GDC Memorial College, Bahal (Bhiwani)

Department of Computer Science

2017-18(Odd)

Learning Objective & Outcomes

B.Sc. 1st Semester

Subject: Computer Fundamentals & MS- Office **Subject Code: 1.1**

Learning Objective

1. Understand the meaning and basic components of a computer system.
2. To learn generation, classification and application of computers.
3. Knowledge of computer equipment, including both hardware and software.
4. To learn input devices and output devices in detail.
5. To learn memory and its types in detail.
6. Knowledge of number system, number arithmetic, ASCII & EBCDEC character set.
7. Knowledge of Software, its types and application package.
8. Use word-processing software (MS-Word), spreadsheet software (MS-Excel) and presentation software (MS-PowerPoint) to solve basic information systems problems.

Learning Outcomes

After the completion of the course, Students will be able to

1. Understand model, components of computer and how it works.
2. Understand the concept of input and output devices of Computers in detail.
3. Understand RAM, ROM and their types in detail.
4. Understand the concepts, structure, types and design of operating Systems.
5. Recognize when to use each of the Microsoft Office programs to create professional and academic documents.
6. Students will have a working knowledge of paragraph formatting, macro and mail-merge in MS-Word.
7. Students will have a working knowledge of basic functions and formulas in MS-Excel.
8. Create presentation by adding slides, applying animations, set times to slides, linking to other file.

GDC Memorial College, Bahal (Bhiwani)

Department of Computer Science

2017-18(Odd Sem)

Learning Objective & Outcomes

B. Sc. 1st Semester

Subject: Computer Architecture **Subject Code: 1.2**

Learning Objective

1. To understand the basics of computer architecture.
2. Learn about the various components of computer architecture.
3. To understand the basic building blocks and computer design in computer architecture.
4. To understand about various aspects of logic gates.
5. Learn about the implementation of combinational circuits and sequential circuits.

Learning Outcomes

1. Learned and evaluated the basics of computer architecture.
2. Conceptually learned about the various components of computer architecture.
3. Thoroughly learned about the basic building blocks and computer design in computer architecture.
4. Logically observed and experienced about various aspects of logic gates.
5. Learned about the implementation of combinational circuits and sequential circuits.

GDC Memorial College, Bahal (Bhiwani)

Department of Computer Science

2017-18(Even)

Learning Objective & Outcomes

B.Sc. 2nd Semester

Subject: Programming in C **Subject Code: 2.1**

Learning Objective

1. To develop programming skills using the fundamentals and basics of C language.
2. To learn problem solving techniques.
3. To study the advantages of user defined data type which provides flexibility for application development
4. To study the basics of pre-processors available with C compiler.
5. To enable effective usage of arrays, structures, functions and pointers.

Learning Outcomes

After the completion of the course, Students will be able to

1. Read, understand and trace the execution of programs written in C language.
2. Write the C code for a given algorithm.
3. Write programs that perform operations using derived data types.
4. Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.
5. Understand Opening/Closing a file, Reading from and writing to a file.

GDC Memorial College, Bahal (Bhiwani)

Department of Computer Science

2017-18(Even)

Learning Objective & Outcomes

B. Sc. 2nd Semester

Subject: Structured systems Analysis and Design **Subject Code: 2.2**

Learning Objective

1. To know about the various steps of software devolvement life cycle.
2. To analyze the structure of a system using structured analysis tools such as DFD, ER diagram, Data dictionary etc.
3. To learn about the importance of feasibility study in development model.
4. To know about the system maintenance and its various types.
5. Understand the concept of Quality assurance goals in SDLC.

Learning Outcomes

After the completion of the course, Students will be able to

1. Know about the various steps of software devolvement life cycle.
2. Analyze the structure of a system using structured analysis tools such as DFD, ER diagram, Data dictionary etc.
3. Learned about the importance of feasibility study in development model.
4. Learned about the system maintenance and its various types.
5. Learned the concept of Quality assurance goals in SDLC.

