Kurukshetra University, Kurukshetra
(Established by the State Legislature Act XII of 1956)
('A++' Grade, NAAC Accredited)

॥ योगस्थ: कुरु कर्माणि ॥
समबुद्धि व योग युक्त होकर कर्म करो
(Perform Actions while Stead fasting in the State of Yoga)

Syllabus of Examination (3rd Semester / 5th Semester) for Under-Graduate Programmes
Computer Science
VOC
according to
Curriculum Framework for Under-Graduate Programmes
As per NEP-2020 (Multiple Entry-Exit, Internships and Choice Based Credit System)
DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
(2025-2026)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
KURUKSHETRA UNIVERSITY, KURUKSHETRA

<table>
<tr><th colspan="4">Scheme: 2025-26, Syllabus: 2025-26</th></tr>
<tr><th colspan="4">Part A – Introduction</th></tr>
<tr><td>Subject</td><td colspan="3">Computer Science</td></tr>
<tr><td>Semester</td><td colspan="3">III</td></tr>
<tr><td>Name of the Course</td><td colspan="3">Computer Hardware Maintenance</td></tr>
<tr><td>Course Code</td><td colspan="3">B25-VOC-107</td></tr>
<tr><td>Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/ VAC)</td><td colspan="3">VOC</td></tr>
<tr><td>Level of the course (As per Annexure-I</td><td colspan="3">200-299</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3"></td></tr>
<tr><td>Course Learning Outcomes(CLO):</td><td colspan="3">After completing this course, the learner will be able to:
1. Identify and describe the key hardware components of a computer system.
2. Assemble a fully functional desktop computer from individual parts.
3. Diagnose and troubleshoot common hardware and software issues.
4. Install and configure operating systems and drivers.
5. Perform routine maintenance and basic upgrades on PCs.</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>3</td><td>1</td><td>4</td></tr>
<tr><td>Contact Hours</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td colspan="2">Max. Marks:100(70(T)+30(P))
Internal Assessment Marks:30(20(T)+10(P))
End Term Exam Marks: 70(50(T)+20(P))</td><td colspan="2">Time: 3 Hrs.(T), 3Hrs.(P)</td></tr>
<tr><th colspan="4">Part B- Contents of the Course</th></tr>
<tr><td colspan="4"><u>Instructions for Paper-Setter</u>
The examiner will set a total of nine questions. Out of which first question will be compulsory. Remaining eight questions will be set from four unit selecting two questions from each unit. The examination will be of three-hour duration. All questions will carry equal marks. The first question will comprise short answer-type questions covering the entire syllabus.
Candidate will have to attempt five questions in all, selecting one question from each unit. First question will be compulsory.
The practicum will be evaluated by an external and an internal examiner. The examination will be of</td></tr>
</table>

three-hour duration.

Unit	Topics	Contact Hours
I	**Fundamentals of Computer Hardware**: Types of computer systems, Evolution of computers, Overview of hardware vs software, Motherboard types and form factors, Chipsets and buses (PCI, SATA, USB)	11
II	**Components and Peripherals:** Central Processing Unit (CPU), RAM types and installation, SMPS and connectors, Storage devices (HDD, SSD, NVMe), Input/output devices and ports, BIOS/UEFI basics and configuration	11
III	**PC Assembly Process:** Precautions and safety (ESD), Tools for assembly, Mounting motherboard and processor, Installing RAM and storage, Connecting power supply, POST check, BIOS setup and boot configuration	11
IV	**Troubleshooting and Maintenance:** Common hardware problems and symptoms, Boot errors and diagnostic tools, Software troubleshooting (BSOD, driver issues, malware), Preventive maintenance, Upgrading RAM, storage, and GPU	12
V*	Practicum: Students are advised to do laboratory/practical practice not limited to but including the following types of problems: 1. Identifying and handling PC components (RAM, CPU, PSU, HDD) 2. Disassembling and reassembling a desktop PC 3. Configuring BIOS/UEFI settings 4. Installing an operating system (Windows/Linux) 5. Installing device drivers and basic utilities 6. Formatting and partitioning storage drives 7. Creating dual-boot and using virtualization 8. Simulating and diagnosing hardware faults 9. Troubleshooting slow systems and driver issues 10. Running antivirus scans and clean-up tools 11. Upgrading components (RAM, SSD/HDD) 12. Backing up and restoring system data	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**End-Term Examination:** A three-hour exam for both theory and practicum. **End Term Exam Marks: 70(50(T)+20(P))**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

