



YESHWANTRAO CHAVAN COLLEGE OF ENGINEERING
(An Autonomous Institution affiliated to R T M Nagpur University Nagpur)
Accredited by NAAC (1st Cycle) with 'A' Grade (Score 3.25 on 4 Point Scale)

Wanadongri, Hingna Road, Nagpur-441110

Department of Computer Technology (Minor in CT)



B.E. Minor in Computer Technology
SoE & Syllabus 2021-22



Nagar Yuwak Shikshan Sanstha's

Yeshwantrao Chavan College of Engineering

(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

Department of Computer Technology

SoE and Syllabus

B.E Minors in Computer Science & Engineering

SoE No.
MIN-101

B.E Minors in Computer Science & Engineering Information Brochure of Minor Program

1. Title of Program: **Minors course in Computer Technology**
2. Type of Program : **Minor**
3. Department offering the program: **Computer Technology**
4. Industry / Association / Collaboration: No
5. Department/s eligible to opt for the program:

The students from CE, EL, ME, EE, ETC are eligible to opt for this program.

Department of Computer Technology and Department of Information Technology students are not permitted to opt for the program.

6. General information about courses in program:

Computer scientists and engineers can have a huge impact on the future of the field.

The field of Computer Technology inherently give support to the other engineering domain. While studying any engineering discipline, student may develop interest in the computer technology because of its ability to provide the solution for the other domains.

This minor course in Computer Technology is designed to provide the fundamental knowledge of the computer technology.

The courses in this program are the core courses from the field like Operating System, Computer Networks, Data Structures and Database Management System. This program includes the courses on the advance technologies used in the IT industry, like Web Technology and Python Programming. All the core courses from the program are also having the practical component.

7. Employability potential of program:

Many of the students from other engineering disciplines are ultimately landed in the IT company. In such scenario, students will be highly benefited by this course. This course helps them to create their unique identity in the selection process for the job.

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The courses like Data Structure and Database Management System are playing very important role in the selection process of the industry. The students of this program are automatically benefited in this area. Also Python programming is the widely used programming language in the industry, its knowledge will definitely helps the non-IT students in cracking the interview or technical tests.

Overall this program is going to increase the employability among the non-IT students in the IT industry.

8. Departmental Steering committee: For proper publicity / conduct of program

SN	Name of the Faculty Member	Post	Designation	e-mail ID	Contact Number
1	Dr. G. M. Dhopavkar	HoD & Chairman	Asst. Prof.	hod_ct@ycce.edu	9822087970
2	Dr. P. A. Deshkar	Member	Asst. Prof.	padeshkar@ycce.edu	9923401052
3	Dr. K. R. Singh	Member	Asso. Prof.	singhkavita19@gmail.com	8275783031
4	Dr. S. D. Kamble	Member	Asso. Prof.	shailesh_2kin@rediffmail.com	9158886477
5	Dr. R. D. Wajgi	Member	Asst. Prof	rdwajgi@ycce.edu	9970238062
6	Prof. N. M. Mangrulkar	Member	Asst. Prof.	nmangrulkar@ycce.edu	7767888776

9. Departmental coordinator

SN	Name of the Faculty Member	Post	Designation	e-mail ID	Contact Number
1	Dr. Prarthana A. Deshkar	Member	Asst. Prof.	padeshkar@ycce.edu	9834359349

