Sheth T. J. Education Society's
Sheth N.K.T.T College of Commerce and
Sheth J.T.T College of Arts, (AUTONOMOUS). Thane (W)

F. Y. B.Sc. (Cyber Security & Cloud Computing) 2026-27

	Semester -I	Credits		Semester -II	Credits
Major CSP101 CSA102	1. Python Programming 2. Artificial Intelligence	2 2	**Major** CSD201 CSG202	1. Database Management System 2. Generative AI Foundations & Applications	2 2
Major CSPP103	1. Python Programming & Artificial Intelligence Practical	2	CSDP203	1. Database Management System Practical and Generative AI Foundations & Applications Practical	2
Minor	-		CSS204	1. Software Engineering	2
OE CSS104	Statistics for Computing	4	CSD205 CSD206	OE1: Discrete Mathematics OE2: Discrete Mathematics Practical	2 2
CSN105 CSNP106	1. VSC: Computer Networks Fundamentals 2. SEC: Computer Networks Fundamentals Practical	2 2	CSC207 CSWP208	1. VSC: Cloud Fundamentals 2. SEC: Web Technologies Practical	2 2
CSR107 CSG108 CSI109	1. AEC: Corporate communication-I 2. VEC Green Technology- I 3. IKS: Evolution of IT	2 2 2	CSE209 CSG210	1. AEC: Corporate communication-II 1. VEC: Green Technology-II	2 2
CSN110/ CSY111	1. CC: NSS/ Sports/ Cultural/ Yoga	2	CSN211/ CSY212	1. CC: NSS/ Sports/ Cultural/ Yoga	2
	Total	**22**			**18**

Dr. Yogeshwari Patil
Department Coordinator

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NEP Coordinator

Dr. Dilip Patil
Principal

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Programme Name: **B.Sc. (Cybersecurity and Cloud Computing)**	**Semester: II**
Course Category/Vertical: **Major**	
Name of the Dept: **Science and Technology**	
Course Title**: Database Management System**	
Course Code: CSD201	Course Level: 4.5
Type: **Theory**	
Course Credit: 2 credits	
Hours Allotted: 30 Hours	
Marks Allotted: 50 Marks	
Course Objectives: 1. To understand core concepts of database systems and relational data models. 2. To develop skills in database design and querying using SQL.	
Course Outcomes: After the completion of the course, the learners would be able to: **CO 1:** understand database architecture and relational data modeling concepts. **CO 2:** apply SQL to create, manage, and query databases effectively.	
Description of the course:	This course introduces the fundamental concepts of database systems, focusing on structured data storage, retrieval, and management using relational models. It enables learners to design databases, perform queries using SQL, and understand the importance of data integrity and security in modern applications.

Syllabus: NEP 2020 w.e.f 2026-27

Unit No.	Content	Hours
I	**Introduction to DBMS and Data Modeling:** Concepts of data, information and database systems, limitations of traditional file-based systems, advantages of DBMS in terms of consistency, integrity and security, types of database systems, detailed study of data models with emphasis on relational model, entities and relationships, schema and instances, three-level architecture (internal, conceptual, external), concept of data independence and its importance in scalable systems, introduction to database users and roles in system design	15
II	**Relational Model and SQL Programming:** Structure of relational databases including tables, tuples and attributes, keys (primary, foreign, candidate) and integrity constraints, introduction to relational algebra operations, detailed SQL including Data Definition Language (CREATE, ALTER, DROP), Data Manipulation Language (INSERT, UPDATE, DELETE), constraints, joins (inner, outer), aggregate functions, grouping, subqueries and nested queries, practical applications of SQL in data retrieval, reporting and secure data management	15
	Total Hours	**30**

References:

Sr. No	Title	Author/s	Publisher	Edition
1	Database System Concepts	Silberschatz, Korth	McGraw Hill	6th Edition
2	Fundamentals of Database Systems	Elmasri & Navathe	Pearson	7th Edition

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Programme Name: **B.Sc. (Cybersecurity and Cloud Computing)**	**Semester: II**
Course Category/Vertical: **Major**	
Name of the Dept: **Science and Technology**	
Course Title**:** **Generative AI Foundations & Applications**	
Course Code: CSG202	Course Level: 4.5
Type: **Theory**	
Course Credit: 2 credits	
Hours Allotted: 30 Hours	
Marks Allotted: 50 Marks	
Course Objectives: 1. To understand the fundamentals and working of generative AI systems. 2. To explore applications and responsible usage of generative AI tools.	
Course Outcomes: After the completion of the course, the learners would be able to: **CO 1:** understand generative AI concepts and model capabilities. **CO 2:** apply AI tools to generate solutions and analyze real-world use cases.	
Description of the course:	This course introduces generative artificial intelligence concepts, focusing on models capable of generating content such as text, images, and code. It covers foundational principles, tools, real-world applications, and ethical considerations, enabling learners to understand and apply AI-driven solutions across domains.

