

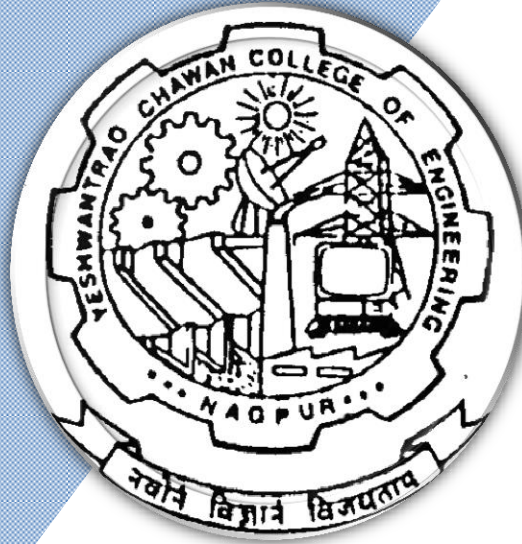
Nagar Yuwak Shikshan Sanstha's

Yeshwantrao Chavan College of Engineering

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

(Accredited 'A' Grade by NAAC with a score of 3.25)

Hingna Road, Wanadongri, Nagpur - 441 110



Bachelor of Engineering Minors in Computer Science & Engineering

**Offered by Computer Technology
SoE & Syllabus 2018**



Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

B.E. SCHEME OF EXAMINATION 2020-21

Computer Technology

Minors in Computer Science and Engg

SN	Sem	Type	Sub. Code	Subject	T/P	Contact Hours				Credits	% Weightage			ESE Duration Hours	
						L	T	P	Hrs		MSEs*	TA**	ESE		
1	5	PC	CT2601	Computer Networks	T	3	0	0	3	3	30	30	40	3 Hours	
2	5	PC	CT2602	Lab: Computer Networks	P	0	0	2	2	1		60	40		
3	5	PC	CT2603	Data Structures	T	3	0	0	3	3	30	30	40	3 Hours	
4	5	PC	CT2604	Lab:Data Structures	P	0	0	2	2	1		60	40		
5	6	PC	CT2611	Operating Systems	T	3	0	0	3	3	30	30	40	3 Hours	
6	6	PC	CT2612	Lab:Operating Systems	P	0	0	2	2	1		60	40		
7	6	PC	CT2613	Database Management Systems	T	3	0	0	3	3	30	30	40	3 Hours	
8	6	PC	CT2614	Lab: Database Management Systems	P	0	0	2	2	1		60	40		
9	7	PC	CT2621	Lab: Python Programming	P	0	0	2	2	1		60	40		
10	7	PC	CT2622	Lab: Web Technology	P	0	0	2	2	1		60	40		
TOTAL						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**

		June 2020	1.00	Applicable for AY 2020-21 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020**Computer Technology****B.E. Minors in Computer Science & Engineering****V Semester****CT2601 - Computer Networks**

Objective	Course Outcome
Students will be able to: 1) Understand the importance of layering architecture and classify different types of networks. 2) Study of different protocols at various layers. 3) Study of modern networking tools.	On completion of this course, the student will be able to 1) Identify appropriate design issues and explain network reference mode. 2) Select appropriate protocol at various layers for the given application. 3) Solve problems in the networking domain. 4) Analyze the performance of network using different tools

CO	Statement	Mapped PO											PSO		
		PO	PO	PO	PO	PO	PO	PO	PO	PO	PO1	PO1	PO1	PSO	PSO
CO	Identify appropriate design issues and explain network reference mode	3		1									3		2
CO	Select appropriate protocol at various layers for the given application.	3	1										3		2
CO	Solve problems in the networking domain.	3	1										3		
CO	Analyze the performance of network using different tools.	3	2		2				2				3	1	2

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Nagar Yuwak Shikshan Sanstha's

Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020

Computer Technology

B.E. Minors in Computer Science & Engineering

V Semester

CT2601 - Computer Networks

Unit No.	Contents	Max. Hrs.
1	Introduction to Computer Networks – A brief history, Data Networks – from Circuit Switching Network to Packet Switching Network, Network Protocol Stack, Services at the Different Layers of the Protocol Stack, Application Layer – Different Protocols at the Application Layer, Hypertext Transfer Protocol, File Transfer (FTP)	6
2	Transport Layer – Services, Connection, Reliability, Sliding Window Protocols, Transport Layer Primitives	5
3	Transmission Control Protocol – Basics, Connection Establishment and Closure at transport layer, Flow Control, Congestion Control, User Datagram Protocol	6
4	Network Layer – Introduction, IP Addressing (IPv4) – Classful addressing, CIDR, Network Address Translation (NAT), IPv6 Addressing, Internet QoS, IP Routing Table	6
5	Data Link Layer – Overview, - Basic Concepts, Ethernet, Flow and Error Control, ARP-RAPP-BOOTP-DHCP	6
6	Physical Layer	5

Text Books

SN	Title	Edition	Authors	Publisher
1.	Computer Networks	9th Edition (September 2009)	A.S. Tanenbaum	Pearson Publication
2.	Computer Networking, A Top - Down Approach	6th Edition	Ames Kurose, Keith Ross	Pearson Publication

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Nagar Yuwak Shikshan Sanstha's

Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020

Computer Technology

B.E. Minors in Computer Science & Engineering

V Semester

CT2602 - Lab: Computer Networks

Practical List:

S.N	List of Experiments
1	How to bring two computers in the network. Configure TCP/IP to configure Internet on your computer.
2	Use Network Utility Command like ping, ipconfig, netstat, tracert to observe the network details.
3	To implement Hamming Code using C and C++.
4	To implement Dijkstra's Routing algorithm using backtracking approach.
5	Use traffic monitoring tool Wireshark to observe network traffic with packet details.
6	Configure router. Configure network using Cisco Packet Tracer software and show packet transmission from source to destination.
7	Configure Virtual LAN using cisco packet tracer.
8	Use Openssl command to perform Asymmetric key encryption(RSA) and also implement RSA algorithm.
9	To study Wireless network of YCCE campus
10	Advance Practical: Introduction to NS2

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020**Computer Technology****B.E. Minors in Computer Science & Engineering****V Semester****CT2603 - Data Structures**

Course Objective	Course Outcomes
<ul style="list-style-type: none">To make students familiar with syntaxes and usages of various programming constructs of C languageTo make student understand concept of abstract data types like stacks and queuesTo make student understand file handling operationsTo create thinking ability needed for implementation of programming logic with proper use of memory	<ul style="list-style-type: none">To Identify programming constructs needed to solve real world problemsTo Implement various abstract data typesTo Write program for file handling by using various access modes and operations needed as per the requirement of given problemTo Implement programming logic needed for solving given problem

UNIT 1:**[7 Hrs]**

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 2:**[7 Hrs]**

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

UNIT 3:**[5 Hrs]**

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 4:**[6 Hrs]**

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.

UNIT 5:**[7 Hrs]**

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

UNIT 6:**[4 Hrs]**

1. Files, operations on them, examples of using file.

Text Books:

SN	Title	Edition	Authors	Publisher
1	Fundamentals of Data Structures in C++	2 nd 2009	Ellis Horowitz, Sartaj Sahani, Dinesh Mehta	University Press
2	Data Structures and Program Design in C	2 nd 2009	Robert Kruse, CI Tondo	Pearson Education
3	The C programming Language	2 nd Edition	Brian Kernighan, Dennis Ritchie	Prentice Hall

Reference Books:

SN	Title	Edition	Authors	Publisher
1	Data Structures with C	Latest	Seymour Lipschutz	TMH
2	Data structures using C	Latest	Reema Thareja	Oxford
3	Algorithms and Data Structures	First	M.M.Raghuwanshi	Narosa

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020

Computer Technology

B.E. Minors in Computer Science & Engineering

V Semester

CT2604 - Lab: Data Structures

Course Objective	Course Outcomes
<ul style="list-style-type: none">To make students familiar with syntaxes and usages of various programming constructs of C languageTo make student understand concept of abstract data types like stacks and queuesTo make student understand file handling operationsTo create thinking ability needed for implementation of programming logic with proper use of memory	<ul style="list-style-type: none">To Identify programming constructs needed to solve real world problemsTo Implement various abstract data typesTo Write program for file handling by using various access modes and operations needed as per the requirement of given problemTo Implement programming logic needed for solving given problem

