

## **COMPUTER DEPARTMENT**

### **COURSE OUTCOMES (CO)**

#### **COURSE 1.1- Microsoft Word**

- CO1. Performing basic editing functions, formatting text, copy and moving objects and text.
- CO2. Learning the formatting skills on paragraphs, tables, lists, and pages.
- CO3. Knowledge on navigating the Word Ribbon Interface.
- CO4. Understanding the process of inserting graphics, pictures, and table of contents, Drop Cap.
- CO5. Learning the utilities of Auto text, AutoCorrect, Footnotes and Bookmark.
- CO6. Demonstrate the mechanics and uses of Word tables to organize and present data.
- CO7. Working knowledge of using Word's themes and clip art to create a variety of visual effects.
- CO8. Word's advanced formatting techniques and presentation styles.
- CO9. Applicable knowledge and uses of accepted business style formatting conventions.
- CO10. Creating and producing a mail merge

#### **COURSE 1.2- Microsoft Excel**

- CO1. Demonstrating the basic mechanics and navigation of an Excel spreadsheet.
- CO2. Formatting techniques and presentation styles.
- CO3. Learning the use and utility of functions and formulas on excel spreadsheet.
- CO4. Working knowledge of organizing and displaying large amounts and complex data.
- CO5. Using clip art to enhance ideas and information in Excel worksheets.
- CO6. Understanding the need and use of using Excel templates.
- CO7. Securing information in an Excel workbook.
- CO8. Manipulate data using data names and ranges, filters and sort, and validation lists
- CO9. Learning formulas, creating charts and graphs that can easily explain or simplify complex information or data.
- CO10. Analyzing data using Pivot Tables and Pivot Charts.

### **COURSE 1.3- Microsoft PowerPoint**

- CO1. Learning to modify presentation themes.
- CO2. Analyzing formatting techniques and presentation styles
- CO3. Integrating information from other Microsoft programs into a PowerPoint presentation.
- CO4. Working with text, themes, and styles.
- CO5. Creating charts, graphs, and tables.
- CO6. Inserting media clips and animation
- CO7. Learning use macros, customize, package and publish your presentation
- CO8. Creating and manipulating simple slide shows with outlines and notes.
- CO9. Create slide presentations that include text, graphics, animation, and transitions.
- CO10. Use design layouts and templates for presentations.
- CO11. Add special effects to slide transitions to spice up your presentations
- CO12. Work with Master Slides to make editing your presentation easy
- CO13. Set up slide shows and rehearse timings for your slides
- CO14. Collaborate using social media and PowerPoint together

### **COURSE 1.4 - Microsoft Access**

- CO1. Examine database concepts and explore the Microsoft Office Access environment.
- CO2. Designing and building database with related tables in datasheet view or by using the table wizard
- CO3. Managing data in tables
- CO4. Develop simple, multiple-criteria, calculated fields, parameter, totaling and action-based queries
- CO5. Designing Forms Build complex forms in design view using different form elements. Build forms of the type: Main/Sub form and query-based
- CO6. Learning the advanced form design features such as use of the toolbox, command buttons, option groups, combo-boxes, lines or rectangles, or designing a form from scratch in Design view.
- CO7. Generating Reports and creating report based application.
- CO8. Import and export data.
- CO9. Sorting, Retrieving and Analyzing Data

### **COURSE 1.5 - Microsoft Publisher: Desktop Publishing Programme**

- CO1. Looking at the Publisher Interface, its layout, commands and creating a basic Publication
- CO2. Learning to import text and organize the layout of text boxes and placeholders within a publication and other related features.
- CO3. Formatting text and paragraphs as well as applying Microsoft's supplied styles and themes to enhance the overall look of your publication.
- CO4. Introducing tools and features to edit/review your text as well as using tables for a more organized layout
- CO5. Adding pictures and images to your Publication and using various tools to format and fine tune their appearance.
- CO6. Using Publisher's tools to check on your design, preview, print and send by email

### **COURSE 1.6 - Windows Operating System (Windows 8.1 and Windows 10)**

- CO1. Starting computer system and acquiring confidence in using computer techniques available to users.
- CO2. Recognizing the basic components of computers and terminology.
- CO3. Understanding data, information and file management.
- CO4. Creating documents using Word processor, Spreadsheet & Presentation Software.
- CO5. Understanding computer networks and Internet
- CO6. Learning to use e-Governance applications
- CO7. Using computer to improve existing skills and learn new skills.
- CO8. Overviewing Windows 10.
- CO9. Understanding Internet Applications, E-mail Account & Its Functions, utility of Search Engine and Surfing Web Pages

## **B.Ed Semester IV**

### **EPC III: Critical Understanding of ICT**

#### **UNIT –I: Digital Technology and Socio-Economic Context**

- CO1. Concepts of information and communication technology; Universal access vs Digital Divide - issues and initiatives.
- CO2. Challenges of Integration of ICT in School; Aims and objectives of National Policy on Information and Communication Technology (ICT) in School Education in India; IT@ School Project.
- CO3. Components and Objectives of National Mission on Education through ICT (NMEICT), Spoken Tutorials, Gyan Darshan, Gyanvani, Sakshat Portal, e Gyan Kosh; Virtual laboratory and Haptic technology.