- **Scott Mueller**, *Upgrading and Repairing PCs*, Pearson Education, Latest Edition
- **Jean Andrews**, *A+ Guide to Hardware: Managing, Maintaining, and Troubleshooting*, Cengage Learning, Latest Edition
- **K.L. James**, *Computer Hardware and Maintenance*, PHI Learning
- **Michael Meyers**, *CompTIA A+ Certification All-in-One Exam Guide*, McGraw-Hill Education
- **Balaji Srinivasan**, *Troubleshooting, Maintaining and Repairing PCs*, Pearson Education

*Applicable for courses having practical components.

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Syllabus of Examination (3rd / 5th Semester) for Under-Graduate Programmes
Computer Science
VOC
according to
Curriculum Framework for Under-Graduate Programmes
As per NEP-2020 (Multiple Entry-Exit, Internships and Choice Based Credit System)
DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
(2025-2026)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
KURUKSHETRA UNIVERSITY, KURUKSHETRA

<table>
<tr><th colspan="4">Scheme: 2025-26, Syllabus: 2025-26</th></tr>
<tr><th colspan="4">Part A – Introduction</th></tr>
<tr><td>Subject</td><td colspan="3">Computer Science</td></tr>
<tr><td>Semester</td><td colspan="3">VI</td></tr>
<tr><td>Name of the Course</td><td colspan="3">Digital Marketing Using CANVA</td></tr>
<tr><td>Course Code</td><td colspan="3">B25-VOC-144</td></tr>
<tr><td>Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/ VAC)</td><td colspan="3">VOC</td></tr>
<tr><td>Level of the course (As per Annexure-I</td><td colspan="3">200-299</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3"></td></tr>
<tr><td>Course Learning Outcomes(CLO):</td><td colspan="3">After completing this course, the learner will be able to:
1. Understand the fundamentals of digital marketing and its components
2. Create visually appealing marketing content using Canva
3. Apply digital strategies for social media, branding, and email marketing
4. Plan and execute a mini digital marketing campaign using Canva assets</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>3</td><td>1</td><td>4</td></tr>
<tr><td>Contact Hours</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td colspan="2">Max. Marks:100(70(T)+30(P))
Internal Assessment Marks:30(20(T)+10(P))
End Term Exam Marks: 70(50(T)+20(P))</td><td colspan="2">Time: 3 Hrs.(T), 3Hrs.(P)</td></tr>
<tr><th colspan="4">Part B- Contents of the Course</th></tr>
<tr><td colspan="4"><u>Instructions for Paper-Setter</u>
The examiner will set a total of nine questions. Out of which first question will be compulsory. Remaining eight questions will be set from four unit selecting two questions from each unit. The examination will be of three-hour duration. All questions will carry equal marks. The first question will comprise short answer-type questions covering the entire syllabus.
Candidate will have to attempt five questions in all, selecting one question from each unit. First question will be compulsory.
The practicum will be evaluated by an external and an internal examiner. The examination will be of</td></tr>
</table>

three-hour duration.

Unit	Topics	Contact Hours
I	**Introduction to Digital Marketing:** Overview of digital marketing, Traditional vs digital marketing, Key components of digital marketing, Content marketing basics, Social media marketing platforms, Introduction to branding and audience targeting	11
II	**Graphic Design for Marketing using Canva:** Introduction to Canva interface, Creating designs using templates, Customizing fonts, colors and images, Designing social media posts, Posters and banners, Working with Canva elements and grids, Downloading and sharing content	11
III	**Social Media and Content Strategy:** Importance of visual content, Social media platform differences (Instagram, Facebook, LinkedIn), Creating branded content for different platforms, Designing Instagram stories and reels covers, Designing Facebook and LinkedIn posts	11
IV	**Campaign Planning and Performance:** Planning a mini campaign, Defining goals and target audience, Creating content calendar, Designing ads and email headers, Measuring performance using insights and analytics	12
V*	Practicum: Students are advised to do laboratory/practical practice not limited to but including the following types of problems: 1. Creating a Canva account and exploring templates 2. Designing a basic social media post 3. Creating a brand logo and color palette 4. Designing a marketing poster for a product/service 5. Creating Instagram and Facebook ad creatives 6. Designing a YouTube thumbnail 7. Preparing an email header for a promotional campaign 8. Creating a business card or brochure 9. Designing carousel posts and story graphics 10. Creating a content calendar using Canva templates	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**End-Term Examination:** A three-hour exam for both theory and practicum. **End Term Exam Marks: 70(50(T)+20(P))**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. **Philip Kotler**, *Marketing 5.0: Technology for Humanity*, Wiley
2. **Dave Chaffey**, *Digital Marketing: Strategy, Implementation and Practice*, Pearson
3. **Crystal King**, *Social Media Marketing Workbook*, CreateSpace
4. **Canva Design School** – https://designschool.canva.com
5. **HubSpot Academy** – Free Digital Marketing Certifications – https://academy.hubspot.com
6. **Google Digital Garage** – Fundamentals of Digital Marketing – https://learndigital.withgoogle.com