List of Programs

- Program for counting number of digits in a random number
- Program for generating list of random numerals and print them in words
- 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
- Program for finding GCD of two numbers using factorial method
- Program for finding GCD of two numbers using recursion. Also, print number of recursive calls.
- Program for allocating memory dynamically for single dimensional array and sort it using quick sort and merge sort
- Program for allocating memory dynamically for two-dimensional array printing it in spiral manner.
- Program to create linked list of cell phone with any 3 attributes as data fields and print it
- 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
- Program to implement stack and print MAX data item from it

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020**Computer Technology****B.E. Minors in Computer Science & Engineering****VI Semester****CT2611 - Operating Systems**

Course Objective	Course Outcomes
<ol style="list-style-type: none">To learn different types of OS & services provided by OS.To understand process management and inter-process communication.To know the deadlock concepts & deadlock avoidance algorithms.To understand the need of memory management.To learn different file system organization.	<p>Upon successful completion of the course, the student will be able to:</p> <ol style="list-style-type: none">Analyze & compare different OS & its services.Apply & analyze CPU scheduling algorithm & also find different ways to synchronize the process.Use different methods to handle deadlock.Apply various memory management techniques.Compare various disk scheduling algorithms based on their performances.

UNIT I**[06 Hrs]**

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**[08 Hrs]**

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**[07 Hrs]**

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**[06 Hrs]**

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

UNIT V**[06 Hrs]**

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

UNIT VI**[06 Hrs]**

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

Text Books:

SN	Title	Authors	Edition	Publisher
1	Operating system concepts	A. Silberchatz and P.Galvin	5th Edition	Addison Wesley Longman Inc.
2	Operating system Principles	A. Silberchatz and P.Galvin	7th Edition	John Wiley & Sons Inc.

Reference Books:

SN	Title	Authors	Edition	Publisher
1	Modern operating systems	A.S. Tanenbaum	2 nd edition	Prentice Hall of India publication.
2	Operating System	Crowley	2 nd Edition	Tata McGraw Hill publication
3	Operating System	William Stalling	5th Edition	Pearson Education publication.
4	Shell Programming	Rebecca Thomas		Prentice Hall
5	The UNIX operating system	Maurice Bach		Prentice Hall publication.
6	Operating Systems	Achyut Godbole	3rd Edition	McGraw Hill Education

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020**Computer Technology****B.E. Minors in Computer Science & Engineering****VI Semester****CT2612 - Lab: Operating Systems**

Course Objective	Course Outcomes
<ol style="list-style-type: none">To learn different types of OS & services provided by OS.To understand process management and inter-process communication.To know the deadlock concepts & deadlock avoidance algorithms.To understand the need of memory management.To learn different file system organization.	<p>Upon successful completion of the course, the student will be able to:</p> <ol style="list-style-type: none">Analyze & compare different OS & its services.Apply & analyze CPU scheduling algorithm & also find different ways to synchronize the process.Use different methods to handle deadlock.Apply various memory management techniques.Compare various disk scheduling algorithms based on their performances.

Expt. No.	Experiments based on
01	Basics of Linux commands and its use.
02	(i) Write a shell script to find maximum of 3 numbers. (ii) Write a shell script to check whether entered number even or odd
03	(i) 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
04	Write a program to create a process using fork() system call.
05	Write a program to implement Non-Preemptive Priority scheduling algorithm.
06	Write a program to implement FIFO page replacement algorithm.
07	Write a program to implement First-Fit/Worst-Fit strategies
08	Installation of Linux Operating System.
09	Case study on Advanced Operating System (Ameoba).

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020**Computer Technology****B.E. Minors in Computer Science & Engineering****VI Semester****CT2613 - Database Management Systems**

Course Objective	Course Outcomes
Student will be able: 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.	Upon successful completion of the course, the student 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.

UNIT I:**[7 Hrs]**

Introduction to Database Management System: General File System and Database system Concepts and Architecture, Relational Model, Abstraction & Different Levels of Data Abstraction, Data Independence: Logical & Physical Independence.

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 II:**[8 Hrs]**

Relational Data Model: Structure of Relational Databases, the Relational Algebra, SQL.

Relational Constraints: Domain Constraints, Referential Integrity, Assertions and Triggers, View, Programmatic ways for implementing constraints and triggers.

UNIT III:**[5 Hrs]**

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

Storage structures: Introduction to cluster, index organized table, partitions, various table storage parameters and block storage parameters, concept of index, B-trees, hash index, function index, bitmap index.