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Department of Computer Science

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Learning Objective & Outcomes

B. Sc. 3rd Semester

Subject: Data Communication & Networking **Subject Code: 3.1**

Learning Objective

1. Introduce students to the evolution of computer networks and the concepts data communication.
2. Introduce students the general principles of network design and compare the different network topologies.
3. Introduce students to the digital and analogue representations and channels.
4. Describe the mechanism and techniques of encoding.
5. Introduce students to the general principles of circuit and packet switching
6. Introduce students to the wireless Local Area Networks
7. Provide students with in-depth knowledge of data link layer fundamental such as error detection, correction and flow control techniques; multiple access control techniques.

Learning Outcomes

After the completion of the course, Students will be able to

1. understand the fundamental concepts of data communications and networking.
2. understand the concept data communication within the network environment.
3. identify different components and their respective roles in a computer communication system.
4. understand the conflicting issues and resolution techniques in data transmission.
5. apply the knowledge, concepts and terms related to data communication and networking.
8. appreciate usefulness and importance of computer communication in today life and society.

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Department of Computer Science

2017-18(Odd)

Learning Objective & Outcomes

B. Sc. 3rd Semester

Subject: Object Oriented Programming and C++ **Subject Code: 3.2**

Learning Objective

1. To understand how C++ improves C with object-oriented features.
2. To learn how to write inline functions for efficiency and performance.
3. To learn the syntax and semantics of the C++ programming language.
4. To learn how to design C++ classes for code reuse.
5. To learn how to implement copy constructors and class member functions.
6. To understand the concept of data abstraction and encapsulation.
7. To learn how to overload functions and operators in C++.

Learning Outcomes

After the completion of the course, Students will be able to

1. Understand the features of C++ supporting object oriented programming
2. Understand the relative merits of C++ as an object oriented programming language
3. Understand how to produce object-oriented software using C++
4. Understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism
5. Understand advanced features of C++ specifically stream I/O, templates and operator overloading

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Department of Computer Science

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Learning Objective & Outcomes

B.Sc. 4th Semester

Subject: Data Structure **Subject Code: 4.1**

Learning Objective

1. To impart the basic concepts of data structures and algorithms.
2. To understand concepts about searching and sorting techniques.
3. To understand the abstract data types stacks, queues, lists, trees and graphs.
4. To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures.
5. To understand prefix, infix, and postfix expression formats.
6. To use stacks to evaluate postfix expressions, convert expressions from infix to postfix.

Learning Outcomes

After the completion of the course, Students will be able to

1. Student will be able to analyze algorithms and algorithm correctness.
2. Student will be introduced to different searching and sorting techniques.
3. Ability to describe stack, queue and linked list operation.
4. Student will be able to use stacks for evaluating postfix expressions, convert expressions from infix to postfix.
5. Student will have knowledge of tree and graphs concepts.

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Learning Objective & Outcomes

B. Sc. 4th Semester

Subject : Operating System **Subject Code : 4.2**

Learning Objective

1. To Classify Linux kernel mode with user mode and differentiate Kernel structuring methods.
2. To Describe Process management and Thread management strategies.
3. To Demonstrate internal file system structure with device drivers and file operations using system calls.
4. To Summarize the principles of Virtual memory as applied to paging & caching techniques.
5. To Contruct shell scripts with different programming syntax 6. To prepare for various OS case studies.

Learning Outcomes

After the completion of the course, Students will be able to

1. Gain in depth knowledge about the structures of the operating system, different types of operating system and functions performed by modern operating system.
2. Identify and apply knowledge of various software and hardware synchronization tools for solving critical section problem in concurrent processes.
3. Understand and apply process management and memory management concepts to solve various hardware and software problems.
4. Identify various system protection and security mechanisms in order to design efficient software system by using various access control techniques.
5. Understand the concepts of deadlock in operating systems and employ the deadlock avoidance techniques in multiprogramming system.
6. Understand the various operating systems like UNIX and LINUX and also analyze and design various real time operating systems to automate real time problems in multidisciplinary environments.