Syllabus: NEP 2020 w.e.f 2026-27

Unit No.	Content	Hours
I	**Fundamentals of Generative AI and Model Understanding:** Introduction to Artificial Intelligence, Machine Learning and Deep Learning as the foundation of generative systems, difference between traditional rule-based systems and generative models, overview of neural networks and large language models, working principles of generative AI including training data, patterns and prediction mechanisms, types of generative models (text, image, code generation), real-world applications in industries such as business automation, cybersecurity, content creation and analytics	15
II	**Applications, Tools, Prompt Engineering and Ethics:** Exploration of generative AI tools and platforms for text, image and code generation, principles of prompt engineering for effective interaction with AI systems, designing prompts for accuracy and efficiency, hands-on use cases across domains, limitations of generative AI including hallucination and bias, ethical considerations such as data privacy, misuse and responsible AI practices, innovation and problem-solving using AI tools in real-world scenarios	15
	Total Hours	**30**

References:

Sr. No	Title	Author/s	Publisher	Edition
1	Artificial Intelligence: A Modern Approach	Russell & Norvig	Pearson	3rd Edition
2	Hands-On Machine Learning	Aurélien Géron	O'Reilly	2nd Edition

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Programme Name: **B.Sc. (Cybersecurity and Cloud Computing)** **Semester: II**	
Course Category: Major	
Name of the Dept: **Science and Technology**	
Course Title**: Database Management System and Generative AI Foundations & Applications Practical**	
Course Code: CSDP203	Course Level: 4.5
Type: **Practical**	
Course Credit: 2 credits	
Hours Allotted: 60 Hours	
Marks Allotted: 50 Marks	
Course Objectives: 1. To develop hands-on database creation and querying skills. 2. To implement SQL operations for real-world data management. 3. To develop practical skills in using generative AI tools. 4. To implement AI-based solutions across different domains.	
Course Outcomes: After the completion of the course, the learners would be able to: **CO 1:** create and manage databases using SQL commands. **CO 2:** perform complex queries for data retrieval and manipulation. **CO 3:** use AI tools effectively for generating content and automation. **CO 4:** develop practical solutions using generative AI techniques.	
Description of the course:	This course provides practical exposure to relational database systems and SQL operations, enabling learners to design and manage databases efficiently. This course focuses on hands-on implementation of generative AI tools, enabling learners to build, test, and deploy AI-driven solutions for real-world applications.

Syllabus: NEP 2020 w.e.f 2026-27

Sr No.	Content (List of Practicals)	Hours
1	**Practical on Database Creation and Table Design**	
a	Create a database and design multiple tables using appropriate data types, primary keys, and constraints.	
b	Modify table structures using ALTER commands (add, delete, modify columns) and describe schema using DESCRIBE/SHOW.	
2	**Practical on Insert, Update and Delete Operations**	
a	Insert single and multiple records into tables and display the data using SELECT queries.	
b	Perform UPDATE and DELETE operations with conditions and verify changes in the dataset.	
3	**Practical on Constraints and Keys**	
a	Implement constraints such as NOT NULL, UNIQUE, PRIMARY KEY, FOREIGN KEY, and CHECK on tables.	
b	Demonstrate referential integrity using foreign keys and perform operations to observe constraint behavior.	
4	**Practical on SQL Queries with Conditions**	
a	Execute SELECT queries using WHERE, ORDER BY, GROUP BY, and HAVING clauses on sample datasets.	
b	Use logical (AND, OR, NOT), comparison, and pattern matching (LIKE, IN, BETWEEN) operators in queries.	
5	**Practical on Joins Implementation**	
a	Perform INNER JOIN, LEFT JOIN, RIGHT JOIN on multiple tables and analyze the results.	
b	Implement SELF JOIN and CROSS JOIN and compare outputs with different join conditions.	
6	**Practical on Aggregate Functions**	
a	Apply aggregate functions such as COUNT, SUM, AVG, MIN, MAX on datasets.	
b	Use GROUP BY and HAVING clauses along with aggregate functions for grouped data analysis.	
7	**Practical on Subqueries**	
a	Write and execute single-row and multi-row subqueries in SELECT, WHERE, and FROM clauses.	
b	Implement correlated subqueries and analyze their execution results.	
8	**Practical on Views and Transactions**	
a	Create, update, and delete SQL views and analyze their usage in data abstraction.	

