knowledge of object-oriented programming concepts and application programming interfaces. Topic included but not limited to multi-threading, data structure collections, stream I/O and client interfaces.

Object-Oriented Application Development II

3 Credit Hours

This course covers the object-oriented paradigm associated with programming in a network environment. Topics included but not limited to developing object-oriented applications for the Internet, Intranets, and World Wide Web. The Java programming language will be used to do software development for network environments.

Operating Systems and Application Software

3 Credit Hours

This course is designed in a way to introduce students with key operating systems concepts and configure and administer systems and applications to meet typical organizational information technology support requirements.

Operations Management

3 Credit Hours

Operations Management (OM) is the science and art of ensuring that goods and services are created and delivered successfully to customers. This course focuses on what OM managers do, their functions and challenges. The course will also highlight concepts, trends and issues related to the field such as operations strategy, managing the design process, leveraging the use of technology to deliver product or service, quality assurance and project management.

Organizational Behavior

3 Credit Hours

This course analyzes the elements of organizational behavior. Topics include improving communications, managing conflict, understanding management, motivation, morale, dynamics of change, leadership, stress, ethics, and etiquette.

Project Management

3 Credit Hours

Project Management explores the fundamental knowledge, terminology and processes of effective project management. Topics include project integration management, project scope, time and cost management, human resource management, communication, ethics, and risks involved in managing a project.

Routing and Switching

3 Credit Hours

This major course will prepare students with the knowledge of foundational technologies. This course will also provide students with the ability to perform tasks related to VLSM, routing protocols, switching concepts and configuration, STP, VLANs, and VTP.

Software Development

3 Credit Hours

This course is the fundamentals of developing a software using Java. Upon completion of this course, students will be able to software or update any software.

Software Development for Mobile Devices

3 Credit Hours

9/4/20

This course covers generic principles in design and development for mobile devices which will include practical work doing design and development for one or more contemporary platforms.

Software Quality Control and Testing

3 Credit Hours

In this course, students will be given a basic understanding of a variety of programming techniques and technologies for software quality assurance, such as Quality Tools in Software Development, Software Testing Metrics and Models, and Software Test Document.

Specialized Network Administration

3 Credit Hours

This course will provide students with the knowledge global Internet technology. This course is designed in a way to provide students with the understanding of architectural network designs, network topology requirements, configuration management, fault management, performance management, monitoring resources, Quality of Service (QoS), and security policies.

Statistics I

3 Credit Hours

This course will introduce you to business statistics, or the application of statistics in the workplace. Statistics is a course in the methods for gathering, analyzing, and interpreting data for decision making and predicting future outcome. You will get the basic understanding of descriptive and inferential statistics including the base of Mean and probability distribution.

System Analysis and Design

3 Credit Hours

This course deals with planning the development of information systems by explaining and specifying in detail what a system should do and how the components of the system should be implemented.

System Architecture and Integration

3 Credit Hours

This course will provide students with the knowledge to analyze the system integration requirements and apply appropriate frameworks, methodologies, techniques so that they can manage, administer, acquire, develop, implement, and integrate enterprise systems.

Web Development

3 Credit Hours

This elective course will provide the student with the knowledge of Web development tools and several types of development language. This course will particularly focus on PHP enabling students to create diverse types of the web application or to do system automation.

Wireless and Mobile Communication

3 Credit Hours

This course will help students develop an understanding of the basic and advanced principles of Wireless Communications and Mobile Networks. The issues of wireless communications and mobile networks in physical, link and network layers, the wireless channels, Multi-user communication systems, Mobile networks modeling, design and optimization will be covered in this course.

9/4/20