



**Information Technology Program**  
**Student Learning Outcome Mapping**  
**Course (CLO), Program (PLO), Institutional (ILO)**

**Program Description:** This program is designed for individuals interested in professional careers in the information technology field. The program provides basic knowledge and skills needed for employment or for the pursuit of a higher education in the field of information technology.

Program Learning Outcomes	Institutional Learning Outcomes
<ol style="list-style-type: none"> <li>1. Plan, design, and develop a <b>computer program</b> demonstrating an understanding in the following: process of flowcharting programs, process of pseudocoding and documenting programs, process of writing computer programs using a programming language and applications, and the process of compiling and debugging programs.</li> <li>2. Create various documents and files demonstrating a thorough understanding in using various <b>office applications</b> such as utilizing advance features of word-processing, presentation, spreadsheet, and database applications.</li> <li>3. Propose, plan/design, and create a <b>web-based</b> project to demonstrate an understanding in the process of writing project proposals, process of planning and designing web-based applications, different web supported programming languages, process of uploading and managing web applications, and an understanding in computer networking and protocols.</li> <li>4. Propose, plan/design, and create a computer network to demonstrate an understanding in the process of identifying different hardware, determining hardware compatibility, process of planning and designing computer <b>networks</b>, and the process of <b>troubleshooting</b> networking and other computer related problems.</li> <li>5. Propose, plan/design, and create a <b>database</b> to demonstrate an understanding in the basic principles of database design including the development of data models, establishment of entity relationships, determine appropriate degree of normalization, identify and define special keys, and addressing access and security concerns.</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Critical Thinking and Problem Solving:</b> Analyze and solve problems by using informed judgment based on evidence, sound reasoning, and/or creativity to differentiate facts from opinions and to specify solutions and their consequences.</li> <li>2. <b>Communication:</b> Effectively communicate, both orally and in writing, thoughts in a clear, well-organized manner to persuade, inform and/or convey ideas in academic, work, family and community settings.</li> <li>3. <b>Quantitative and Technological Competence:</b> Use mathematical skills appropriate to our technological society by analyzing and solving problems that are quantitative in nature and use technology for informational, academic, personal and professional needs.</li> <li>4. <b>Diversity:</b> Understand and appreciate differences in cultures and behaviors between the self and others by demonstrating respect, honesty, fairness, and ethical principles in both personal and professional life.</li> <li>5. <b>Civic Responsibility:</b> Apply the principles of civility and morality to situations in the contexts of a healthy family, work, community, environment and world.</li> <li>6. <b>Aesthetics:</b> Apply numerous means of inquiry to experience and appreciate the values of arts and nature.</li> </ol>

### PLO-ILO Mapping

PLOs	ILOs					
	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
PLO 1	X	X	X	X	X	X
PLO 2	X	X	X	X	X	X
PLO 3	X	X	X	X	X	X
PLO 4	X	X	X	X	X	X
PLO 5	X	X	X	X	X	X

## CLO-PLO-ILO Mapping

### IT 105 - PC Office Applications

This course provides software skills used in business related applications. It will provide advanced word processing and spreadsheets and introduce database and presentation software.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Generate extensive and properly formatted Microsoft Word documents that include texts, graphics, tables, mathematical formulas, and other supported objects.		X				X	X	X			X
2. Plan and develop elaborate spreadsheets that utilize complex built-in functions and features of Microsoft Excel.		X				X	X	X			X
3. Plan, design, and develop relational databases using Microsoft Access that are flexible, expandable, and mitigate redundant information.		X			X	X	X	X			X
4. Plan, design, and generate Microsoft Access database queries that select, update, and display information accurately.		X			X	X	X	X			X
5. Create substantial or multiple presentations that integrates texts, graphics, animations, other Microsoft Office files, and various objects supported by Microsoft PowerPoint.		X				X	X	X			X

## IT 110 - Introduction to Programming

This course introduces microcomputer programming, including problem solving procedures, flowcharts and program designs, debugging, and program documentation.