*Applicable for courses having practical components.

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Syllabus of Examination (4th Semester) for Under-Graduate Programmes
Computer Science
VOC
according to
Curriculum Framework for Under-Graduate Programmes
As per NEP-2020 (Multiple Entry-Exit, Internships and Choice Based Credit System)
DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
(2025-2026)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
KURUKSHETRA UNIVERSITY, KURUKSHETRA

<table>
<tr><th colspan="4">Scheme: 2025-26, Syllabus: 2025-26</th></tr>
<tr><th colspan="4">Part A – Introduction</th></tr>
<tr><td>Subject</td><td colspan="3">Computer Science</td></tr>
<tr><td>Semester</td><td colspan="3">VI</td></tr>
<tr><td>Name of the Course</td><td colspan="3">Front End Framework (React)</td></tr>
<tr><td>Course Code</td><td colspan="3">B23-VOC-239</td></tr>
<tr><td>Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/ VAC)</td><td colspan="3">VOC</td></tr>
<tr><td>Level of the course (As per Annexure-I</td><td colspan="3">200-299</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3"></td></tr>
<tr><td>Course Learning Outcomes(CLO):</td><td colspan="3">After completing this course, the learner will be able to:
1. Understand the core concepts of component-based front-end development using React.
2. Build dynamic and responsive single-page applications using React and JSX.
3. Manage application state effectively using React hooks and context.
4. Integrate APIs and use routing for building complete client-side applications.
5. Apply front-end development skills through practical implementation using React.</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>3</td><td>1</td><td>4</td></tr>
<tr><td>Contact Hours</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td colspan="2">Max. Marks:100(70(T)+30(P))
Internal Assessment Marks:30(20(T)+10(P))
End Term Exam Marks: 70(50(T)+20(P))</td><td colspan="2">Time: 3 Hrs.(T), 3Hrs.(P)</td></tr>
<tr><th colspan="4">Part B- Contents of the Course</th></tr>
<tr><td colspan="4"><u>Instructions for Paper-Setter</u>
The examiner will set a total of nine questions. Out of which first question will be compulsory. Remaining eight questions will be set from four unit selecting two questions from each unit. The examination will be of three-hour duration. All questions will carry equal marks. The first question will comprise short answer-type questions covering the entire syllabus.
Candidate will have to attempt five questions in all, selecting one question from each unit. First question will be compulsory.
The practicum will be evaluated by an external and an internal examiner. The examination will be of</td></tr>
</table>

three-hour duration.

