AC – 20/05/2025
Item No. – 6.18 (N) (2a) Sem. III

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE	
Faculty of Science	
Board of Studies in Computer Science	
UG Second Year Programme	
Semester	**III**
Title of Paper	**Credits 2**
I) Cyber & Digital Safety	**2**
From the Academic Year	**2025 – 2026**

Name of the Course: Cyber & Digital Safety

Sr. No.	Heading	Particulars

1	**Description the course:**	**Introduction:** With the rapid rise in digital connectivity, individuals are increasingly vulnerable to online threats. This course introduces students to essential concepts of digital safety, privacy, and responsible online behavior. It provides practical knowledge to protect personal data, secure digital devices, and navigate the internet safely. **Relevance:** In today's digital age, everyone is a digital citizen. Whether you're a student, professional, or homemaker, digital safety is vital for safeguarding identity, finances, and mental well-being. This course addresses the urgent need to educate individuals in navigating online spaces securely. **Usefulness:** The course empowers learners with practical knowledge on how to stay safe online—be it managing privacy settings on social media, identifying phishing emails, or using strong passwords. These skills are useful in daily digital activities across personal, academic, and professional spaces. **Application:** Students can immediately apply the concepts learned— from using secure Wi-Fi and avoiding fake news to setting up two-factor authentication and protecting children's online experiences. It also helps in developing a safety-first approach to technology use. **Interest:** This course connects to the everyday digital life of learners—making it highly relatable. It explores topics like deepfakes, social media responsibility, digital detox, and cyberbullying, which resonate with students from all disciplines and age groups. **Connection with Other Courses:** While not technical, this course complements subjects in Media Studies, Psychology, Communication, Law, and even Business. It strengthens digital literacy, a valuable

		soft skill, and supports courses related to digital ethics, digital marketing, and online communication. **Demand in the Industry:** Digital awareness is considered a critical life skill by employers. Companies value employees who understand safe digital practices, especially in remote and hybrid work environments. With increasing data breaches and cybercrime, demand for digitally responsible professionals is rising. **Job Prospects:** Although not a technical specialization, this course adds weight to any resume by demonstrating digital literacy. It prepares students for roles in education, administration, customer service, journalism, HR, and more—where safe technology use is expected and respected.
2	**Vertical:**	Open Elective
3	**Type:**	Theory
4	**Credits:**	2 credits
5	**Hours Allotted:**	30 hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO):** **CO 1.** To introduce the foundational concepts of cyber safety and digital privacy. **CO 2.** To create awareness of common online threats and best practices for digital hygiene. **CO 3.** To equip students with skills for safe usage of social media, devices, and the internet. **CO 4.** To develop a mindset for ethical digital behavior and responsible technology use. **CO 5.** To explore emerging cyber risks including AI, deepfakes, and the role of legislation.	

8	**Course Outcomes (OC):** After successful completion of this course, students would be able to - **OC 1.** Understand key concepts in cyber security and differentiate between threats and risks. **OC 2.** Apply safe browsing practices and protect their digital identity across platforms. **OC 3.** Identify and avoid common cyber scams, phishing attacks, and fake news. **OC 4.** Safeguard personal devices, use secure communication tools, and manage passwords.

	OC 5. Understand the ethical concerns and emerging trends in AI-driven cyber threats.
9	**Modules:** **Module 1: Fundamentals of Digital Safety & Online Behavior**
	Introduction to Digital Safety and Cyber Security: What is Digital Safety?, Everyday importance of staying safe online, Cyber Security vs. Digital Safety, Ethical and responsible use of technology **Common Online Threats and How to Avoid Them:** Types of online threats: viruses, phishing, scams, Understanding social engineering and digital fraud, Case examples of real-world cyber attacks **Safe Internet and Social Media Use:** How to browse safely: HTTPS, safe websites, online shopping tips, Social media privacy settings, Digital identity and managing your online presence, Deepfakes and misinformation, Screen time, mental health, and digital well-being **Online Safety for Children and Teenagers:** Common risks for young users, Using parental controls and safe browsing tools, Identifying and addressing cyberbullying, Teaching children responsible internet use
	Module 2: Personal Device Security, Privacy & Emerging Trends