UNIT IV:**[7 Hrs]**

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

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

UNIT V:**[5 Hrs]**

Crash Recovery: Failure Classification, Log Based Recovery, Buffer Management, Checkpoints, Shadow Paging, and Failure with Loss of non-volatile Storage, Stable Storage Implementation.

UNIT VI:**[7 Hrs]**

Query optimization: Query optimization and performance tuning – Various techniques for query optimization, strong and weak equivalence, cost based optimization

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Nagar Yuwak Shikshan Sanstha's

Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020

Computer Technology

B.E. Minors in Computer Science & Engineering

VI Semester

CT2613 - Database Management Systems

Text Books:

SN	Title	Authors	Edition	Publisher
1	Fundamentals of Database Systems	Elmasri, Navathe & Gupta,		Pearson Education.
2	Database System Concepts	Korth, Silberschatz:	4 th Edition	McGraw-Hill publication

Reference Books:

SN	Title	Authors	Edition	Publisher
1	Database System Concepts	Henry Korth		
2	Database Systems	Connolly	3 rd edition	Pearson Education.
3	Database Systems	S. K. Singh		Pearson Education
4	Principles of Database Systems	Ullman	1998.	Golgotia Publications

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020**Computer Technology****B.E. Minors in Computer Science & Engineering****VI Semester****CT2614 - Lab: Database Management Systems**

Course Objective	Course Outcomes
Student will be able: 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.	Upon successful completion of the course, the student 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.

Expt. No.	List of Programs
01	Design an ER Diagram.
02	Study and implement DDL Command.
03	Study and Implement Entity Constraints, Referential Constraints, Domain Constraints
04	Study and Implement DML Commands (select, Insert).
05	Study and Implement Update and Delete Command.
06	Study and Implement Aggregate function.
07	Study and Implement Inner join.
08	Study and Implement Outer Join.
09	To Design a full database system and queries for given topic

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	

**Yeshwantrao Chavan College of Engineering**

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

Minors and Honors SoE and Syllabus 2020**Computer Technology****B.E. Minors in Computer Science & Engineering****VII Semester****CT2621 - Lab: Python Programming**

Course Objective	Course Outcomes
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	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

[04Hrs]**Unit II :**

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

[06 Hrs]**Unit III:**

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

[06 Hrs]**Unit IV:**

File handling, Classes and objects

[06Hrs]**Unit V:**

Introduction to Various Libraries:

NumPy: Fundamental package for scientific computing

NLTK- Natural language toolkit

[06 Hrs]**Unit VI:**

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

[06 Hrs]

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:

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

Reference Books:

SN	Title	Edition	Authors	Publisher
1	Data Structures and Algorithms Using Python	1 st	Rance D. Necaise	Willey

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	



Yeshwantrao Chavan College of Engineering

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

Minors and Honors SoE and Syllabus 2020**Computer Technology****B.E. Minors in Computer Science & Engineering****VII Semester****CT2622 - Lab: Web Technology**

Course Objective	Course Outcomes
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	After successful completion of the course 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

Expt. No.	List of Experiments
01	Introduction to Internet (overview of Internet, email, www, broad band, FTP)
02	Study and implement basic html tags.
03	Create Web Form by using FORMS in HTML (use any example)
04	Program to demonstrate the use of JavaScript in while and for loops.
05	Program to demonstrate the use of JavaScript conditional statements and functions.
06	Demonstrate validation of form controls using simple functions written in JavaScript.
07	Introduction to XML. Program to demonstrate use of External and Internal DTD.
08	To create a web form to demonstrate use of ASP.net web controls – Radio Button Control, Image Control and Link Button Control.
09	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:

SN	Title	Edition	Authors	Publisher
1	Learn to code HTML & CSS: develop & style websites	2014	Shay Howe	[Berkeley]: New Riders, cop.
2	The definitive guide to Netbeans Platform	2009	HeikoBöck	Berkeley, CA :Apress

Reference Books:

SN	Title	Edition	Authors	Publisher
1	The book of Inkscape	2008	Dmitry Kirsanov	San Francisco, Calif.:No Starch; Farnham: O'Reilly [distributor]
	The sed&awk Pocket Reference	2009	Arnold Robbins	Arnold Robbins

Web Resources:

SN	Title	Web link
1	W3 schools for HTML and CSS	https://www.w3schools.com

		June 2019	1.00	Applicable for AY 2019-20 Onwards
Chairperson	Dean (Acad. Matters)	Date of Release	Version	