Unit	Topics	Contact Hours
I	**Introduction to React and Environment Setup:** React overview, Introduction to single-page applications, Differences between traditional web apps and SPA, Setting up development environment, Installing Node.js and npm, Installing and creating React app using `create-react-app`, Project structure overview, JSX syntax and rules, Rendering elements, Using functional components	11
II	**Components and Props:** Understanding components, Functional vs class components, Props and property passing, Children props, Reusability and component composition, Handling events, Conditional rendering, Lists and keys, Forms and form handling in React	11
III	**State Management and Hooks:** Introduction to `useState`, Managing local state in functional components, Event handling and state updates, Introduction to `useEffect`, Lifecycle with useEffect, Introduction to context API, useContext for global state, Lifting state up	11
IV	**Routing, API Integration, and Final Project:** React Router basics, Route, Switch, Link, useParams, useNavigate, Fetching data using `fetch()` or Axios, Connecting to REST APIs, Handling asynchronous data and loaders, Project structure planning, Mini-project: Building a functional single-page application (SPA) with routing and API integration	12
V*	Practicum: Students are advised to do laboratory/practical practice not limited to but including the following types of problems: 1. Creating simple component-based UIs 2. Handling forms and user input 3. Using hooks in multiple scenarios 4. Building a small React application using routing and API 5. Deployment using GitHub Pages or Vercel	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**End-Term Examination:** A three-hour exam for both theory and practicum. **End Term Exam Marks: 70(50(T)+20(P))**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. **Dave Ceddia**, *Pure React*, Self-published
2. **Alex Banks & Eve Porcello**, *Learning React: A Hands-On Guide to Building Web Applications Using React and Redux*, O'Reilly
3. **Robin Wieruch**, *The Road to React*, Leanpub
4. https://reactjs.org/docs/getting-started.html — Official React Documentation
5. **Codecademy / freeCodeCamp React courses**

*Applicable for courses having practical components.

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Syllabus of Examination (4th Semester) for Under-Graduate Programmes
Computer Science
VOC
according to
Curriculum Framework for Under-Graduate Programmes
As per NEP-2020 (Multiple Entry-Exit, Internships and Choice Based Credit System)
DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
(2025-2026)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
KURUKSHETRA UNIVERSITY, KURUKSHETRA

<table>
<tr><th colspan="4">Scheme: 2025-26, Syllabus: 2025-26</th></tr>
<tr><th colspan="4">Part A – Introduction</th></tr>
<tr><td>Subject</td><td colspan="3">Computer Science</td></tr>
<tr><td>Semester</td><td colspan="3">IV</td></tr>
<tr><td>Name of the Course</td><td colspan="3">Ethical Hacking</td></tr>
<tr><td>Course Code</td><td colspan="3">B25-VOC-243</td></tr>
<tr><td>Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/ VAC)</td><td colspan="3">VOC</td></tr>
<tr><td>Level of the course (As per Annexure-I</td><td colspan="3">200-299</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3"></td></tr>
<tr><td>Course Learning Outcomes(CLO):</td><td colspan="3">After completing this course, the learner will be able to:
1. Understand the fundamental concepts of ethical hacking and cybersecurity.
2. Identify and analyze security threats, vulnerabilities, and exploits.
3. Apply common hacking tools and techniques in a controlled and ethical environment.
4. Demonstrate safe and legal penetration testing practices using virtual labs.
5. Propose countermeasures and security solutions for detected threats.</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>3</td><td>1</td><td>4</td></tr>
<tr><td>Contact Hours</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td colspan="2">Max. Marks:100(70(T)+30(P))
Internal Assessment Marks:30(20(T)+10(P))
End Term Exam Marks: 70(50(T)+20(P))</td><td colspan="2">Time: 3 Hrs.(T), 3Hrs.(P)</td></tr>
<tr><th colspan="4">Part B- Contents of the Course</th></tr>
<tr><td colspan="4"><u>Instructions for Paper-Setter</u>
The examiner will set a total of nine questions. Out of which first question will be compulsory. Remaining eight questions will be set from four unit selecting two questions from each unit. The examination will be of three-hour duration. All questions will carry equal marks. The first question will comprise short answer-type questions covering the entire syllabus.
Candidate will have to attempt five questions in all, selecting one question from each unit. First question will be compulsory.
The practicum will be evaluated by an external and an internal examiner. The examination will be of</td></tr>
</table>

three-hour duration.