	Securing Devices and Networks: How to keep your phone and laptop safe, Safe use of public Wi-Fi and VPNs, Protecting smart devices (IoT) at home, Backing up your data securely **Building Good Digital Habits (Cyber Hygiene):** Creating strong passwords and using multi-factor authentication, Keeping software updated and avoiding unsafe downloads, Spotting fake news and online hoaxes **Understanding Data Privacy**: What is personal data and why it matters, Data protection laws in simple terms (like GDPR), Using privacy-friendly tools (browsers, search engines, messaging apps), What to do if a data breach happens **Cyber Safety at Work and Emerging Technologies**: Staying safe while working online or remotely, Secure email and workplace communication, How AI is used in cyber security – the good and the bad, Deepfakes, AI-based scams, and how to stay alert, Introduction to how blockchain can help in digital security
10	**Text Books** 1. Security in the Cyber Age: An Introduction to Policy and Technology, John E. Savage, Derek S. Reveron, Cambridge University Press, 2023 2. Cyber Security and Personal Data Awareness: Leverage Personal Data safety in Cyber Threat environment, Selvaraj G, Notion Pres, 2024 3. Cyber and Digital Safety: Fundamentals and Best Practices, Maurya R K, SYBGEN Learning, 2025
11	**Reference Books** 1. Cyber Safety for Everyone: A comprehensive guide to online safety,

	JaagoTeens, BPB Publications, 3rd Edition, 2024 2. The Basics of Cyber Safety: Computer and Mobile Device Safety, John Sammons (Author), Michael Cross MD, Syngress, 2016 3. Cybersecurity for Everyone, David B. Skillicorn, Routledge, CRC Press, 2022 4. Cybersecurity for Dummies, Joseph Steinberg, Wiley, 2020			
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**		

13	**Continuous Evaluation through:** Class Test on Module 1: 10 marks Class Test on Module 2: 10 marks **Average of 2 Class Tests: 10 marks** Assignment on Module 1: 5 marks Assignment on Module 2: 5 marks **Total of 2 Assignments: 10 marks Total: 20 marks**	**Evaluation through:** A **Semester End Theory Examination** of **1 hour duration** for **30 marks** as per the paper pattern given below. **Total: 30 marks**		
14	**Format of Question Paper:** **Total Marks: 30 Duration: 1 Hour Question Based On Options** Marks **Q. 1** Module 1 *Any 2 out of 4* 10 **Q. 2** Module 2 *Any 2 out of 4* 10 **Q. 3** Module 1 & 2 *Any 2 out of 4* 10			

Name of the Course: Web Designing

Sr. No.	Heading	Particulars

1	**Description the course:**	**Introduction:** This course offers a comprehensive exploration of web development, covering essential technologies such as HTML, CSS, JavaScript, and PHP. Students will gain practical skills and knowledge necessary to create dynamic and visually appealing websites. **Relevance:** In today's digital age, web development skills are in high demand across various industries. Understanding HTML, CSS, JavaScript, and PHP is crucial for anyone interested in pursuing a career in web development or related fields. **Usefulness:** The skills acquired in this course are highly transferable and applicable in a wide range of professional settings. Whether students aim to become web developers, designers, or entrepreneurs, proficiency in web development technologies is invaluable. **Application:** Students will learn to apply their knowledge of HTML, CSS, JavaScript, and PHP to develop interactive websites and web applications. Through hands-on projects and exercises, they will gain practical experience in building real-world solutions. **Interest:** The course content is designed to engage students with a passion for technology and creativity. From creating visually appealing designs to implementing dynamic functionality, students will find ample opportunities to explore and express their interests. **Connection with Other Courses:** This course serves as a foundation for further studies in web development and related disciplines. It complements other technology courses by providing essential skills and knowledge that can be applied across various domains.

		Demand in the Industry: The demand for skilled web developers continues to grow as businesses and organizations increasingly rely on their online presence. Graduates of this course will be well-equipped to meet this demand and contribute effectively in the industry. **Job Prospects:** Completion of this course opens up numerous job opportunities in web development, design, digital marketing, e-commerce, and more. With the skills acquired, students can pursue roles such as front-end developer, web designer, full-stack developer, or freelance web developer.
2	**Vertical:**	Open Elective
3	**Type:**	Practical
4	**Credits:**	2 credits (1 credit = 30 Hours of Practical work in a semester)
5	**Hours Allotted:**	60 hours
6	**Marks Allotted:**	50 Marks
7	**Course Objectives (CO):** **CO 1.** Familiarize students with core web development technologies such as HTML, CSS, JavaScript, and PHP. **CO 2.** Develop students' skills in creating structured and visually appealing web pages using HTML and CSS. **CO 3.** Enable students to add interactivity and dynamic behavior to web pages using JavaScript. **CO 4.** Introduce students to basic web design principles and best practices. **CO 5.** Provide practical experience through hands-on exercises and projects.	