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**SoE No.
MIN-101**

Scheme of Examinations

Minors in Computer Technology

SN	Sem	Sub. Code	Subject	T/	Contact Hours				Credits	% Weightage			ESE Duration Hours
					L	T	P	Hr		MS	TA	ESE	
1	5	CTM101	Fundamentals of Algorithm	T	3	0	0	3	3	30	30		40
2	5	CTM102	Lab: Fundamentals of Algorithm	P	0	0	2	2	1			60	40
3	5	CTM103	Data Structures	T	3	0	0	3	3	30	30		40
4	5	CTM104	Lab: Data Structures	P	0	0	2	2	1			60	40
5	6	CTM111	Operating Systems	T	3	0	0	3	3	30	30		40
6	6	CTM112	Lab: Operating Systems	P	0	0	2	2	1			60	40
7	6	CTM113	Database Management Systems	T	3	0	0	3	3	30	30		40
8	6	CTM114	Lab: Database Management Systems	P	0	0	2	2	1			60	40
9	7	CTM121	Lab: Python Programming	P	0	0	2	2	1			60	40
10	7	CTM122	Lab: Web Technology	P	0	0	2	2	1			60	40
					12	0	12	24	18				

MSEs* = Three MSEs of 15 Marks each will conducted and marks of better 2 of these 3 MSEs will be considered for Continuous Assessment

TA ** = for Theory : 20 marks on lecture quizzes, 8 marks on assignments, 2 marks on class performance

TA = for Practical : MSPA will be 15 marks each**

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SoE No.
MIN-101

V Semester

CTM101	Fundamentals of Algorithms			L= 3	T = 0	P = 0	Credits = 3
Evaluation Scheme *Best Two out of three MSE's would be considered	MSE-I*	MSE-II*	MSE-III*	TA	ESE	Total	ESE Duration
	15	15	15	30	40	100	3 Hrs
Prerequisites							
Course Objective Students should be able to: 1. Understand different asymptotic notations. 2. Have an appreciation of different mathematical principles of algorithm analysis 3. Gain an understanding and apply various algorithm design strategies like divide and conquer strategy, greedy strategy, dynamic programming strategy and backtracking strategy. 4. To understand various complexity classes like P, NP, NP-complete and NP-Hard.				Course Outcome Students will be able to 1. Compare different types of asymptotic notations and find the time complexity in terms of asymptotic notations. 2: Solve recurrences using various techniques. 3. Implement divide and conquer strategy, greedy strategy, dynamic programming algorithms and backtracking strategy 4. Identify and differentiate between various types of complexity classes.			
UNIT I : Mathematical foundations, summation of arithmetic and geometric series, $\sum n$, $\sum n^2$, bound summations using integration, analyzing control structures, worst case and average case analysis, Asymptotic notations 5 hrs							
UNIT II : Recursive functions and recurrence relations, solutions of recurrence relations using technique of characteristic equation and generating functions. 5 hrs							
UNIT III : Divide and conquer basic strategy, binary search, quick sort, merge sort Greedy method – basic strategy, application to job sequencing with deadlines problem, minimum cost spanning trees, etc. 5 hrs							

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UNIT IV :

Dynamic Programming basic strategy, all pair shortest path, single source shortest paths, traveling salesman problem.

5 hrs

UNIT V:

Basic Traversal and Search Techniques, breadth first search, connected components, Backtracking basic strategy, 8 – Queen's problem.

5 hrs

UNIT VI:

NP-hard and NP-complete problems, basic concepts, non-deterministic algorithms, NP-hard and NP-complete,

5 hrs

Text Books:

1. "Computer Algorithms", Horowitz, Sahni, Rajasekaran, Universities press
2. "Introduction to Algorithms", Cormen, Leiserson, Rivest, Stein, Prentice Hall of India
3. "Fundamentals of Algorithms", Brassard, Bratley, Prentice Hall of India

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V Semester

CTM102	Lab: Fundamentals of Algorithms			L= 0	T = 0	P = 1	Credits = 1
Evaluation Scheme	MSE-I*	MSE-II*	MSE-III*	TA	ESE	Total	ESE Duration
*Best Two out of three MSE's would be considered	--	--	--	60	40	100	3 Hrs
Prerequisites							
Course Objective Students should be able to: 2. Understand different asymptotic notations. 2. Have an appreciation of different mathematical principles of algorithm analysis 3. Gain an understanding and apply various algorithm design strategies like divide and conquer strategy, greedy strategy, dynamic programming strategy and backtracking strategy. 4. To understand various complexity classes like P, NP, NP-complete and NP-Hard.				Course Outcome Students will be able to 2. Compare different types of asymptotic notations and find the time complexity in terms of asymptotic notations. 2: Solve recurrences using various techniques. 3. Implement divide and conquer strategy, greedy strategy, dynamic programming algorithms and backtracking strategy 4. Identify and differentiate between various types of complexity classes.			

