# B23-CC-C5
# Web Technologies

Max. Marks:100
**Min. Pass Marks:**40

**Internal Assessment Marks** :30[Theory(20) + Practical(10)]
**External End TermExamMarks:**70[Theory(50)+Practical(20)]

**Time:** Theory(3Hours),Practical(3Hours)

**Credit**:4

***Course Objectives:***

1. Learn the basics of web development.
2. Understand different types of web pages and web sites.
3. Implement HTML and CSS for web page designing.
4. Understand the design of web crawlers and search engines.
5. To implement the programs based on variousconceptsof web development.

**Examiner Note:** Examiner will set a total of NINE questions. Out of which FIRST question will be compulsory and the remaining EIGHT questions will be set from four units selecting two questions from each unit. All questions will carry equal marks. First question will comprise of short answer type questions covering entire syllabus. Candidate will haveto attempt FIVE questions in all, selecting one question from each unit. Examination will be of three-hour duration.

**Practicum** will be evaluated by an external and an internal examiner. Examination will be of three-hour duration.

## UNIT-I

Introduction to Internet and World Wide Web (WWW); Evolution and History of World Wide Web, Web Pages and Contents, Web Clients, Web Servers, Web Browsers; Hypertext Transfer Protocol, URLs; Searching, Search Engines and Search Tools. Web Publishing: Hosting website; Internet Service Provider; Planning and designing website; Web Graphics Design, Steps For Developing website

## UNIT-II

Creating a Website and Introduction to Mark up Languages (HTML and DHTML), HTML Document Features& Fundamentals, HTML Elements, Creating Links; Headers; Text styles; Text Structuring; Text color and Background; Formatting text; Page layouts, Images; Ordered and Unordered lists; Inserting Graphics; Table Creation and Layouts; Frame Creation and Layouts; Working with Forms and Menus; Working with Radio Buttons; Check Boxes; Text Boxes, HTML5

## UNIT-III

Introduction to CSS (Cascading Style Sheets): Features, Core Syntax, Types, Style Sheets and HTML, Style Rule Cascading and Inheritance, Text Properties, CSS Box Model, Normal Flow Box Layout, Positioning and other useful Style Properties; Features of CSS3.

## UNIT-IV

The Nature of JavaScript: Evolution of Scripting Languages, JavaScript-Definition, Programming for Non-Programmers, Introduction to Client–Side Programming, Enhancing HTML Documents with JavaScript. Static and Dynamic web pages.

## UNIT-V(PRACTICUM)

Practicum:
In practical component the teacher concerned / instructor will ensure minimum 15 programs / case studies execution based on HTML, CSS and Java Script during the laboratory work.

**Suggested Evaluation Methods:**

| Internal Assessment: | Theory | Practicum | End Term Examination: |
|---|---|---|---|
| Class Participation | 5 | 5 | A three hour exam for both Theory and Practicum |
| Seminar/presentation/assignment/quiz/class test etc | 5 | - | |
| Seminar/Demonstration/Viva-voce/Lab records etc.: | - | 5 | |
| Mid-Term Exam | 10 | - | |
| Tota | 20 | 10 | |

**Suggested Readings:**


- Raj Kamal, Internet and Web Technologies, Tata McGraw-Hill.
- Ramesh Bangia, Multimedia and Web Technology, Firewall Media.
- Thomas A. Powell, Web Design: The Complete Reference, Tata McGraw-Hill
- Wendy Willard, HTML Beginners Guide, Tata McGraw-Hill.
- Deitel and Goldberg, Internet and World Wide Web, How to Program, PHI
- David Flanagan, JavaScript: The Definitive Guide: The Definitive Guide.
- Kogent Learning, Web Technologies: HTML, JavaScript, PHP, Java, JSP, XML, AJAX – Black Book, Wiley IndiaPvt. Ltd.