CLO Students will be able to:	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Plan, design, diagram, and generate a flowchart of a possible solution to a given computer-programming assignment.	X						X	X	X			X
2. Identify areas where decision structures are required and plan and develop a flowchart and pseudocode for the decision structures to produce the desired output.	X						X	X	X			X
3. Identify areas where LOOPING structures are required and plan and develop flowchart and pseudocode for the LOOPING structures to produce the desired output.	X						X	X	X			X
4. Plan and develop complete pseudocode based on the solution that consists of all the procedures and components necessary to make the program run and function correctly.	X						X	X	X			X

## IT 115 - Operating Systems and Networks

This course examines the role of Telecommunications, networks, and operating systems in management information systems. Strategies, tools, and techniques for network planning, implementation, management, maintenance, and security will be explored. Different types of networks including local area networks (LANs), wide area networks (WANs), metropolitan area networks (MANs), and enterprise-wide networks will be examined.

CLO Students will be able to:	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Identify and categorize different types of hardware and their functions.				X			X	X	X			
2. Identify different types of cables, capacity and speed, and their functionality/capability.				X			X	X	X			
3. Identify and compare different types of networks.				X			X	X	X			
4. Plan and design a computer network based on a given scenario.				X			X	X	X			X

## IT 120 - Database Management Systems

This course introduces the file management and data structures involved in the design, implementation, and use of a database management system. Topics include file organization, data structures, program development, and security of data in creating, maintaining, and accessing a database.

CLO Students will be able to:	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Identify different types of databases and describe their characteristics.					X		X	X	X			
2. Identify and label different areas or sections of a database.					X		X	X	X			
3. Troubleshoot and correct database problems.					X		X	X	X			
4. Plan, design, and create a relational database.					X		X	X	X			X

## IT 125 - Visual Basic Programming I

This course utilizes Visual Basic to introduce program development for business applications. It will emphasize structured programming principles, including internal and external program documentation. Implementation of objects and event-driven code will also be emphasized.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Design and develop a computer program by identifying and defining all needed variables.	X					X	X	X			X
2. Design and develop a computer program by identifying areas where decision structures are necessary and developing the structures.	X					X	X	X			X
3. Design and develop a computer program by identifying areas where LOOPING structures are necessary and developing the structures.	X					X	X	X			X
4. Plan and design a computer program by identifying areas where other programming statements are necessary and developing the statements.	X					X	X	X			X
5. Develop a syntactically and functionally correct computer program by implementing the selected solution that consists of all the procedures and components necessary to make the program run and function correctly and accurately.	X					X	X	X			X

## IT 200 - Intermediate PC Office Applications

This course provides advanced software skills used in business-related applications. Continuing with the concepts and skills from IT 105, it provides advanced functions and applications in word processing, spreadsheets, and database management systems.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Plan and develop elaborate documents utilizing built-in and custom advanced features of Microsoft Word.		X				X	X	X			X
2. Plan and develop elaborate spreadsheets utilizing built-in and custom advanced functions and features of Microsoft Excel.		X				X	X	X			X
3. Plan, design, and develop relational databases using Microsoft Access that maximizes flexibility and minimizes redundancy.		X			X	X	X	X			X
4. Plan, design, and generate Microsoft Access query objects that create new table objects or selects, deletes, or inserts new records.		X			X	X	X	X			X
5. Plan, design, and generate other database objects utilizing advanced features and functions of Microsoft Access.		X			X	X	X	X			X