Unit	Topics	Contact Hours
I	**Introduction to Ethical Hacking and Cyber Security:** Definition of hacking and types of hackers, Ethical hacking vs. unethical hacking, Scope and limitations of ethical hacking, Cybercrime and cyber laws, Phases of hacking, Legal implications and code of ethics, Introduction to security policies and compliance	11
II	**Footprinting and Network Scanning:** Footprinting techniques, Passive and active information gathering, WHOIS, NSLookup, Google hacking, Network scanning techniques, Nmap, IP scanning, Port scanning, Vulnerability scanning basics, Introduction to network mapping tools	11
III	**System Hacking and Malware:** Password cracking techniques, Keyloggers and spyware, Privilege escalation, Trojans, viruses, and worms, Backdoors and remote access tools, Buffer overflows (basic understanding), Antivirus evasion techniques (theory only), Safe practices to avoid infections	11
IV	**Web and Wireless Security Basics:** Common web application attacks (XSS, SQL injection, CSRF), Introduction to web vulnerability scanners (e.g., OWASP ZAP), Securing web applications (basic methods), Wireless network vulnerabilities, Types of Wi-Fi attacks (WEP cracking, rogue APs), Introduction to WPA/WPA2 security, Basic countermeasures	12
V*	Practicum: Students are advised to do laboratory/practical practice not limited to but including the following types of problems: 1. Simulated hacking environment using tools like Kali Linux, Wireshark, Nmap, OWASP ZAP 2. Exercises in footprinting, scanning, password cracking, basic web app testing 3. Mini-project: Penetration test report on a simulated network or application 4. Lab safety and ethics: Students must sign an ethical conduct agreement.	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**End-Term Examination:** A three-hour exam for both theory and practicum. **End Term Exam Marks: 70(50(T)+20(P))**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. **Bachaal Uddin**, *Ethical Hacking and Cyber Security*, Wiley
2. **William Stallings**, *Network Security Essentials*, Pearson
3. **Michael T. Simpson**, *Hands-On Ethical Hacking and Network Defense*, Cengage
4. **Jon Erickson**, *Hacking: The Art of Exploitation*, No Starch Press
5. **CEH Official Study Guide**, EC-Council (moderate level only)
6. Online resource: https://owasp.org

*Applicable for courses having practical components.

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Syllabus of Examination (6th Semester) for Under-Graduate Programmes
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VOC
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DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
(2025-2026)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
KURUKSHETRA UNIVERSITY, KURUKSHETRA

<table>
<tr><th colspan="4">Scheme: 2025-26, Syllabus: 2025-26</th></tr>
<tr><th colspan="4">Part A – Introduction</th></tr>
<tr><td>Subject</td><td colspan="3">Computer Science</td></tr>
<tr><td>Semester</td><td colspan="3">VI</td></tr>
<tr><td>Name of the Course</td><td colspan="3">Mobile Application Development using React Native</td></tr>
<tr><td>Course Code</td><td colspan="3">B25-VOC-343</td></tr>
<tr><td>Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/ VAC)</td><td colspan="3">VOC</td></tr>
<tr><td>Level of the course (As per Annexure-I</td><td colspan="3">300-399</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3"></td></tr>
<tr><td>Course Learning Outcomes(CLO):</td><td colspan="3">After completing this course, the learner will be able to:

1. Understand the fundamentals of mobile app development and the React Native framework.
2. Build cross-platform applications using JavaScript and React Native components.
3. Integrate mobile app features like navigation, state management, and data handling.
4. Deploy and test mobile apps on Android and iOS platforms.
5. Use debugging tools and optimize application performance.</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>3</td><td>1</td><td>4</td></tr>
<tr><td>Contact Hours</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td colspan="2">Max. Marks:100(70(T)+30(P))
Internal Assessment Marks:30(20(T)+10(P))
End Term Exam Marks: 70(50(T)+20(P))</td><td colspan="2">Time: 3 Hrs.(T), 3Hrs.(P)</td></tr>
<tr><th colspan="4">Part B- Contents of the Course</th></tr>
<tr><td colspan="4"><u>Instructions for Paper-Setter</u>
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Candidate will have to attempt five questions in all, selecting one question from each unit. First question will be compulsory.
The practicum will be evaluated by an external and an internal examiner. The examination will be of</td></tr>
</table>

three-hour duration.

Unit	Topics	Contact Hours
I	**Introduction to Mobile App Development & React Native:** Mobile application basics, Native vs Hybrid vs Cross-platform apps, Introduction to React Native, Features and architecture of React Native, Environment setup (Node.js, npm, Expo CLI), Creating first React Native project, Folder structure and code walkthrough, Running apps on emulators and devices.	11
II	**React Native Components and UI Design:** Core components: View, Text, Image, TextInput, Button, ScrollView, FlatList, StyleSheet in React Native, Flexbox layout, Platform-specific design using Platform API, Responsive UI design principles, Using external UI libraries (e.g., NativeBase, React Native Paper), Handling user inputs.	11
III	**Navigation, State Management and APIs:** React Navigation: Stack, Tab, Drawer navigators, Props and state in components, useState and useEffect hooks, AsyncStorage, Fetching data using APIs, Working with JSON data, Introduction to Redux for global state management.	11
IV	**Deployment, Testing and Debugging:** App lifecycle, Handling errors and exceptions, Debugging techniques in React Native, Using Chrome DevTools and Flipper, Generating APK for Android, Introduction to Expo publishing, Best practices for performance and security, Project work: Developing a small mobile application.	12
V*	Practicum: Students are advised to do laboratory/practical practice not limited to but including the following types of problems: 1. Weekly lab sessions aligned with theory units. 2. Mini project on developing a basic mobile application.	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**End-Term Examination:** A three-hour exam for both theory and practicum. **End Term Exam Marks: 70(50(T)+20(P))**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