# B23-
# Software Engineering

Max. Marks:100
**Min. Pass Marks:**40

**Internal Assessment Marks** :30[Theory(20) + Practical(10)]
**External End Term Exam Marks:**70[Theory(50)+Practical(20)]

**Time:** Theory(3Hours),Practical(3Hours)

**Credit**:4

*Course Objectives:*

1. Learn the various models for software development.
2. understand how to analyze software.
3. plan a software design and the risks associated with software.
4. test and validate software

**Examiner Note:** Examiner will set a total of NINE questions. Out of which FIRST question will be compulsory and the remaining EIGHT questions will be set from four units selecting two questions from each unit. All questions will carry equal marks. First question will comprise of short answer type questions covering entire syllabus. Candidate will haveto attempt FIVE questions in all, selecting one question from each unit. Examination will be of three-hour duration.

Practicum will be evaluated by an external and an internal examiner. Examination will be of three-hour duration.

## UNIT – I

Introduction: Program vs. Software, Software Engineering, Programming paradigms, Software Crisis – problem and causes, Phases in Software development: Requirement Analysis, Software Design, Coding, Testing, Maintenance,

## UNIT – II

Software Development Process Models: Waterfall, Prototype, Agile and Spiral models.

Feasibility Study, Software Requirement Analysis and Specifications: SRS, Need for SRS, Characteristics of an SRS, Components of an SRS,

## UNIT-III

Software Project Planning: Project scheduling, Staffing, and personnel planning, team structure,
Software Design:Design fundamentals, problem partitioning, and abstraction, design methodology, Cohesion & Coupling.

## UNIT-IV

Software testing strategies: unit testing, integration testing, Validation testing, System testing, Alpha and Beta testing.
Software Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics

## UNIT-V(PRACTICUM)

Practicum:
In practical component the teacher concerned / instructor will ensure minimum 15 programs / case studies execution based on Scheduling Algorithms, Memory Management and File System during the laboratory work.

**Suggested Evaluation Methods:**

| Internal Assessment: | Theory | Practicum | End Term Examination: |
|---|---|---|---|
| Class Participation | 5 | 5 | A three hour exam for both Theory and Practicum |
| Seminar/presentation/assignment/quiz/class test etc | 5 | - | |
| Seminar/Demonstration/Viva-voce/Lab records etc.: | - | 5 | |
| Mid-Term Exam | 10 | - | |
| Total | 20 | 10 | |

**Suggested Readings:**


- Pressman R. S., "Software Engineering – A Practitioner's Approach", Tata McGraw Hill.
- Jalote P., "An Integrated Approach to Software Engineering", Narosa.
- Sommerville, "Software Engineering", Addison Wesley.
- Fairley R., "Software Engineering Concepts", Tata McGraw Hill.
- James Peter, W Pedrycz, "Software Engineering", John Wiley & Sons.

# Database Systems

**Max. Marks:**100
**Min. Pass Marks:**40

**Internal Assessment Marks** :30[Theory(20) + Practical(10)]
**External End Term Exam Marks:**70[Theory(50)+Practical(20)]

**Time:** Theory(3Hours),Practical(3Hours)

**Credit:**4

***Course Objectives:***

1. Learning basics of database systems.
2. Learning about E-R Model.
3. Learn querying the database systems.
4. To learn about data storage and retrieval.

**Examiner Note:** Examiner will set a total of NINE questions. Out of which FIRST question will be compulsory and the remaining EIGHT questions will be set from four units selecting two questions from each unit. All questions will carry equal marks. First question will comprise of short answer type questions covering entire syllabus. Candidate will haveto attempt FIVE questions in all, selecting one question from each unit. Examination will be of three-hour duration.

**Practicum** will be evaluated by an external and an internal examiner. Examination will be of three-hour duration.

## UNIT – I

Basic Concepts – Data, Information, Records and files. Traditional file Based Approach- Limitations of Traditional File Based Approach, Database Approach-Characteristics of Database Approach, Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Advantages and Disadvantages of DBMS.

## UNIT – II

Actors on the Scene - Data and Database Administrator, Database Designers, End users Applications Developers and Workers behind the Scene.
Database System Architecture – Three Levels of Architecture, Schemas – External, Conceptual and Internal Level, Data Independence – Logical and Physical Data Independence.