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V Semester

CTM103	Data Structures			L= 3	T = 0	P = 0	Credits = 3
Evaluation Scheme	MSE-I*	MSE-II*	MSE-III*	TA	ESE	Total	ESE Duration
*Best Two out of three MSE's would be considered	15	15	15	30	40	100	3 Hrs

Prerequisites

Course Objective

Students should be able to

1. To make students familiar with syntaxes and usages of various programming constructs of C language.
2. To make student understand concept of abstract data types like stacks and queues.
3. To make student understand file handling operations.
4. To create thinking ability needed for implementation of programming logic with proper use of memory

Course Outcome

Students will be able to

1. To Identify programming constructs needed to solve real world problems.
2. To Implement various abstract data types
3. To Write program for file handling by using various access modes and operations needed as per the requirement of given problem.
4. To Implement programming logic needed for solving given problem

UNIT I :

Types and operations, Iterative constructs and loop invariants, Quantifiers and loops, Structured programming and modular design, Illustrative examples, Scope rules, parameter passing mechanisms, recursion, program stack and function invocations including recursion

UNIT II :

Overview of arrays and array based algorithms - searching and sorting: merge sort, quick sort, Sparse matrices.

UNIT III :

Structures (Records) and array of structures (records). Database implementation using array of records. Dynamic memory allocation and deallocation. Dynamically allocated single and multi-dimensional arrays, polynomial representation

UNIT IV :

Concept of an Abstract Data Type (ADT), Lists as dynamic structures, operations on lists, implementation of linked list using arrays and its operations. Introduction to linked list implementation using self-referential-structures/pointers

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UNIT V:

Stack, Queues and its operations. Implementation of stacks and queues using both array-based and pointer-based structures. Applications of stacks and queues.

UNIT VI:

Files, operations on them, examples of using file

Text Books:

	Title	Edition	Author	Publisher
1	Fundamentals of Data Structures in C++	Latest Edition	Ellis Horowitz, Sartaj Sahani, Dinesh Mehta	University Press
2	Data Structures and Program Design in C	Latest Edition	Robert Kruse, Cl Tondo	Pearson Education

Reference Book:

	Title	Edition	Author	Publisher
1	Data Structures with C	Latest Edition	Seymour Lipschutz	TMH
2	Data structures using C	Latest Edition	Reema Thareja	Oxford

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V Semester

CTM104	Lab: Data Structures			L= 0	T = 0	P = 1	Credits = 1
Evaluation Scheme	MSE-I*	MSE-II*	MSE-III*	TA	ESE	Total	ESE Duration
*Best Two out of three MSE's would be considered	--	--	--	60	40	100	3 Hrs

Prerequisites**Course Objective**

Students should be able to

1. To make students familiar with syntaxes and usages of various programming constructs of C language
2. To make student understand concept of abstract data types like stacks and queues
3. To make student understand file handling operations
4. To create thinking ability needed for implementation of programming logic with proper use of memory

Course Outcome

Students will be able to

1. To Identify programming constructs needed to solve real world problems.
2. To Implement various abstract data types.
3. To Write program for file handling by using various access modes and operations needed as per the requirement of given problem.
4. To Implement programming logic needed for solving given problem.