8	**Course Outcomes (OC):** After successful completion of this course, students would be able to - **OC 1.** Demonstrate proficiency in HTML markup and CSS styling to create well structured and visually appealing web pages. **OC 2.** Implement interactivity and dynamic behavior on web pages using JavaScript and PHP. **OC 3.** Apply basic web design principles to create user-friendly and aesthetically pleasing websites. **OC 4.** Analyze and solve problems related to web development, including troubleshooting code and debugging errors. **OC 5.** Develop basic web applications and prototypes using HTML, CSS, JavaScript, and PHP. **OC 6.** Collaborate effectively in a team environment on web development projects.

9	**Modules:** **Module 1: Basics of Web Development (HTML and CSS) (30 hours)**

	Understanding the Internet and World Wide Web: Introduction to the Internet and its applications. Overview of email, Telnet, FTP, e commerce, and e-business. Basics of Internet infrastructure: ISPs, DNS, URLs, and HTTP. **HTML5 Fundamentals:** Basic Elements of HTML: Introduction to HTML tags for creating the structure of web pages. Formatting Text: Applying basic text formatting using HTML tags. Organizing Content: Using lists and headings to organize content. Creating Links: Making hyperlinks to connect web pages. HTML Tables: Structuring data using HTML tables for better presentation and organization. **Working with Multimedia and Forms:** Adding Images: Inserting images onto web pages and understanding image formats. Colors and Styling: Applying colors and basic styles to web elements. Forms and User Input: Creating interactive forms for user input and data submission. **Styling with CSS** Introduction to CSS: Understanding the role of Cascading Style Sheets in styling web pages. Selectors and Properties: Using CSS selectors and properties to style HTML elements. Background and Fonts: Applying background styles and working with fonts. Positioning Elements: Understanding CSS properties for positioning elements on a web page.
	Module 2: JavaScript and Dynamic Web Content (30 hours)
	JavaScript: Integrating JavaScript: Using JavaScript code within HTML documents for interactivity. Programming Basics: Understanding JavaScript variables, operators, and control flow. Functions and Events: Defining functions and handling events for user interaction. Working with Forms: Validating form data and handling user input

	with JavaScript.

	Dynamic content with PHP Basics of Server-side Scripting: Understanding the role of PHP in server-side scripting. Variables and Data Types: Declaring variables, working with data types, and type coercion in PHP. Control Structures: Implementing conditional statements and loops in PHP scripts. Sessions and Cookies: Introduction to managing user sessions and using cookies for data storage. Working with Databases: Connecting to databases, executing SQL queries, and processing query results.	
10	**Text Books** 1. HTML 5 Black Book, Covers CSS 3, JavaScript, XML, XHTML, AJAX, PHP and jQuery, 2ed, Dreamtech Press, 2016 2. Web Programming and Interactive Technologies, scriptDemics, StarEdu Solutions India, 2018 3. PHP: A Beginners Guide, Vikram Vaswani, TMH	
11	**Reference Books** 1. HTML, XHTML, and CSS Bible Fifth Edition, Steven M. Schafer, WILEY, 2011 2. Learning PHP, MySQL, JavaScript, CSS & HTML5, Robin Nixon, O'Reilly, 2018 3. PHP, MySQL, JavaScript & HTML5 All-in-one for Dummies, Steve Suehring, Janet Valade Wiley, 2018	
12	**Internal Continuous Assessment: 40%**	**Semester End Examination: 60%**

13	**Continuous Evaluation through:** Class Test on Module 1: 10 marks Class Test on Module 2: 10 marks **Average of 2 Class Tests: 10 marks** Assignment on Module 1: 5 marks Assignment on Module 2: 5 marks **Total of 2 Assignments: 10 marks Total: 20 marks**	**Evaluation through:** A **Semester End Theory Examination** of **1 hour duration** for **30 marks** as per the paper pattern given below. **Total: 30 marks**

14	

Format of Question Paper:

Total Marks: 30 Duration: 1 Hour

Question	**Based On**	**Options**
Q. 1	Module 1	*Any 2 out of 4*
Q. 2	Module 2	*Any 2 out of 4*
Q. 3	Module 1 & 2	*Any 2 out of 4*

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Sign of the BOS Chairman
Dr. Jyotshna Dongardive
Ad-hoc BOS (Computer Science)

Sign of the Offg. Associate Dean
Dr. Madhav R. Rajwade
Faculty of Science & Technology

Sign of Offg. Dean
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Faculty of Science & Technology