b	Perform transaction control operations using COMMIT, ROLLBACK, and SAVEPOINT and observe behavior.	
9	**Mini Project**	
a	Design and implement a database system for a real-world application (e.g., library, student management, e-commerce).	
b	Perform complete CRUD operations and generate meaningful reports using SQL queries.	
	Generative AI Foundation and Applications Practical	
1	Compare the performance of at least three generative AI tools by generating a 300-word article on the same topic and analyzing differences in accuracy, tone, and creativity.	
A	Evaluate the effectiveness of AI tools in solving domain-specific queries (technical, business, creative) and document their strengths and limitations.	
B	**Practical on Text Generation using AI**	
2	Generate a complete content set for a product including a description, advertisement copy, and email campaign with variation in tone and audience targeting.	
A	Summarize a long-form article into paragraph form, bullet points, and a one-line tagline, and compare effectiveness.	
3	**Practical on Prompt Engineering Techniques**	
A	Design and test zero-shot, few-shot, and role-based prompting for the same task and analyze differences in output quality.	
B	Refine an initially ineffective prompt through multiple iterations to achieve accurate and relevant output, documenting improvements.	
4	**Practical on Image Generation using AI**	
A	Generate images for a given theme using different prompt styles and evaluate the impact of descriptive keywords on output quality.	
B	Create images with variations in style, lighting, and perspective, and analyze how prompt changes influence results.	
5	**Practical on Code Generation using AI**	
A	Develop a basic functional application (e.g., calculator or form validation) using AI-generated code and evaluate correctness and efficiency.	

B	Provide erroneous code to an AI tool, debug and optimize it, and compare the original and corrected versions.	
6	**Practical on AI-based Content Refinement**	
A	Improve a poorly written article using AI by enhancing grammar, readability, and tone while preserving meaning.	
B	Optimize a blog post for SEO using AI by adding keywords, headings, and structure, and evaluate readability and engagement.	
7	**Practical on Ethical Use Case Analysis**	
A	Test AI outputs for bias using prompts related to gender, profession, or culture and document observations.	
B	Analyze a real-world AI misuse case and propose guidelines for ethical and responsible usage.	
8	**Practical on Domain-Based AI Applications**	
A	Develop an AI-based solution for a chosen domain (education, healthcare, or business) addressing a real-world problem.	
B	Design a workflow using generative AI to automate a domain-specific task and evaluate its effectiveness and limitations.	
9	**Mini Project**	
a	Design and develop an end-to-end generative AI application solving a real-world problem, including prompt design and output generation.	
b	Build a system integrating at least two AI capabilities (e.g., text + image or text + code) and evaluate usability and performance.	
	Total Hours	**60**

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Programme Name: **B.Sc. (Cybersecurity and Cloud Computing)**	**Semester: II**
Course Category: **Minor**	
Name of the Dept: **Science and Technology**	
Course Title**:** **Software Engineering**	
Course Code: **CSS204**	Course Level: 4.5
Type: **Theory**	
Course Credit: 2 credits	
Hours Allotted: 30 Hours	
Marks Allotted: 50 Marks	
Course Objectives: 1. To understand software development processes and methodologies. 2. To develop skills in requirement analysis and system design.	
Course Outcomes: After the completion of the course, the learners would be able to: **CO 1:** understand software development life cycle and models. **CO 2:** apply software engineering principles for system design.	
Description the course:	This course introduces structured approaches to software development, including life cycle models, requirement analysis, design principles, and quality assurance practices. It focuses on building reliable and maintainable software systems.

Syllabus: NEP 2020 w.e.f. 2026-27

Unit No.	Content	Hours
I	**Introduction to Software Engineering and SDLC Models:** Definition and characteristics of software, need for software engineering, challenges in software development such as scalability, reliability and maintainability, introduction to Software Development Life Cycle (SDLC), detailed study of SDLC models including Waterfall, Iterative, Incremental, Spiral and Agile methodologies, comparison of models based on project requirements, introduction to Agile practices such as Scrum and Kanban, role of documentation and team collaboration in software projects	15
II	**Requirement Engineering and System Design:** Requirement gathering techniques such as interviews, surveys and observation, functional and non-functional requirements, Software Requirement Specification (SRS) structure and importance, requirement validation techniques, introduction to system modeling using diagrams (use case diagrams, data flow diagrams), design principles including modularity, abstraction, cohesion and coupling, introduction to architectural design, basic UI/UX considerations, overview of software testing concepts including types of testing (unit, integration, system), debugging and maintenance practices.	15
	Total Hours	**30**