1. Program for counting number of digits in a random number
2. Program for generating list of random numerals and print them in words
3. Program to print Pascal's triangle.


```

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1

```
4. Program for finding GCD of two numbers using factorial method
5. Program for finding GCD of two numbers using recursion. Also, print number of recursive calls.
6. Program for allocating memory dynamically for single dimensional array and sort it using quick sort and merge sort
7. Program for allocating memory dynamically for two-dimensional array printing it in spiral manner.
8. Program to create linked list of cell phone with any 3 attributes as data fields and print it
9. Program to create file for storing details of all the items needed for playing any game of your choice also perform display, insertion of new record at any location, deletion of any record
10. Program to implement stack and print MAX data item from it

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VI Semester

CTM111	Operating Systems			L= 3	T = 0	P = 0	Credits = 3
Evaluation Scheme	MSE-I*	MSE-II*	MSE-III*	TA	ESE	Total	ESE Duration
*Best Two out of three MSE's would be considered	15	15	15	30	40	100	3 Hrs

Prerequisites

Course Objective

Students should be able to

1. To learn different types of OS & services provided by OS.
2. To understand process management and inter-process communication.
3. To know the deadlock concepts & deadlock avoidance algorithms.
4. To understand the need of memory management.
5. To learn different file system organization.

Course Outcome

Students will be able to:

1. Analyze & compare different OS & its services.
2. Apply & analyze CPU scheduling algorithm & also find different ways to synchronize the process.
3. Use different methods to handle deadlock.
4. Apply various memory management techniques.
5. Compare various disk scheduling algorithms based on their performances.

UNIT I :

Introduction, services provided by OS, functions of OS, system calls.

Process management-introduction, process control block, process states, process context switch, threads: user level and kernel level

UNIT II :

CPU scheduling, goals of scheduling, CPU scheduling algorithms: FCFS, SJF, SRTF, RR, Priority based.

Inter-process communication: process cooperation and synchronization, race condition, critical section, mutual exclusion and implementation, semaphores, classical inter-process communication problems.

UNIT III :

Deadlocks: System Model, deadlock characterization-necessary conditions, resource allocation graph (RAG), methods for handling deadlock-deadlock avoidance, deadlock detection, deadlock prevention, recovery from deadlock

UNIT IV :

Memory management techniques-contiguous and non-contiguous, paging and segmentation, translation look aside buffer (TLB) and overheads

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UNIT V:

Virtual memory and demand paging, page faults, page replacement algorithms, thrashing and working set model.

UNIT VI:

File systems-introduction, disk space management and space allocation strategies, directory structures, disk caching, disk arm scheduling strategies: FCFS, SSTF, SCAN, CSACN, LOOK, CLOOK, File Organization: Sequential, Index, Index Sequential

Text Books:

	Title	Edition	Author	Publisher
1	Operating system concepts	Latest Edition	A. Silberchatz and P.Galvin	Addison Wesley Longman Inc.
2	Operating system Principles	Latest Edition	A. Silberchatz and P.Galvin	John Wiley & Sons Inc.

Reference Book:

	Title	Edition	Author	Publisher
1	Modern operating systems	Latest Edition	A.S. Tanenbaum	Prentice Hall of India publication.
2	Operating System	Latest Edition	Crowley	Tata McGraw Hill publication

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VI Semester

CTM112	Lab:Operating Systems			L= 0	T = 0	P = 1	Credits = 1
Evaluation Scheme	MSE-I*	MSE-II*	MSE-III*	TA	ESE	Total	ESE Duration
*Best Two out of three MSE's would be considered	--	--	--	60	40	100	3 Hrs

Prerequisites

Course Objective

Students should be able to

1. To learn different types of OS & services provided by OS.
2. To understand process management and inter-process communication.
3. To know the deadlock concepts & deadlock avoidance algorithms.
4. To understand the need of memory management.
5. To learn different file system organization

Course Outcome

Students will be able to

1. Analyze & compare different OS & its services.
2. Apply & analyze CPU scheduling algorithm & also find different ways to synchronize the process.
3. Use different methods to handle deadlock.
4. Apply various memory management techniques.
5. Compare various disk scheduling algorithms based on their performances.

