

Computer Basics

This program consists of classroom instruction and laboratory classes totaling in 432 hours. Students can acquire knowledge, skills, and techniques necessary for a successful career in the Information Technology (IT) industry.

Course #	Course	Lecture	Lab	Externship	Hours
CPB103	Operating System Fundamentals	40			40
CPB111	Introduction to Internet	40			40
CPB121	Introduction to Database	40			40
CPB122	Introduction to C/C++ Programming	40			40
CPB123	Introduction to Java Programming	40			40
CPB131	Spreadsheets	40			40
CPB132	Advanced Operation System	40			40
CPB133	Introduction to Computer Security and Information Assurance	40			40
CPB201	Advanced Internet	40			40
CPB211	Windows Server	40			40
CPB222	Database Programming	32			32
		432			432

- **CPB103 Operating System Fundamentals** – This course emphasizes basic operating system design concepts, data structures and algorithms, and systems programming basics. It focuses on structure of computer operating system, database process and management and network and security.
- **CPB 111 Introduction to Internet** – Introduction to the Internet. Topics include: address and URL to find your way, linking to a URL, HTML and Web programming, building a Web page, building a home page, client-server techniques -- web page design, blog, bulletin board.
- **CPB 121 Introduction to Database** – This course introduces database design and creation and its emphasis is on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design

and implement normalized database structures by creating simple database tables, queries, reports, and forms.

- **CPB 122 Introduction to C/C++ Programming** – This course introduces students to C++ syntax and various programming techniques such as decisions, loops, arrays, pointers, functions, and file processing. It covers object-oriented concepts such as data abstraction, classes, objects, overloading, and inheritance. Students complete required computer lab assignments.
- **CPB 123 Introduction to Java Programming** – This is a beginning course in the Java programming language. Students will learn object-oriented programming, and will create applets which can be incorporated into HTML documents for the World Wide Web.
- **CPB 131 Spreadsheets** – This course introduces students to Microsoft Excel software, a popular accounting tool. It focuses on planning, creating and editing spreadsheets used in accounting, including the use of functions, macros, graphs and what-if analysis.
- **CPB 132 Advanced Operation System** – This course focuses on file system and management and security of the computer. Topics include management of virtual memory, device, and file. Other topics are process synchronization, process communication, and user process and its protection.
- **CPB 133 Introduction to Computer Security and Information Assurance** – Introduction to key concepts of computer security: risk analysis, basic cryptography, operating system security, network security concepts, and database security concepts. Related policy issues such as privacy and intellectual property.
- **CPB 201 Advanced Internet** – This course introduces programming for the Internet using HTML, JavaScript, and Perl, CGI, and database programming with Perl. Database concepts such as relational versus object oriented database technologies, querying data using SQL. It also covers interfacing databases to the Web, e-commerce, and emerging trends such as XML.
- **CPB 211 Windows Server** – This course introduces Managing and Maintaining Physical and Logical Devices such as managing basic disks and dynamic disks, monitoring server hardware (Tools might include Device Manager, the Hardware Troubleshooting Wizard, and appropriate Control Panel items.), optimizing server disk performance, troubleshooting server hardware devices, and installing and configuring server hardware devices.
- **CPB 221 Database Programming** – Data structures used in computer programming and algorithms. Use of tree structures, arrays, lists, stacks, files, strings, and linked structures. Sorting, searching, hashing, and merging of data. Performance of algorithms using different data structures.

- **CPB 222 Visual Programming** – This course covers how to write programs for the Windows programming environment, including developing an application, tools, forms, the user interface, programming, built-in functions, procedures, arrays, records, testing, and debugging.