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Learning Objective & Outcomes

B. Sc. 5th Semester

Subject : Database Management System **Subject Code : 5.1**

Learning Objective

1. Learn and practice data modeling using the entity-relationship and developing database designs.
2. Understand the use of Structured Query Language (SQL) and learn SQL syntax.
3. Apply normalization techniques to normalize the database
4. Understand the needs of database processing and learn techniques for controlling the consequences of concurrent data access.
5. Understand the needs of Database Design

Learning Outcomes

After the completion of the course, Students will be able to

1. To describe data models and schemas in DBMS
2. To understand the features of database management systems and Relational database.
3. To use SQL- the standard language of relational databases.
4. To understand the functional dependencies and design of the database.
5. To understand the concept of Transaction and Query processing.

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Department of Computer Science

2017-18(Odd)

Learning Objective & Outcomes

B.Sc. 5th Semester

Subject: Introduction to Internet & Web Technologies **Subject Code: 5.2**

Learning Objective

1. Navigate information on the Internet and search for, identify, download, decompress and view useful information using web browsers, search engines, FTP, gopher, telnet and other software.
2. Communicate with others asynchronously using electronic mail, attachments, newsgroups and list servers, and in real time using chat, talk, video conferencing and other software.
3. Insert a graphic within a web page.
4. Create a table, link within a web page.
5. Insert heading levels within a web page.
6. Insert ordered and unordered lists within a web page.
7. Use cascading style sheets.
8. Create a web page.

Learning Outcomes

After the completion of the course, Students will be able to

1. Describe the basic concepts for network implementation
2. Learn the basic working scheme of the Internet and World Wide Web
3. Understand fundamental tools and technologies for web design.
4. Specify design rules in constructing web pages and sites.
5. Create a table, link, list (ordered and unordered), CSS within a web page.
6. Create a web page having form tools.

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Department of Computer Science

2017-18(Even)

Learning Objective & Outcomes

B. Sc. 6th Semester

Subject : Visual Basic **Subject Code : 6.1**

Learning Objective

The course is designed to guide the beginning programmer in developing applications using the Java and Visual Basic.Net (VB.NET) programming languages. The ability to program using object-oriented tools is beginning to be treated as fundamental knowledge of the average MIS major. Students will be introduced to object-oriented programming concepts along with the Java and VB.NET syntax to implement them. Upon the completion of this course, students will know how to create and modify simple Java and VB.NET language applications, and will have the tools to create more complex examples. Students will also have a fundamental knowledge of object-oriented concepts

Learning Outcomes

After the completion of the course, Students will be able to

1. understand the programming algorithm, process, and structure
2. understand and identify the fundamental concepts of object-oriented programming
3. understand and use the concepts of objects, primitive value, message, method, selection control structure, repetition control structures, object reference, container, and method parameter
4. know how to write and run a complete program
5. understand and identify the importance of object-oriented programming for the Internet based electronic commerce
6. understand the impact of Java and VB.NET on business

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2017-18(Even)

Learning Objective & Outcomes

B.Sc. 6th Semester

Subject: Software Engineering **Subject Code: 6.2**

Learning Objective

1. Knowledge of basic software engineering methods and practices, and their appropriate application.
2. A general understanding of software process models such as the waterfall and evolutionary models.
3. An understanding of the role of project management including planning, scheduling, risk management, etc.
4. An understanding of software requirements and the SRS document.
5. An understanding of software testing approaches such as unit testing and integration testing.
6. An understanding on quality control and how to ensure good quality software.

Learning Outcomes

After the completion of the course, Students will be able to

1. Students will be able to model the structure and behavior a software system using E-R diagrams.
2. Students will apply software testing and quality assurance techniques at the module level, and understand these techniques at the system and organization level.
3. Students will be able to understand common lifecycle processes including waterfall (linear), prototyping, spiral approaches.
4. Student will have a working knowledge of technical documentations and make presentations on various aspects of a software development project, including the technical aspects (architecture, design, quality assurance) as well as the managerial aspects (planning, scheduling, and delivery).
5. Students will introduced to design a solution to a given problem using one or more design patterns and implement the design in a programming language.