- Basics of Linux commands and its use.
- Write a shell script to find maximum of 3 numbers.
- (ii)Write a shell script to check whether entered number even or odd
- Write a shell script to find factorial of a number
- (ii)Write a shell script to find the sum of all the digits of a number
- Write a program to create a process using fork() system call.
- Write a program to implement Non-Preemptive Priority scheduling algorithm.
- Write a program to implement FIFO page replacement algorithm.
- Write a program to implement First-Fit/Worst-Fit strategies
- Installation of Linux Operating System.
- Case study on Advanced Operating System (Ameoba).

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VI Semester

CTM113	Database Management Systems			L= 3	T = 0	P = 0	Credits = 3
Evaluation Scheme	MSE-I*	MSE-II*	MSE-III*	TA	ESE	Total	ESE Duration
*Best Two out of three MSE's would be considered	15	15	15	30	40	100	3 Hrs

Prerequisites

Course Objective

Students should be able to

1. To learn different database system concepts
2. To learn the designing of Entity Relationship Diagram.
3. To know relational data model, relational algebra & SQL Queries.
4. To understand relational database design.
5. To know about data integrity issues

Course Outcome

Students will be able to

1. Analyze & compare different levels of abstraction & data independence.
2. Design Entity Relationship Diagram for any scenario.
3. Solve queries based on relational algebra & SQL.
4. Identify functional dependencies & normalise the database and apply ACID properties.
5. Analyse transaction management, various concurrency control protocols and crash recovery methods

UNIT I :

Introduction to Database Management System: General File System and Database system Concepts and Architecture, Data Models, Schemas and Instances, Abstraction & Different Levels of Data Abstraction, Data Independence: Logical & Physical Independence

UNIT II :

Entity-Relationship Model: Entities and Entity Sets, Relationships and Relationship Sets, Attributes, Mapping Constraints, Keys, Entity Relationship Diagram, Reducing E-R Diagrams to Tables, Generalization, Aggregation, Design of an E-R Database Scheme.

UNIT III :

SQL: Data definition language (DDL), Data Manipulation Language (DML), Basic structure of SQL Queries, Set operations, Null Values, Nested subqueries, views, modification of database, transaction, Joins.

Advanced SQL: SQL data types & schemas, Integrity Constraints, Domain Constraints, Assertions, triggers, Advanced SQL Features

UNIT IV :

Relational Data Model: Structure of Relational Databases

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Relational Algebra: Structure of relational databases, Fundamental Relational-Algebra Operations, Additional relational algebra operations, extended relational algebra operations, modification of the databases

UNIT V:

Relational Database Design: Pitfalls in Relational Database Design, Functional Dependencies, Normalization using Functional Dependencies, Alternative Approaches to Database design.

Transaction Management: ACID Properties, Implementation of ACID Properties, Database processes to support ACID Properties, Schedules, and Testing of Serializability.

UNIT VI:

Concurrency Control: Lock-based Protocols, Timestamp Based Protocols, Validation Techniques, Multiple Granularity, Multi version Timestamp Protocol, Transaction isolation levels, Read consistency.

Crash Recovery: Failure Classification, Log Based Recovery, Buffer Management, Checkpoints, Shadow Paging..

Text Books:

	Title	Edition	Author	Publisher
1	Database System Concepts	Latest Edition	Korth, Silberschatz	McGraw-Hill publication
2	Fundamentals of Database Systems	Latest Edition	Elmasri, Navathe & Gupta	Pearson Education

Reference Book:

	Title	Edition	Author	Publisher
1	Database Systems	Latest Edition	Connolly	Pearson Education
2	Principles of Database Systems	Latest Edition	Ullman	Golgotia Publications

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VI Semester

CTM114	Lab: Database Management Systems			L= 0	T = 0	P = 1	Credits = 1
Evaluation Scheme *Best Two out of three MSE's would be considered	MSE-I*	MSE-II*	MSE-III*	TA	ESE	Total	ESE Duration
	--	--	--	60	40	100	3 Hrs

Prerequisites

Course Objective

Students should be able to

1. To Understand fundamental database concepts and the different database systems, methodologies to conceptualize systems.
2. To model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.
3. To understand, advanced develop applications involving advanced database systems.
4. To Know Various database concepts, Identify the key issues in developing database systems and applications.