## IT 205 - Visual Basic Programming II

This course continues with Visual Basic programming to write programs in a windows environment. It emphasizes programming custom user interfaces with menus and dialogue boxes, and explores object-oriented fundamentals and event-driven programming concepts, including work with object linking and embedding (OLE) and creation of an engine for database access. Other high level programming languages will also be introduced to give students the opportunity to compare Visual Basic to other popular languages.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Plan, design, and develop a syntactically and functionally correct program that utilizes the decision or selection structure (e.g. IF...ELSE statements).	X					X	X	X			X
2. Plan, design, and develop a syntactically and functionally correct program that utilizes the looping, repetition, or iteration structure (e.g. DO WHILE statements).	X					X	X	X			X
3. Plan, design, and develop a syntactically and functionally correct program that utilizes arrays.	X					X	X	X			X
4. Plan, design, and develop a syntactically and functionally correct program that utilizes sort methods.	X					X	X	X			X
5. Plan, design, and develop a syntactically and functionally correct program that connects to, retrieves values from, updates values in, and writes values to an underlying database.	X					X	X	X			X



## IT 210 - MS Applications Using Visual Basic

This course covers how to write custom programs that link with other software. Topics include linking to other Windows applications, manipulating databases, and handling run-time errors.

CLO Students will be able to:	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Plan, design, and develop Word documents utilizing Visual Basic for Applications functions and capabilities.	X	X					X	X	X			X
2. Plan, design, and develop Excel workbooks utilizing Visual Basic for Application functions and capabilities.	X	X					X	X	X			X
3. Plan, design, and develop PowerPoint presentations utilizing Visual Basic for Applications functions and capabilities.	X	X					X	X	X			X
4. Plan, design, and develop Access databases utilizing Visual Basic for Applications functions and capabilities.	X	X					X	X	X			X

## IT 215 - Web Management and Design

This course provides the tools and knowledge necessary to plan, design, and manage a web site. Students will learn web languages such as Hypertext Markup Language (HTML) and Cascading Style Sheet (CSS). Other web utilities will be explored including popular Content Management Systems (CMS).

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Plan, design, and create a website completely by writing HyperText Markup Language (HTML) and Cascading Style Sheet (CSS) codes.			X			X	X	X			X
2. Plan, design, and create custom graphics and images using Adobe Photoshop or other graphics editing software.			X			X	X	X			X
3. Examine and demonstrate an understanding of various web design and networking terminologies and jargons.			X			X	X	X			

## IT 220 – Troubleshooting Microcomputer Systems

This course covers hardware and software troubleshooting. It emphasizes the use of diagnostic utilities, information backup, basic equipment servicing, hardware repairs and upgrades as well as software upgrades, and implementation of new technology.

CLO Students will be able to:	PLO					ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Identify different types of hardware and their functions.				X		X	X	X			
2. Identify, diagnose, and fix computer problems.				X		X	X	X			X
3. Replace computer hardware.				X		X	X	X			
4. Examine and demonstrate an understanding of various troubleshooting terminologies and jargons.				X		X	X	X			

## IT 222 - Instructor Directed Practicum

This course is designed to allow students to learn through active participation in organized services or projects that meet the needs of the community. The course is integrated into and enhances the academic curriculum. Unlike Internship, the Instructor Directed Practicum is entirely supervised by program instructors, therefore, encourages active student involvement in the learning process.

CLO Students will be able to:	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Plan, design, and develop IT related project(s) following the processes, procedures, and guidelines learned in the information technology courses in the areas of Office Applications, Web Design, Database Design and Management, Computer Programming, Computer Networking, and/or Troubleshooting.	X	X	X	X	X		X	X	X	X	X	X

## IT 223 – Internship

This course provides the student with practical training in information technology related fields. With the assistance of the instructor-coordinator, the student is assigned to work under a supervisor in a government department or a private business firm in order to learn through actual work experience.

CLO Students will be able to:	PLO						ILO					
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5		ILO 1	ILO 2	ILO 3	ILO 4	ILO 5	ILO 6
1. Demonstrate proper employee behaviors and work habits.	X	X	X	X	X		X	X	X	X	X	X
2. Perform information technology tasks as assigned by site supervisor.	X	X	X	X	X		X	X	X	X	X	X