#### **UNIT- II: MS Office**

- CO1. Learning and Understanding MS Word, MS Power Point, MS Excel, MS Access and MS Publishing.

#### **UNIT –III: Internet and Educational Resources**

- CO1. Introduction to Internet.
- CO2. E-mail, Search Engines, Info-Savvy Skills; Digital Age Skills, safe surfing mode
- CO3. Internet resources for different disciplines like natural sciences, social sciences, Humanities and Mathematics
- CO4. General Introduction to E-learning, Mobile-learning, distance learning, On-line learning;
- CO5. Virtual University, Wikipedia, Massive Open Online Courses (MOOCs);
- CO6. Social networking.

#### **UNIT –IV: Techno-Pedagogic Skills**

- CO1. Understanding Media Message Compatibility
- CO2. Analyzing Contiguity of Various Message Forms
- CO3. Learning Message Credibility & Media Fidelity
- CO4. Learning concepts of Message Currency, Communication Speed & Control
- CO5. Describing Sender-Message-Medium-Receiver Correspondence

## **Engagement with Field/Practicum**

- CO1. Installation of Operating systems, Windows, installation of essential Software and Utilities;
- CO2. Projects that may involve the hardware like LCD Projector, digital camera, camcorder, scanner, Printer, interactive white board and software like word processors (MS Word/Libre Office), spread sheet and Slide Presentation (PPT/impress); and/or Creating and using Blogs and Google Groups, Google Docs.
- CO3. Develop a report on preparing a lesson plan on any topic from your methods while using internet resources. They report should mention the details of navigating, searching, selecting, saving and evaluating the authenticity of the material and also mention how it adds or justify the facts, figures(data), graphics, explanation and logic of the topic.
- CO4. Teaching with Multimedia e-content developed by student.  
Mode of Transaction -LCD Projection, Demonstration, Lecture, Web Surfing, Designing WBI

## **Enrichment Programmes**

### **I. Advanced Computer Course**

#### **COURSE 1.1- Flow Chart**

- CO1. Learning the simple control systems consist of software, computer or micro-controller, interface, input sensors and output devices;
- CO2. Creating, Understanding and Analyzing Flowline (Arrowhead) with the help of Terminal, Process, Decision, Input/Output, Annotation (Comment), Predefined Process, On-page Connector, Off-page Connector
- CO3. Understanding the sensing circuits and output devices listed in the specification can be interfaced to a computer or microcontroller.
- CO4. Using the following operations in flowcharts: inputting data, outputting data, counting, branching, and testing data, simple arithmetic operations.
- CO5. Designing and analyzing flowcharts for simple programs to make output devices: perform a sequence of actions, respond to information from sensors, and make use of feedback.
- CO6. Describing a range of applications of software-based control systems;

- CO7. Appreciate the social, economic, ethical and cultural implication of this technology for improving the quality of life, employment and leisure.

### **COURSE 1.2- C / C++ Programming Language**

- CO1. Understanding the basic terminology used in computer programming
- CO2. Writing, compiling and debugging programs in C language
- CO2. Using different data types in a computer program
- CO3. Designing programs involving decision structures, loops and functions, arrays and strings.
- CO4. Explaining the difference between call by value and call by reference
- CO5. Understanding the dynamics of memory by the use of pointers.
- CO6. Using different data structures and create/update basic data files.

### **COURSE 1.3 -JAVA**

- CO1. Design, implement, test, debug, and document programs that use basic data types and computation, simple I/O, conditional and iterative structures, and functions.
- CO2. Apply the techniques of structured (functional) decomposition to break a program into smaller pieces.
- CO3. Describe and use the mechanics of parameter passing.
- CO4. Discuss and use primitive data types and built-in data structures.
- CO5. Write clear and comprehensive program documentation.
- CO6. Write programs that use data structures, including arrays, strings, linked lists, stacks, queues, sets, and maps.
- CO7. Design, implement, test, debug, and document recursive functions.
- CO8. Design, implement, test, debug, and document GUI, event-driven programs.
- CO9. Design, implement, test, debug, and document in object-oriented programming language

## II. Web Designing

### COURSE 1.1- HTML

- CO1. Studying the nature of HTML
- CO2. Design and create a website to meet the needs of a client using text; fonts; color; images; tables; hyperlinks; language and terminology
- CO3. Designing, creating and applying an external style sheet to a multiple page web site.
- CO4. Using Website design and production software with the help of Language and terminology, Panels, Tools and features like Tags, Head, Body, Headings, Lists, Blocks ,Layout ,Forms , frames and Colors.
- CO5. Be able to produce a media rich Website to a specification

### COURSE 1.3- CSS

- CO1. Use HTML to define the structure of content.
- CO2. Use Cascading Style Sheets (CSS) to format Web pages.
- CO3. Describe the evolution of style sheets from print media to the Web.
- CO4. Use color on Web pages.
- CO5. Create style sheets that configure common color and text properties.
- CO6. Demonstrate the four different ways of applying CSS styles.
- CO7. Create XHTML tag selectors.
- CO8. Using links, lists and tables on Web pages
- CO9. Create CSS class and id selectors.
- CO10. Validate CSS

### **COURSE 1.4- JavaScript**

- CO1. Explain separation of concerns and identify the three layers of the web.
- CO2. Use operators, variables, arrays, control structures, functions and objects in JavaScript.
- CO3. Identify popular JavaScript Libraries.
- CO4. Understanding Events in JavaScript
- CO5. Use regular expressions for form validation.