Course Outcome

Students will be able to

1. Design relational database for any given problem, write appropriate queries for accessing database.
2. design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
3. Examine the different operation of Transaction to design efficient system.
4. Compare among different types of database and its different concept

- Study of My-SQL
- Designing of an ER Diagram.
- Designing of Database Schema based on ER diagram.
- Implementation of different DDL commands.
- Implementation of Constraints: Referential Constraints, Domain Constraints
- Implementation of different DML Commands
- Study and Implement Inner join.
- Study and Implement Outer Join.
- Consider the schema for Movie Database:ACTOR (Act_id, Act_Name, Act_Gender)DIRECTOR (Dir_id, Dir_Name, Dir_Phone)MOVIES (Mov_id, Mov_Title, Mov_Year, Mov_Lang, Dir_id)MOVIE_CAST (Act_id, Mov_id, Role)RATING (Mov_id, Rev_Stars)

Write SQL queries to

1. List the titles of all movies directed by 'Hitchcock'.
2. Find the movie names where one or more actors acted in two or more movies.
3. List all actors who acted in a movie before 2000 and also in a movie after 2015 (use JOIN operation).
4. Find the title of movies and number of stars for each movie that has at least one rating and find the highest number of stars that movie received. Sort the result by movie title.
5. Update rating of all movies directed by 'Steven Spielberg' to 5

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VII Semester

CTM121	Lab: Python Programming			L= 0	T = 0	P = 1	Credits = 1
Evaluation Scheme	MSE-I*	MSE-II*	MSE-III*	TA	ESE	Total	ESE Duration
*Best Two out of three MSE's would be considered	--	--	--	60	40	100	3 Hrs

Prerequisites**Course Objective**

Students should be able to

1. To make student aware about various programming frameworks of Python
2. To make student familiar with syntax of various data structures and their operation along with control statements in Python
3. To make students comprehend concepts of file handling, classes and objects
4. To make student aware about various packages inbuilt in Python along with their usages

Course Outcome

Students will be able to

1. To select any framework for python programming as per their understanding
2. To write any python program using various data structures and control statements
3. To write program where file handling and concepts of classes and objects are needed
4. To develop advanced applications using functionalities provided under various packages of python

Unit- I:

Python frameworks: Basic syntax, variables and expressions, basic operators, decision making

Unit- II :

Control flow statements: continue, break, Loops: while, for and Functions

Unit- III:

Data structures: list, dictionary, arrays, tuples, sets, strings

Unit- IV:

File handling, Classes and objects

Unit- V:

Introduction to Various Libraries:

NumPy: Fundamental package for scientific computing, NLTK- Natural language toolkit

Unit- VI:

Python patterns- Implementing Graphs NetworkX- A package for the creation, manipulation, and study of the structure, dynamics, and functions of complex networks.

		May 2021	1.00	Applicable for AY2021-22 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



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Yeshwantrao Chavan College of Engineering

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Department of Computer Technology

SoE and Syllabus

B.E Minors in Computer Science & Engineering

SoE No.
MIN-101

Expt.No.	Experiments based on
01	Informal introduction to programming IDEs Downloading and installing Python
02	Python: variables, operations, control flow - assignments, condition-als, loops, functions
03	Python: types, expressions, strings, lists, tuples, dictionaries
04	Python memory model: names, mutable and immutable values Operations pertaining to various data structures
05	More on Python functions: optional arguments, default values Passing functions as arguments Higher order functions on lists: map, list comprehension
06	Exception handling, Basic input/output, Handling files
07	Classes and Objects
08	Various packages in Python