Books and References:

Sr. No	Title	Author/s	Publisher	Edition
1	Software Engineering	Ian Sommerville	Pearson	10th Edition
2	Software Engineering: A Practitioner's Approach	Roger Pressman	McGraw Hill	7th Edition

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<table>
<tr><td colspan="2">Programme Name: B.Sc. (Cybersecurity and Cloud Computing) Semester: II</td></tr>
<tr><td colspan="2">Course Category: Open Elective (OE)</td></tr>
<tr><td colspan="2">Name of the Dept: Science and Technology</td></tr>
<tr><td colspan="2">Course Title: Discrete mathematics</td></tr>
<tr><td colspan="2">Course Code: CSD205 Course Level: 4.5</td></tr>
<tr><td colspan="2">Type: Theory</td></tr>
<tr><td colspan="2">Course Credit: 2 credits</td></tr>
<tr><td colspan="2">Hours Allotted: 30 Hours</td></tr>
<tr><td colspan="2">Marks Allotted: 50 Marks</td></tr>
<tr><td colspan="2">Course Objectives:
1. Course will provide students with an overview of discrete mathematics.
2. Students will learn about topics such as logic and proofs, sets, Relation and functions, techniques of counting, graph theory, Binary tress and other important discrete math concepts.</td></tr>
<tr><td colspan="2">Course Outcomes: After completion of course learners will be able to
CO 1. understand the basic principles of sets, operations in sets and different types of relations. Analyze mathematical properties using mathematical induction methods. Understand different counting techniques and method of Solving Recurrence relation.
CO 2. understand graphs and Binary trees and its various applications</td></tr>
<tr><td>Description of the course:</td><td>It provided the basic techniques to solve the problems. This course provided the foundation for many computer science Courses including data structures, algorithm, operation system.</td></tr>
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Syllabus: NEP 2020 w.e.f 2026-27

Unit No.	Content	Hours
I	Sets, Relation and Function Definition Sets and Elements, Subsets, Venn Diagrams, Set Operations, Algebra of Set, Power Sets, Mathematical Induction , Relations on sets, Reflexivity, Symmetric and Transitivity, Equivalence Relations, Functions Define on general sets, One-to-One, Onto, and Invertible Function, composition of functions and Cardinality with application to Computability. Techniques of Counting Basic Counting Principles, Permutations, Combinations, the Pigeonhole Principle, The Inclusion–Exclusion Principle, Recurrence Relations, Linear Recurrence Relations with Constant Coefficients, Solving Second Order Homogeneous Linear Recurrence Relations. Probability: Basics of Probability, Addition Rule	15
II	Graph Theory: Graph Definition and basic properties, Sub graphs, Matrix representation of graph , Isomorphism of Graphs, Paths, Connectivity, Traversable and Eulerian Graphs, Labeled and Weighted Graphs, Complete, Regular, and Bipartite Graphs, Planar Graphs, Representing Graphs in Computer Memory, Graph Algorithms, Traveling-Salesman Problem, Introduction, Directed Graphs, Sequential Representation of Directed Graphs, , Shortest Paths, Linked Representation of Directed Graphs, Graph Algorithms: Depth-First and Breadth-First Searches Algorithm for Shortest Path. Trees and Binary Trees: Definition and properties of tree, Spanning tree and shortest path. Definition Binary Trees, Complete Binary Trees, Traversing Binary Trees, Binary Search Trees , Huffman's Algorithm.	15
	Total Hours	**30**

References:

Discrete Mathematics and its Applications Sussana S.Epp Cengage Learning 2018

Discrete Mathematics and its Applications Kenneth H. Rosen Tata MCGraw Hill

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Programme Name: **B.Sc. (Cybersecurity and Cloud Computing)**	**Semester: II**
Course Category: Open Elective	
Name of the Dept: **Science and Technology**	
Course Title**: Discrete Mathematics Practical**	
Course Code: CSDP206	Course Level: 4.5
Type: **Practical**	
Course Credit: 2 credits	
Hours Allotted: 60 Hours	
Marks Allotted: 50 Marks	

Course Objectives:

1. Course will make students understand different commands and functions of SCILAB
2. To implement programs of set theory, functions, Recurrence relation. To represents concept of graph theory, directed graph, and their subtopics in the form of a program.