## UNIT – III

Entity-Relationship Model – Concepts, Entity Types, Entity Sets, Attributes, Relationships, Constraints, Keys , Degree, Cardinality etc.
Relational Data Model:-Brief History, Terminology in Relational Data Structure, Relations, Properties of Relations, Keys – Primary, Secondary, Composite, Candidate, Alternate and Foreign Key.

## UNIT – IV

SQL: Data Definition and data types, Create Table, Insert Data, Viewing Data, Filtering Table Data, Sorting data, Creating Table from a Table, Destroy table, Update, View, Delete, Join, Concatenating data from Table Specifying Constraints in SQL; Primary Key, Foreign Key, Unique Key, Check Constraint, Using Functions

## UNIT-V (PRACTICUM)

Practicum:
In practical component the teacher concerned / instructor will ensure minimum 15 programs / case studies execution based on Scheduling Algorithms, Memory Management and File System during the laboratory work.

**Suggested Evaluation Methods:**

| Internal Assessment: | Theory | Practicum | End Term Examination: |
|---|---|---|---|
| Class Participation | 5 | 5 | A three hour exam for both Theory and Practicum |
| Seminar/presentation/assignment/quiz/class test etc | 5 | - | |
| Seminar/Demonstration/Viva-voce/Lab records etc.: | - | 5 | |
| Mid-Term Exam | 10 | - | |
| Total | 20 | 10 | |

**Suggested Readings:**


- Elmasri Ramez & Navathe Shamkant B., "Fundamentals of Database Systems", Addision & Weisely, New Delhi, 2007
- Date C.J., "Database Systems", Prentice Hall of India, New Delhi, 2004
- Korth H.F. & Silverschatz A., "Database Concepts", Tata McGraw Hill, New Delhi, 2010
- Thomas Connolly Carolyn Begg, "Database Systems", 3/e, Pearson Education.

# B23-CC-C6
# Operating Systems

**Max. Marks:**100
**Min. Pass Marks:**40

**Internal Assessment Marks** :30[Theory(20) + Practical(10)]
**External End Term Exam Marks:**70[Theory(50)+Practical(20)]

**Time:** Theory(3Hours),Practical(3Hours)

**Credit:**4

***Course Objectives:***

1. Understand the basic concepts of operating systems and its services along with process management.
2. Understand concept of process scheduling and acquire knowledge of process synchronization.
3. Learn about memory management and virtual memory concepts.
4. Learn to work with directory structure and security aspects.
5. To implement the programs based on operating system.

**Examiner Note:** Examiner will set a total of NINE questions. Out of which FIRST question will be compulsory and the remaining EIGHT questions will be set from four units selecting two questions from each unit. All questions will carry equal marks. First question will comprise of short answer type questions covering entire syllabus. Candidate will haveto attempt FIVE questions in all, selecting one question from each unit. Examination will be of three-hour duration.

**Practicum** will be evaluated by an external and an internal examiner. Examination will be of three-hour duration.

## UNIT-I

ntroductory Concepts: Operating System, Functions andCharacteristics, Historical Evolution of Operating Systems, Operating System Structure.

Types of Operating System: Real time, Multiprogramming, Multiprocessing, Batch processing.

Operating System Services, Operating System Interface, ServiceSystem Calls, System Programs.Process Management: Process Concepts, Operations on Processes,Process States and Process Control Block. Inter- Process Communication.

## UNIT-II

CPU Scheduling: Scheduling Criteria, Levels of Scheduling, Scheduling Algorithms, Multiple Processor Scheduling, Algorithm Evaluation.

Synchronization: Critical Section Problem, Semaphores, Classical Problem of Synchronization, Monitors. Deadlocks: Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery.

## UNIT-III

Memory Management Strategies: Memory Management of Single-User and Multiuser Operating System, Partitioning, Swapping, Contiguous Memory Allocation, Paging and Segmentation; Virtual Memory Management: Demand Paging, Page Replacement Algorithms, Thrashing.

## UNIT-IV

Implementing File System: File System Structure, File System Implantation, file operations, Type of Files, Directory Implementation, Allocation Methods, and Free Space Management.

Disk Scheduling algorithm- SSTF, Scan, C- Scan, Look, C-Look.SSD Management.