### **COURSE 1.5- PHP**

- CO1. Introducing and explaining the basic syntax of PHP
- CO2. Capturing of Form Data
- CO3. Defining functions and executing PHP Code.



## **PROGRAM OUTCOMES (PO)**

- PO1. Enabling students to adapt to the rapidly changing technology with strong fundamentals.
- PO2. Basic knowledge in hardware/software methods and tools for solving real-life and practical problems with an orientation to lifelong learning.
- PO3. Impart value based technical education and entrepreneurial skills to the graduates through state-of-art infrastructure.
- PO4. Educating students towards the design and development of applications and projects with advanced programming skills.
- PO5. Learn to create error free documents like lecture scripts, notes, assignment, applications, projects, letters, question papers, books, e-books, and various educational materials.
- PO6. PowerPoint presentations helps to speak, read, write and listen clearly and efficiently and improve group work and communication skills.
- PO7. Understanding and demonstrating the use of various modern technical tools like table styles, shapes, charts, graphs, data tools and solve basic and logical-mathematical problems and statistics in excel.
- PO8. Making use of applications in various business operations, such as goal setting, budgeting process, and planning, team management, accounts management, income, and expenses calculation, product and service valuation and management of client's data etc.
- PO9. Learning Programming languages help students to learn the basic inner workings of computers apart from the acquiring Engineering Knowledge.
- PO10. Project Management skills are recognized through designing and creating webpages and web applications.
- PO11. Sound knowledge base and skill sets to develop and expand professional careers in fields related Information and Communication Technology.
- PO12. An ability to work in multidisciplinary teams in small and large scale projects by utilizing technological tools and emerging technologies with skills to communicate effectively.
- PO13. Knowledge in data management systems, like data acquisition, report generation so as to enable students in solving problems using the techniques of data analytics.
- PO14. Help students in Critical / Computational Thinking through different computer program coding in C, C++, Java, HTML, CSS, JAVASCRIPT and PHP .Apply Computational Thinking to communicate thoughts in a structured and logical way for easier problem solving.
- PO15. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

## **PROGRAM SPECIFIC OUTCOMES (PSO)**

- PSO1. An ability to practically use hardware and software and design and develop projects in emerging technology environments.
- PSO2. Knowledge of data management system that helps in storing information for reference, reporting, and analysis. Database Management System helps in analyzing large amounts of information, and manage related data more efficiently.
- PSO3. PowerPoint Presentations in classroom are conducted, to boost the confidence of the students and help them in their career by encouraging their communication (written, oral, and listening), presentation skills and team work.
- PSO4. Ability to understand the structure and development methodologies of software systems. Possess professional skills and knowledge of software design process. Familiarity and practical competence with a broad range of programming language and open source platforms.
- PSO5. Ability to interpret, understand and demonstrate understanding of the fundamental concepts and principles and working of the hardware and software aspects of computer systems.
- PSO6. Be acquainted with the contemporary issues, latest trends in technological development and thereby innovate new ideas and solutions to existing problems. This results in the annual ICT magazine 'Connect' with contribution of papers, articles, quizzes, puzzles etc. from the students.
- PSO7. The ability to employ modern computer languages, environments, and platforms in creating innovative career paths to be an entrepreneur, and a zest for higher studies.
- PSO8. The Computer Department organized an Information Security Awareness Workshop on 'Cyber Security and Cyber Crime: Counter Measures on December 16, 2014. This workshop helped students to augment their Communication and Collaboration skills, Critical Thinking and Problem Solving capabilities, Creativity and Imagination and latest technical issues and initiatives.
- PSO9. Group discussions on latest trending topics on 'Information and Communication Technology' to keep all the students technologically updated, increase their ICT knowledge and interest, develop their extempore, public speaking, group discussion and conversation skills, and building their confidence.

- PSO10. Project-based learning (PBL) gives students the opportunity to explore problems and challenges that have real-world applications, increasing the possibility of long-term retention of skills and concepts.
- PSO11. Offline and Online projects on Computer Programming, Web Designing and Application Development help the students in the long run to prepare them for development as well as research work.
- PSO12. Familiarity and practical proficiency with a broad area of programming concepts and provide new ideas and innovations through different Enrichment Courses.
- PSO13. Think critically, follow innovations and developments in science and technology, demonstrate personal and organizational entrepreneurship and engage in life-long learning in various subjects.
- PSO14. Use of various digital technologies for creating resources and providing learning experiences for all types of learners. Moreover use various ICTs for project based/problem based constructivist learning.