Course Outcomes: After the completion of the course, the learners would be able to:

CO 1: implement programs on Inclusion Exclusion principle, power sets, recursively defined functions, Mathematical Induction Cardinality in scilab. Execute programs like Sum principle, Product principle, Factorial, Permutations and Combinations.

CO 2: implement concepts in Scilab like paths and connectivity, minimum spanning tree, isomorphism, adjacency matrix, path matrix. Implement recurrence relations by iteration, Second order linear homogenous recurrence relations with constant coefficients.

Description of the course:	By using scilab code students able to solve mathematical Problems of sets, Permutations combinations, minimal spanning tree and shortest path, Graphs, recurrance relation

Syllabus: NEP 2020 w.e.f 2026-27

Sr No.	Content (List of Practicals)	Hours
1	Set Theory: Inclusion Exclusion principle, Power set , Mathematical Induction	
2	Functions and Algorithm : Recursively define function, cardinality, Polynomial evaluation, Greatest common divisor	
3	Sequences: Summation Notation, Product Notation, Mathematical Induction	
4	Probability Theory: Sample space and events, Finite Probability space, Addition Principal	
5	Counting I: Sum rule principle, Product rule principle, factorial, Binomial Coefficient	
6	Counting II: Permutations, Permutations with repetitions, Combinations, Combinations with repetitions.	
7	Graph Theory: Paths and Connectivity, Minimum Spanning Tree, Isomorphism	
8	Directed Graph: Adjacency Matrix, Path Matrix	
9	Tree: Minimum Spanning tree , Shortest path algorithm Kruskal or Prims	
10	Recurrence Relation: Solving linear homogeneous recurrence relation with constant coefficients.	
	Total hours	**60**

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Programme Name: **B.Sc. (Cybersecurity and Cloud Computing)**	**Semester: II**
Course Category: **Vocational Skill Course (VSC)**	
Name of the Dept: **Science and Technology**	
Course Title**:** **Cloud Fundamentals**	
Course Code: **CSC207**	Course Level: 4.5
Type: T**heory**	
Course Credit: 2 credits	
Hours Allotted: 30 Hours	
Marks Allotted: 50 Marks	
Course Objectives: 1. To understand cloud computing concepts and AWS architecture. 2. To explore AWS services, security, and cost management practices.	
Course Outcomes: After the completion of the course, the learners would be able to: **CO 1:** understand AWS cloud concepts and core services. **CO 2:** apply AWS knowledge to design basic cloud solutions.	
Description of the course:	This course introduces cloud computing fundamentals with a focus on AWS services, architecture, security, and cost management. It enables learners to understand cloud-based solutions and their role in modern IT infrastructure.

Syllabus: NEP 2020 w.e.f 2026-27

Unit No.	Content	Hours
I	**Cloud Fundamentals and Core AWS Services:** Introduction to cloud computing and its evolution, advantages of cloud over traditional systems, cloud deployment models (public, private, hybrid), service models (IaaS, PaaS, SaaS), AWS global infrastructure including regions, availability zones and edge locations, detailed overview of core AWS services such as EC2 (compute), S3 (storage), RDS (database), Lambda (serverless computing), use cases of each service, basics of resource provisioning and deployment in AWS environment	15
II	**AWS Security, Networking and Cost Management:** AWS shared responsibility model and its significance, Identity and Access Management (IAM) including users, roles and policies, security best practices in cloud environments, introduction to AWS networking concepts including VPC, subnets, routing and internet gateways, cost management including pricing models, billing dashboard and cost optimization strategies, designing resilient and highly available architectures, fault tolerance and scalability concepts in cloud systems	15
	Total Hours	**30**

References:

Sr. No	Title	Author/s	Publisher	Edition
1	AWS Certified Cloud Practitioner Study Guide	Ben Piper	Wiley	Latest
2	Cloud Computing Concepts	Rajkumar Buyya	Wiley	Latest

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Programme Name: **B.Sc. (Cybersecurity and Cloud Computing)**	**Semester: II**
Course Category: SEC	
Name of the Dept: **Science and Technology**	
Course Title**: Web technology Practical**	
Course Code: **CSW208**	Course Level: 4.5
Type: **Practical**	
Course Credit: 2 credits	
Hours Allotted: 60 Hours	
Marks Allotted: 50 Marks	
Course Objectives: 1. To understand the concepts of Hyper Text Markup Language and Cascading Style sheets. 2. To learn JavaScript for creating dynamic websites	
Course Outcomes: After the completion of the course, the learners would be able to: **CO 1:** design valid, well-formed, scalable, and meaningful pages using emerging technologies. **CO 2:** develop and implement client-side and server-side scripting language programs.	
Description of the course:	This course provides a comprehensive introduction to the design and development of modern, dynamic websites through hands-on learning. It focuses on building practical skills in front-end and basic back-end technologies, enabling learners to create responsive, user-friendly, and interactive web applications. It emphasizes the usefulness of web technologies in developing real-world solutions such as business websites, e-commerce platforms, and web-based applications. Students gain practical exposure to designing layouts, managing data, and implementing interactive features, making them capable of handling real-life development scenarios.

