

**Syllabi and Scheme of Examinations  
for  
Multidisciplinary Courses for Under Graduate Programs  
(Single Major / Multidisciplinary Programs) of Computer  
Science  
(Based on Curriculum and Credit Framework for UG Programs under NEP)**



**With Effect from the Session 2024-25**

**MAHARSHI DAYANAND UNIVERSITY  
ROHTAK (HARYANA)**

## SYLLABI AND SCHEME OF EXAMINATIONS FOR MULTIDISCIPLINARY COURSES FOR UNDER GRADUATE (SINGLE MAJOR/MULTIDISCIPLINARY PROGRAMS/ SINGLE MAJOR PROGRAM AFTER 2nd SEMESTER OF MULTIDISCIPLINARY PROGRAM

| Multidisciplinary Course (MDC) | TYPE OF PROGRAM      |                                                                                                  |                           |              | Credits Distribution |   |   | Total Credits | Workload |   |   | Total Workload | Marks  |    |           |      |             |
|--------------------------------|----------------------|--------------------------------------------------------------------------------------------------|---------------------------|--------------|----------------------|---|---|---------------|----------|---|---|----------------|--------|----|-----------|------|-------------|
|                                | SINGLE MAJOR PROGRAM | MULTIDISCIPLINARY PROGRAM / SINGLE MAJOR PROGRAM AFTER 2nd SEMESTER OF MULTIDISCIPLINARY PROGRAM | Nomenclature of Course    | Course Code  | L                    | T | P |               | L        | T | P |                | Theory |    | Practical |      | Total Marks |
|                                | SEMESTER             | SEMESTER                                                                                         |                           |              |                      |   |   |               |          |   |   |                |        |    |           |      |             |
| MDC 1 @ 3 credits              | 1                    | 1                                                                                                | Fundamentals of Computing | 24CSCX01MD01 | 3                    | 0 | 0 | 3             | 3        | 0 | 0 | 3              | 25     | 50 | ----      | ---- | 75          |
| MDC 2 @ 3 credits              | 2                    | 2                                                                                                | Office Automation         | 24CSCX02MD01 | 2                    | 0 | 1 | 3             | 2        | 0 | 2 | 4              | 15     | 35 | 25        |      | 75          |

**L: Lecture; T: Tutorial; P: Practical**

**Note:**

1. The Syllabi and Scheme of Examinations (SOE) for Minor (Vocational) Courses for UG Semester 7 and Semester 8 will be same as applicable for Vocational Course in Post Graduate semester 1 and semester 2 respectively.
2. Course coding of Minor courses for Single Major Programs will be applicable for Multidisciplinary Programs/ Multidisciplinary Programs after 2nd semester irrespective of their offering in any semester.
3. The student who select any Minor Course (MIC) of any discipline in first semester should study the Minor courses (MIC) in the same discipline in the subsequent semesters. However, while exercising the option for choosing Minor Vocational Course MIC (VOC), the student may opt the discipline either related to the discipline of Minor Course or the discipline of Major Course or any other discipline as per his/her choice.

# Syllabi for Multidisciplinary Courses for Under Graduate Programs (Single Major / Multidisciplinary Programs) of Computer Science