Text Books:

	Title	Edition	Author	Publisher
1	Introduction to Programming Using Python	Latest Edition	Y. Daniel Liang	Pearson
2	Python: The Complete Reference	Latest Edition	Martin C Brown	McGraw Hill

Reference Book:

	Title	Edition	Author	Publisher
1	Data Structures and Algorithms Using Python	Latest Edition	Rance D. Necaise	Willey

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SoE and Syllabus

B.E Minors in Computer Science & Engineering

SoE No.
MIN-101

VII Semester

CTM122	Lab: Web Technology			L= 0	T = 0	P = 1	Credits = 1
Evaluation Scheme	MSE-I*	MSE-II*	MSE-III*	TA	ESE	Total	ESE Duration
*Best Two out of three MSE's would be considered	--	--	--	60	40	100	3 Hrs

Prerequisites

Course Objective

Students should be able to

1. To introduce with the internet technology
2. To study the basic of web page designing
3. To introduce the validations in the web page
4. To introduce the concepts of data storage using XML
5. To learn the advance technique for designing the interactive web page

Course Outcome

Students will be able to

1. Understand various internet technologies
2. To design the web pages using some basic techniques
3. To design and implement the interactive web pages
4. To use the XML technology to store the data
5. To design and develop the interactive web pages using the advanced technique

Unit- I:

INTRODUCTION: Basic tools of internet access, email, ftp, news, www, introduction to internet programming, Electronic Mail, File Transfer protocol, domain Name, client server application, HTTP, URL, Static and Dynamic Web sites .

Unit- II:

WEB PAGE DESIGNING: Creation of web pages: HTML tags, special characters, images, tables, forms, the hyperlinks, Frames.

Unit -III:

SCRIPTING: JAVA SCRIPT: Introduction to Javascript, Basic Syntax, Control Structures, Writing Functions, The Document Object Model, Events Handling.

Unit -IV:

XML: XML basics, understanding markup languages, structures and syntax, valid vs. well formed XML, DTD (document type Definitions) classes. Scripting XML, XML processor, parent child relationship, XML as a data, data type in XML, XML namespaces,

Unit -V:

ASP.NET Fundamentals: ASP.NET Controls, Data Validation Controls, Working with Images.

Unit -VI:

WEBSITE DESIGN USING ASP.NET: Designing sample application in ASP.net, GET & POST

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SoE and Syllabus

B.E Minors in Computer Science & Engineering

SoE No.
MIN-101

Requests in forms

1. Introduction to Internet (overview of Internet, email, www, broad band, FTP)
2. Study and implement basic html tags
3. Create Web Form by using FORMS in HTML (use any example)
4. Program to demonstrate the use of JavaScript in while and for loops
5. Program to demonstrate the use of JavaScript conditional statements and functions.
6. Demonstrate validation of form controls using simple functions written in JavaScript.
7. Introduction to XML. Program to demonstrate use of External and Internal DTD.
8. To create a web form to demonstrate use of ASP.net web controls – Radio Button Control, Image Control and Link Button Control
9. Create a web form which will accept two numbers as input and perform an operation depending on value selected from dropdown list control.
10. To demonstrate use of validation controls including required field validator, range validator, compare validator, regular expression validator and summary validator.

Text Books:

	Title	Edition	Author	Publisher
1	Learn to code HTML & CSS: develop & style websites	Latest Edition	Shay Howe	[Berkeley]: New Riders, cop.
2	The definitive guide to Netbeans Platform	Latest Edition	HeikoBöck	Berkeley, CA :Apress

Reference Book:

	Title	Edition	Author	Publisher
1	The book of Inkscape	Latest Edition	Dmitry Kirsanov	San Francisco, Calif.:No Starch; Farnham: O'Reilly [distributor]
2	The sed&awk Pocket Reference	Latest Edition	Arnold Robbins	Arnold Robbins

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