## UNIT-V(PRACTICUM)

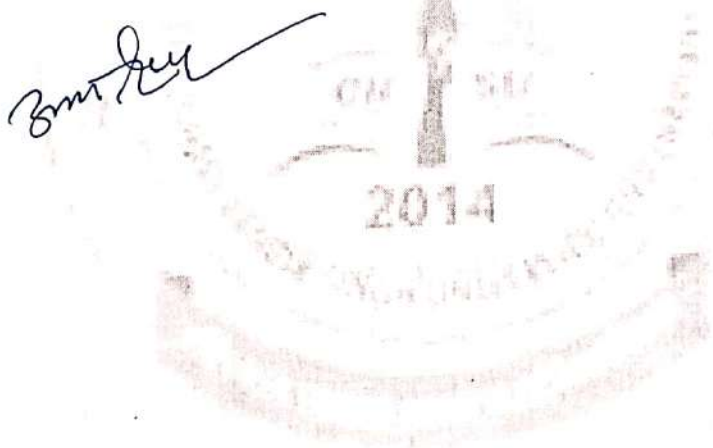
Practicum:
In practical component the teacher concerned / instructor will ensure minimum 15 programs / case studies execution based on Scheduling Algorithms, Memory Management and File System during the laboratory work.

**SuggestedEvaluationMethods:**

| InternalAssessment: | Theory | Practicum | EndTermExamination: |
|---|---|---|---|
| ClassParticipation | 5 | 5 | Athree hour examfor bothTheoryandPracticum |
| Seminar/presentation/assignment/quiz/classtestetc | 5 | - | |
| Seminar/Demonstration/Viva-voce/Labrecordsetc.: | - | 5 | |
| Mid-TermExam | 10 | - | |
| Total | 20 | 10 | |

**Suggested Readings:**


- Silberschatz A., Galvin P.B.,and Gagne G., Operating System Concepts, John Wiley &Sons.
- Godbole, A.S., Operating Systems, Tata McGraw-Hill Publishing Company, New Delhi.
- Deitel, H.M., Operating Systems, Addison- Wesley Publishing Company, New York.
- Tanenbaum, A.S., Operating System- Design and Implementation, Prentice Hall of India, New Delhi.

# Software Testing

**Max. Marks:**100
**Min. Pass Marks:**40

Time: Theory(3Hours),Practical(3Hours)

**Internal Assessment Marks** :30[Theory(20) + Practical(10)]
**External End Term Exam Marks:**70[Theory(50)+Practical(20)]

**Credit:**4

*Course Objectives:*

1. To understand the basic terminologies and types of testing
2. Understand different testing methods
3. Understand the testing process
4. Manage the tests, plan testing process and create reports
5. Testing the software/projects using various techniques

**Examiner Note:** Examiner will set a total of NINE questions. Out of which FIRST question will be compulsory and the remaining EIGHT questions will be set from four units selecting two questions from each unit. All questions will carry equal marks. First question will comprise of short answer type questions covering entire syllabus. Candidate will have to attempt FIVE questions in all, selecting one question from each unit. Examination will be of three-hour duration.

**Practicum** will be evaluated by an external and an internal examiner. Examination will be of three-hour duration.

## UNIT – I

Introduction: Definition of Software Testing and its Role, Terms: Failure, Error, Fault, Defect, Bug, Goals of Testing, Principles of Testing, Software Testing Life Cycle, Verification and Validation.

## UNIT – II

Types of Testing: Black Box Testing: Techniques: Boundary Value Analysis, Equivalence class testing, Decision Table White Box Testing: What is white box Testing, Classification , Structural : Coverage, Path testing

## UNIT-III

Levels of Testing Unit Testing, Integration Testing, Techniques: Graph based & Path based, Functional Testing, System Testing, Recovery, Acceptance Testing : Overview, Types of Acceptance Testing

## UNIT – IV

Test Planning: Preparing a Test plan, Scope management, Decide Test Approach, Setting Up Criteria, for testing, Identifying responsibilities, Staffing, training needs, Resource requirements, Test deliverables, Testing Tasks

## UNIT-V(PRACTICUM)

Practicum:
In practical component the teacher concerned / instructor will ensure minimum 15 programs / case studies execution based on Scheduling Algorithms, Memory Management and File System during the laboratory work.