Syllabus: NEP 2020 w.e.f 2026-27

Sr No.	Content (List of Practicals)	Hours
1a	Design a page having suitable background colour and text colour with title "My First Web Page" using all the attributes of the Font tag	
1b	Create a HTML document giving details of your [Name, Age], [Address, Phone] and [Register Number, Class] aligned in proper order using alignment attributes of Paragraph tag, heading tag	
2a	Create a web page for internal links; when the user clicks on different links on the web page it should go to the appropriate locations/sections in the same page.	
2b	Write a HTML code to create a web page with pink color background and display moving message in red color.	
3	Design a web page that displays information in form of a. List Tags (all type) b. Image and Image Maps	
4	Design a webpage that makes use of a. Table tags b. Navigation across multiple pages	
5a	Create a web page which divides the page in two equal frames and place the audio and video clips in frame-1 and frame-2 respectively	
5b	Wap in html to create a webpage with four frames (Picture, table, list, and hyperlink).	
6	Form Tags (forms with various form elements)	
7	Design a webpage that make use of Cascading Style Sheets with a. CSS properties to change the background of a Page b. CSS properties to change Fonts and Text Styles c. CSS properties for positioning an element	
8	Write JavaScript code for Performing various mathematical operations such as a. calculating factorial b. finding Fibonacci Series c. Displaying Prime Numbers in a given range	
9	Write JavaScript code for a. Evaluating Expressions b. Calculating reverse of a number c. Validating the various Form Elements	
10	Write JavaScript code for a. Demonstrating different JavaScript Objects such as String, RegExp, Math, Date b. Demonstrating different JavaScript Objects such as Window, Navigator, History, Location, Document c. Storing and Retrieving Cookies	
	Total hours	**60**

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Programme Name: B.Sc.(Cyber Security and cloud computing)	**Semester: II**
Course Category: **Ability Enhancement Course (AEC)**	
Name of the Dept: **Science & Technology**	
Course Title: **Corporate Communication – II**	
Course Code: **CSE209**	Course Level: 4.5
Type: T**heory**	
Course Credit: 2 credits	
Hours Allotted: 30 Hours	
Marks Allotted: 50 Marks	
Course Objectives: 1. To inculcate basic soft skills in learners and develop their leadership skills 2. To develop the overall personality of students by enabling them to adopt effective time management skills, becoming aware about emotional intelligence, learning about personal branding and make learners aware about basic etiquettes to be followed in personal and professional lives	
Course Outcomes: After the completion of the course, the learners would be able to: **CO 1:** develop effective soft skills and leadership skills and would be able to differentiate between listening and hearing and its impact on communication **CO 2:** develop their personality, learn time management skills, etiquettes, develop emotional intelligence along with their personal branding skills	
Description of the course:	Soft Skills are an integral part of individual development. The course will introduce the learners to the soft skills required for communication in the business world as well as in personal lives. They would be able to showcase the same in the required scenarios in the professional world. Effective learning of soft skills would enable the learners to upgrade their skills and grab positions like soft skill trainers and personality grooming professionals.

Syllabus: NEP 2020 w.e.f 2026-27

Unit No.	Content	Hours
I	**Introduction to Soft Skills – I** **Soft skills** – Meaning, features, scope, importance, relevance of soft skills in the corporate world, relevance of soft skills in personal space, Soft skills v/s hard skills **Listening skills** – Meaning, Importance, Essentials of good listening skills, Qualities of a good listener, Types of listening skills, Barriers to effective listening, Process of listening, Active v/s Passive Listening **Leadership** – Meaning, Attributes of a good leader, Styles of leadership, Leading through change	15
II	***Personality Development and Etiquettes*** **Personality** – Meaning, Determinants of personality, Personality Traits – Locus of Control, Type A and Type B Personality, Machiavellianism, Self-Monitoring **Time Management** – Meaning, Importance, principles of time management, 4 P's, 4D's of time management, Challenges in time management, Tips for good time management. **Etiquettes** – Meaning, Importance, Ethics v/s Etiquettes. **Types of Etiquettes** – Telephone Etiquettes, Email Etiquettes, Meeting Etiquettes, Dining Etiquettes, Cubicle Etiquettes, Dressing and Grooming Etiquettes, Social media Etiquettes, Internet Etiquettes, Workplace Etiquettes	15
	Total Hours	**30**