**Semester: I**  
**Session: 2024-25**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                             |                 |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------|--------------|
| Name of the Program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Multidisciplinary Courses<br>(Single Major /<br>Multidisciplinary Programs) | Program Code    | -----        |
| Name of the Course                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Fundamentals of Computing                                                   | Course Code     | 24CSCX01MD01 |
| Hours/Week                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3+0+0                                                                       | Credits (L:T:P) | 3:0:0        |
| <b>Note:</b> The Formative Assessment Criteria for this Course is as Follows:                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                             |                 |              |
| - Written test (2X10)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                             |                 | 20           |
| - Class Assignment/ Case study/Mini project (2X10)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                             |                 | 20           |
| - Book Review/Essay/ Seminar (1 X 10)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                             |                 | 10           |
| - Quizzes/Group Discussion/ Debate (2X10)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                             |                 | 20           |
| - Attendance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                             |                 | 05           |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                             |                 | <b>75</b>    |
| <b>Course Objectives:</b><br>The main objective is to introduce basics of Computers and its working in a simple language to all undergraduate students, regardless of their specialization. It will help them to pursue specialized programs leading to technical and professional careers and certifications in the industry. The focus of the subject is on introducing skills relating to computer fundamentals, computer applications, problem solving, computer networking, data communication, programming, Internet basics etc. |                                                                             |                 |              |
| <b>Course Outcomes:</b><br><br>By the end of the course the students will be able to:<br>CO1: Learn the fundamental concepts of Computers and understand various input and output devices.<br>CO2: Understand the concept of memory and its types.<br>CO3: Learn about the role of operating system and its functions.<br>CO4. Understand the concept of data communication, networking and Internet.<br>CO5:Know about E-Mail and the concepts related to Business data processing.                                                   |                                                                             |                 |              |
| <b>Unit – I</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                             |                 |              |
| <b>Introduction:</b> Historical evolution of computing, Computers and their classification; Working of a computer; Block Diagram and its components; Characteristics, Benefits and Limitations of Computers. Human being Vs. Computer. Computer Codes and their types.                                                                                                                                                                                                                                                                 |                                                                             |                 |              |
| <b>Input and Output Devices:</b> Introduction to I/O concepts, Hardcopy and Softcopy Devices; Keyboards, mouse, joysticks, trackballs, digitizer, voice-recognition, optical-recognition, scanners, terminals, point-of-sale terminals, machine-vision systems, Printer & its types.                                                                                                                                                                                                                                                   |                                                                             |                 |              |
| <b>Unit – II</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                             |                 |              |
| <b>Memory &amp;Mass Storage Devices:</b> Characteristics of memory systems, types of memory, RAM, ROM, magnetic disks-floppy disk, hard-disk; optical disks; Magnetic tapes; Concepts of Virtual and Cache memory                                                                                                                                                                                                                                                                                                                      |                                                                             |                 |              |
| <b>Software and Operating System Concepts:</b> Introduction, Software and its types, Language translators, Operating System and its Functions, Measuring System Performance, Assemblers, Compilers and Interpreters. Batch Processing, Multiprogramming, Multi-tasking, Multiprocessing, Time Sharing, DOS, Windows, Unix/Linux.                                                                                                                                                                                                       |                                                                             |                 |              |
| <b>Unit – III</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                             |                 |              |
| <b>Problem Solving and Programming Languages:</b> Concept of problem solving, Problem definition, Programming Languages and their classification, Problem solving with computer, Concept of a programming                                                                                                                                                                                                                                                                                                                              |                                                                             |                 |              |

and design techniques, computer program lifecycle and program development process.

**Data Communication:** Introduction, forms of data transmission, modem and its types, communication channels, data transmission modes. **Computer Networks:** Introduction to Computer Network, types of Computer Network, Network Topologies, Network Protocols, Applications of Computer Networks.

#### **Unit – IV**

**Internet:** Introduction to Internet, WWW, Web Browsers, Evolution of Internet, Applications of Internet, Connecting to Internet, Internet tools. **Electronic Mail:** Introduction to E-mail, Setting Up an E-mail Account, Composing and Sending E-mails, E-mail Etiquette and Best Practices, Managing E-mails, Security and Privacy, Advanced E-mail Features, E-mail in Professional Settings, Troubleshooting Common E-mail Issues.

**Computer Applications:** Computer applications in Artificial Intelligence, Banking, Education, Marketing, Desktop publishing, CAD/CAM, Project Management, Military, Sports, Research & Development.

#### **Suggested Readings:**

1. Gill Nasib Singh: Handbook of Computer Fundamentals, Khanna Book Publishing Company (Pvt.) Limited, New Delhi.
2. Donald Sanders: Computers Today, McGraw-Hill Publishers.
3. Davis: Introduction to Computers, McGraw-Hill Publishers.
4. V. Rajaraman: Fundamental of Computers, Prentice-Hall India Ltd., New Delhi.
5. Gill Nasib Singh: Computing Fundamentals and Programming in C, Khanna Book Publishing Company (Private) Limited, New Delhi.
6. Peter Norton: Introduction to Computers, McGraw-Hill Education
7. E. Balagurusamy, Fundamentals of Computers, McGraw-Hill Education
8. P. K. Sinha and Priti Sinha: Computer Fundamentals, BPB Publications.
9. Any other book covering the contents of the subject.