**Suggested Evaluation Methods:**

| InternalAssessment: | Theory | Practicum | EndTermExamination: |
|---|---|---|---|
| ClassParticipation | 5 | 5 | Athree hour examfor bothTheoryandPracticum |
| Seminar/presentation/assignment/quiz/classtestetc | 5 | - | |
| Seminar/Demonstration/Viva-voce/Labrecordsetc.: | - | 5 | |
| Mid-TermExam | 10 | - | |
| Tota | 20 | 10 | |

**Suggested Readings:**


- Bayross Ivan, "Web Enabled Commercial Applications Development using HTML, Javascript, DHTML & PHP", BPB Publication, 2005
- Powell Thomas, "The Complete Reference HTML & CSS", Tat Mc-Graw Hill, 2010
- Wendy Willard, "HTML Beginners Guide", Tata McGraw-Hill
- Deitel and Goldberg, "Internet and World Wide Web, How to Program", PHI.

# B23-CC-M6
# Web Designing

**Max. Marks:**100
**Min. Pass Marks:**40

**Time:** Theory(3Hours),Practical(3Hours)

**Internal Assessment Marks** :30[Theory(20) + Practical(10)]
**External End Term Exam Marks:**70[Theory(50)+Practical(20)]

**Credit**:4

*Course Objectives:*

1. Learn the basics of web development.
2. Understand different types of web pages and web sites.
3. Implement HTML and for web page designing.
4. Understand the design of web crawlers and search engines.

**Examiner Note:** Examiner will set a total of NINE questions. Out of which FIRST question will be compulsory and the remaining EIGHT questions will be set from four units selecting two questions from each unit. All questions will carry equal marks. First question will comprise of short answer type questions covering entire syllabus. Candidate will have to attempt FIVE questions in all, selecting one question from each unit. Examination will be of three-hour duration.

**Practicum** will be evaluated by an external and an internal examiner. Examination will be of three-hour duration.

## UNIT – I

Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol; URLs; Searching and Web- Casting Techniques; Search Engines and Search Tools

## UNIT – II

Steps for Developing Website; Choosing the Contents; Home Page; Domain Names; Internet Service Provider; Planning and Designing Web Site; Creating a Website; Web Publishing: Hosting Site;

## UNIT-III

Introduction to HTML; Hypertext and HTML; HTML Document Features;
HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line, Creating Links; Headers; Text Styles; Text Structuring; Text Colors and Background; Formatting Text; Page layouts; Insertion of Text, Movement of Text

## UNIT – IV

Images: Types of Images, Insertion of Image, Movement of Image, Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width, Colours; Frame Creation and Layouts; Working with Forms and Menus; Working with Buttons like Radio, Check Box;

## UNIT-V(PRACTICUM)

Practicum:
In practical component the teacher concerned / instructor will ensure minimum 15 programs / case studies execution based on Scheduling Algorithms, Memory Management and File System during the laboratory work.

**Suggested Evaluation Methods:**

| InternalAssessment: | Theory | Practicum | EndTermExamination: |
|---|---|---|---|
| ClassParticipation | 5 | 5 | Athree hour examfor bothTheoryandPracticum |
| Seminar/presentation/assignment/quiz/classtestetc | 5 | - | |
| Seminar/Demonstration/Viva-voce/Labrecordsetc.: | - | 5 | |
| Mid-TermExam | 10 | - | |
| Tota | 20 | 10 | |

**Suggested Readings:**


- Bayross Ivan, "Web Enabled Commercial Applications Development using HTML, Javascript, DHTML & PHP", BPB Publication, 2005
- Powell Thomas, "The Complete Reference HTML & CSS", Tat Mc-Graw Hill, 2010
- Wendy Willard, "HTML Beginners Guide", Tata McGraw-Hill
- Deitel and Goldberg, "Internet and World Wide Web, How to Program", PHI.