References:

1. Daniel Coleman, Emotional Intelligence, Bantam Book, 20 ICT Academy of Kerala, "Life Skills for Engineers", McGraw Hill Education (India) PrivateLtd.,2016.
2. Caruso, D. R. and Salovey P, "The Emotionally Intelligent Manager: How to Develop and Use the Four Key Emotional Skills of Leadership", John Wiley & Sons, 2004.
3. Kalyana, "Soft Skill for Managers"; First Edition; Wiley Publishing Ltd, 2015.
4. Larry James, "The First Book of Life Skills"; First Edition, Embassy Books, 2016.

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Programme Name: B.Sc (Cyber Security and Cloud Computing)	**Semester: II**
Course Category: **Vocational Enhancement Course (VEC)**	
Name of the Dept: **Science & technology**	
Course Title: **Green technology-II**	
Course Code: **CSG210**	Course Level: 4.5
Type: **Theory**	
Course Credit: 2 credits	
Hours Allotted: 30 Hours	
Marks Allotted: 50 Marks	
Course Objectives: 1. To understand issues and modern approaches of Green Computing and alternatives for cooling your data center and the need for making computer networks and communications energy efficient. 2. To understand cloud computing in the context of environmental sustainability and various elements of clouds that contribute to total energy consumption	
Course Outcomes: After the completion of the course, the learners would be able to: **CO 1:** develop knowledge about the concept green IT standards and certifications related to sustainable IT products as well as Describe green IT in relation to technology. **CO 2:** evaluate IT use in relation to environmental perspectives and Formulate plans for reducing IT heating and cooling requirements as well as Implement Green IT in Real Life	
Description of the course:	The course introduces the learners to the concept of sustainable approach to IT resource management, focusing on minimizing environmental impact in the context of environmental concerns. The learners could upgrade their current understanding towards Green IT practices, reducing energy consumption and electronic waste, promoting efficient, cost-effective, and environmentally sustainable IT systems. Students would be able to explore new areas of IT professionals with expertise in Green IT.

Syllabus: NEP 2020 w.e.f 2026-27

Unit No.	Content	Hours
I	**Overview and Issues:** Problems: Toxins, Equipment Disposal, Company's Carbon Footprint: Measuring, Global Initiatives: United Nations, Basel Action Network, Basel Convention, North America: The United States, Canada, Australia, Europe, WEEE Directive, RoHS, National Adoption, Asia: Japan, China, Korea. **Minimizing Power Usage:** Power Problems, Monitoring Power Usage, Servers, Low-Cost Options, Power Consumption, Reducing Power Use, Data De-Duplication, Virtualization, Monitors, Power Supplies, Wireless Devices	15
II	•**Cooling:** Cooling Costs, Power Cost, Causes of Cost, Calculating Cooling Needs, Reducing Cooling Costs, Economizers, On-Demand Cooling, HP's Solution, Optimizing Airflow, Hot Aisle/Cold Aisle, Raised Floors, Cable Management, Vapour Seal, Prevent Recirculation of Equipment Exhaust, Supply Air Directly to Heat Sources, Fans, Humidity, Adding Cooling, Fluid Considerations, System Design, Datacentre Design, Centralized Control, Design for Your Needs. **Green Networks and Communications** : Introduction, Objectives of Green Network Protocols, Green Network Protocols and Standards. •**Green Cloud Computing and Environmental Sustainability:** Introduction, What is Cloud Computing?, Cloud Computing and Energy Usage Model: A Typical Example, Features of Clouds Enabling Green Computing, Green Cloud Architecture	15
	Total Hours	**30**

References:

Green IT Toby Velte, Anthony Velte, & Robert Elsenpete McGraw Hill 2008 Harnessing Green It Principles And Practices San Murugesan, G.R. Gangadharan WILEY Green Computing Tools and Techniques for Saving Energy, Money and Resources Bud E. Smith CRC Press 2014

Sheth T. J. Education Society's
Sheth N.K.T.T College of Commerce and
Sheth J.T.T College of Arts, (Autonomous) Thane (W)