**Note:** Latest and additional good books may be suggested and added from time to time.

**Semester: II**  
**Session: 2024-25**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                             |                 |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------|--------------|
| Name of the Program                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Multidisciplinary Courses<br>(Single Major /<br>Multidisciplinary Programs) | Program Code    | -----        |
| Name of the Course                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Office Automation                                                           | Course Code     | 24CSCX02MD01 |
| Hours/Week                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2+0+2                                                                       | Credits (L:T:P) | 2:0:1        |
| <b>Note:</b> The Formative Assessment Criteria for this Course is as Follows:                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                             |                 |              |
| - Written test (2X10)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                             |                 | 20           |
| - Lab Work (Practical File)/ Field Work (Report)/ Portfolio                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                             |                 | 20           |
| - Class Assignment/ Case study/Mini project (2X10)                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                             |                 | 20           |
| - Seminar/ Presentation (1 X 10)                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                             |                 | 10           |
| - Attendance                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                             |                 | 05           |
| <b>Total</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                             |                 | 75           |
| <b>Course Objectives:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                             |                 |              |
| Office automation course enables students in crafting professional word documents, excel spread sheets, power point presentations using the Microsoft suite of office tools. To familiarize the students in preparation of documents and presentations with office automation tools.                                                                                                                                                                                           |                                                                             |                 |              |
| <b>Course Outcomes:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                             |                 |              |
| By the end of the course the students will be able to:                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                             |                 |              |
| CO1: Understand the fundamental concepts of window operating system.                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                             |                 |              |
| CO2: Understand and use of various functions of windows.                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                             |                 |              |
| CO3: Use word processing tool for text processing.                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                             |                 |              |
| CO4: Learn Data analysis tool for effective data analysis.                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                             |                 |              |
| CO5: Learn about Presentation tool for creating presentations.                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                             |                 |              |
| <b>Unit – I</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                             |                 |              |
| <b>MS-Windows:</b> Operating system-Definition & functions, basics of Windows. Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel – display properties, adding and removing software and hardware, setting date and time, screensaver and appearance. Using windows accessories.             |                                                                             |                 |              |
| <b>Unit – II</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                             |                 |              |
| <b>Documentation Using MS-Word:</b> Introduction to word processing interface, Toolbars Creating & Editing Document, Formatting Document, Finding and replacing text, Format painter, Header and footer, Drop cap, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Previewing and printing document, Advance Features of MS-Word-Mail Merge, Macros and Tables                                                              |                                                                             |                 |              |
| <b>Unit – III</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                             |                 |              |
| <b>Electronic Spread Sheet using MS-Excel:</b> Introduction to MS-Excel, Cell, cell address, Creating & Editing Worksheet, Formatting and Essential Operations, Moving and copying data in excel, Header and footer, Formulas and Functions, Charts, Cell referencing, Page setup, Macros, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel-Sorting, Filtering, Validation, What if analysis with Goal Seek. |                                                                             |                 |              |
| <b>Unit – IV</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                             |                 |              |
| <b>Presentation using MS-PowerPoint:</b> Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.                                                                                                                                                              |                                                                             |                 |              |

**Suggested Readings:**

1. Microsoft Office – Complete Reference – BPB Publication
2. Russell A. Stultz: Learn Microsoft Office — BPB Publication
3. Courter, G Marquis: Microsoft Office 2000, Professional Edition. BPB.
4. Koers, D: Microsoft Office XP Fast and Easy. PHI.
5. Nelson, S L and Kelly, J: Office XP: The Complete Reference. Tata McGraw- Hill.
6. Any other book covering the contents of the subject.

**Note:** Latest and additional good books may be suggested and added from time to time.

**List of Programs/Lab Assignments**

1. Create a document in MS-Word introducing the word processing interface.
2. Write a step-by-step guide on how to find and replace text in MS-Word. Include examples and screenshots.
3. Create a document in MS-Word showcasing the use of Format Painter, Header and Footer, Drop Cap, AutoText, and Autocorrect features.
4. Write a tutorial document in MS-Word demonstrating the use of the Spelling and Grammar Tool, Document Dictionary, and Page Formatting options.
5. Create a document in MS-Word with bookmarks and demonstrate how to navigate through them. Include a section on previewing and printing documents.
6. Write a guide on using Mail Merge in MS-Word to create personalized letters. Include steps for merging data from an Excel sheet.
7. Create a document in MS-Word with macros to automate repetitive tasks. Explain how to record and execute macros.
8. Design a table in MS-Word to organize data and demonstrate sorting, filtering, and validation functionalities.
9. Create a budget spreadsheet in MS-Excel, including essential operations like creating & editing worksheets, formatting cells, and formulas.
10. Design a worksheet in MS-Excel with a header and footer. Demonstrate how to customize headers and footers for printing.
11. Create a spreadsheet in MS-Excel with various formulas and functions. Include examples of basic arithmetic operations and statistical functions.
12. Develop a chart in MS-Excel to visualize data. Include bar, line, and pie charts, and explain when to use each type.
13. Create a PowerPoint presentation with slides showcasing different slide manipulation features like transitions, animations, and organizational charts.
14. Design a presentation in MS-PowerPoint with Excel charts and WordArt. Demonstrate how to import and manipulate these objects.
15. Create a PowerPoint presentation with animated pictures and sound effects. Include slides with recorded sound effects and animated pictures accessed through objects.

**Any other programs/lab problems assigned by the teachers.**