Programme Name: **All programmes**	**Semester:II**
Course Category: Co-curricular Course (CC)	
Name of the Department: Sociology	
Course Title: **National Service Scheme Paper II**	
Course Code: CSN211	Course Level: 4.5
Type: Theory	
Course Credit: 2 credits	
Hours Allotted: 30 Hours	
Marks Allotted: 50 Marks	
Course Objectives: 1. To make the students aware about NSS ideology 2. To make students understand Youth Development Program in India and Role of Youth Leaders	
Course Outcomes: **CO1:** Students will be inspired from social reformer **CO2:** Students will understand social issues in India.	
Description: The NSS introduces students to the concept of voluntary community service as a means of personal development and nation-building. It typically involves engaging in various activities such as environmental conservation, literacy campaigns, health awareness drives, and disaster relief efforts. Relevance and Usefulness: In today's society, where there is a growing need for civic engagement and social cohesion, the NSS plays a crucial role. It instills a sense of civic duty and social responsibility in young people, empowering them to contribute positively to their communities and society at large. Application: Through hands-on participation in community service projects, NSS volunteers gain practical experience in leadership, teamwork, problem-solving, and communication skills. They also develop a deeper understanding of social issues and learn how to address them effectively through grassroots initiatives. Interest and Connection with Other Courses: The NSS intersects with various academic disciplines such as social work, public administration, sociology, and development studies. It provides students with opportunities to apply theoretical knowledge in real-world settings and reinforces the importance of active citizenship and social justice. Demand in the Industry: Employers increasingly value candidates who demonstrate a commitment to community service and civic engagement. Participation in the NSS signals to potential employers that an individual is socially conscious, proactive, and capable of working collaboratively towards common goals. Job Prospects: Graduates who have participated in the NSS often find themselves well-equipped for a wide range of career paths. They may pursue roles in the nonprofit sector, government agencies, corporate social responsibility departments, international development organizations, or even entrepreneurship ventures with a social impact focus.	

Syllabus: NEP 2020 w.e.f 2026-27

Unit No.	Content	Hours
I	**Youth Development** - National Youth Policy - Role and Importance of youth leadership, -Leadership capability and its development,	15
II	**Social Reformers** - Social Reformers: Mother Teresa, Baba Amte, Dr. Abhay Bang and Dr. Rani Bang. - Role and Responsibility of youth in various activities of N.S.S	15
	Total Hours	30

References:

1. National Service Scheme Manual (Revised) 2006, Government of India, Ministry of Youth Affairs and Sports, New Delhi.
2. University of Mumbai National Service Scheme Manual 2009.
3. http://nss.nic.in
4. https://www.rccmindore.com/wp-content/uploads/2023/04/NSS-Notes-II.pdf

Scheme of Examination

Course with Credit	External Examination	Internal Examination	Total
Credit 4	**60 marks**	**40 marks**	**100 marks**
Credit 2	**30 marks**	**20 marks**	**50 marks**

Internal Examination Structure(Theory)

Internal examination	**40 marks**	**20 marks**
Project Presentation/Case Study /Quiz/Group Discussion	10 marks	5 marks
Assignment /Active class Participation/Attendance	10 marks	5 marks
Class test	20 marks	10 marks
Total	40 marks	20 marks

Structure for Class Test (For 10 Marks)

For 10 Marks	
Q1. Multiple Choice Questions	**5 Marks**
Q2. Answer in one or two sentences	**5 Marks**

Structure for Class Test (For 20 Marks)

For 20 Marks	
Q1. Multiple Choice Questions	**10 Marks**
Q2. Answer in one or two sentences	**10 Marks**

External Examination (For 60 Marks)

Q. No.	External	Marks: 60
Q .1	Answer the following questions (Any 3) A B C D E F	15 Marks
Q. 2	Answer the following questions (Any 3) A B C D E F	15 Marks
Q. 3	Answer the following questions (Any 3) A B C D E F	15 Marks
Q. 4	Answer the following questions (Any 3) A B C D E F	15 Marks

External Examination (For 30 Marks)

Q. No.	External	Marks: 30
Q .1	Answer the following questions (Any 3) A B C D E F	15 Marks
Q. 2	Answer the following questions (Any 3) A B C D	15 Marks

	E F	

Practical External Exam: 50 marks

A Certified copy journal is essential to appear for the practical examination.

1	Practical Question 1	20
2	Practical Question 1	20
3	Journal	5
4	Viva Voce	5

OR

1	Practical Question 1	40
2	Journal	5
3	Viva Voce	5