1. **Bonnie Eisenman**, *Learning React Native*, O'Reilly Media.
2. **Adam Boduch**, *React and React Native*, Packt Publishing.
3. **Akshat Paul & Abhishek Nalwaya**, *React Native for Mobile Development*, Apress.
4. Official documentation: https://reactnative.dev
5. Expo Docs: https://docs.expo.dev

*Applicable for courses having practical components.

Kurukshetra University, Kurukshetra
(Established by the State Legislature Act XII of 1956)
('A++' Grade, NAAC Accredited)

॥ योगस्थ: कुरु कर्माणि ॥
समबुद्धि व योग युक्त होकर कर्म करो
(Perform Actions while Stead fasting in the State of Yoga)

Syllabus of Examination (6th Semester) for Under-Graduate Programmes
Computer Science
VOC
according to
Curriculum Framework for Under-Graduate Programmes
As per NEP-2020 (Multiple Entry-Exit, Internships and Choice Based Credit System)
DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
(2025-2026)

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
KURUKSHETRA UNIVERSITY, KURUKSHETRA

<table>
<tr><th colspan="4">Scheme: 2025-26, Syllabus: 2025-26</th></tr>
<tr><th colspan="4">Part A – Introduction</th></tr>
<tr><td>Subject</td><td colspan="3">Computer Science</td></tr>
<tr><td>Semester</td><td colspan="3">VI</td></tr>
<tr><td>Name of the Course</td><td colspan="3">UI / UX Design using FIGMA</td></tr>
<tr><td>Course Code</td><td colspan="3">B25-VOC-345</td></tr>
<tr><td>Course Type: (CC/MCC/MDC/CC-M/DSEC/VOC/DSE/PC/AEC/ VAC)</td><td colspan="3">VOC</td></tr>
<tr><td>Level of the course (As per Annexure-I</td><td colspan="3">300-399</td></tr>
<tr><td>Pre-requisite for the course (if any)</td><td colspan="3">Knowledge of UI / UX Design using FIGMA</td></tr>
<tr><td>Course Learning Outcomes(CLO):</td><td colspan="3">After completing this course, the learner will be able to:
1. Understand basic principles of UI and UX design
2. Create wireframes and design interfaces using FIGMA
3. Develop simple interactive prototypes for web or mobile apps
4. Apply user feedback to improve design usability</td></tr>
<tr><td rowspan="2">Credits</td><td>Theory</td><td>Practical</td><td>Total</td></tr>
<tr><td>3</td><td>1</td><td>4</td></tr>
<tr><td>Contact Hours</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td colspan="2">Max. Marks:100(70(T)+30(P))
Internal Assessment Marks:30(20(T)+10(P))
End Term Exam Marks: 70(50(T)+20(P))</td><td colspan="2">Time: 3 Hrs.(T), 3Hrs.(P)</td></tr>
<tr><th colspan="4">Part B- Contents of the Course</th></tr>
<tr><td colspan="4"><u>Instructions for Paper-Setter</u>
The examiner will set a total of nine questions. Out of which first question will be compulsory. Remaining eight questions will be set from four unit selecting two questions from each unit. The examination will be of three-hour duration. All questions will carry equal marks. The first question will comprise short answer-type questions covering the entire syllabus.
Candidate will have to attempt five questions in all, selecting one question from each unit. First question will be compulsory.
The practicum will be evaluated by an external and an internal examiner. The examination will be of</td></tr>
</table>

three-hour duration.

Unit	Topics	Contact Hours
I	**Basics of UI/UX Design:** Introduction to UI and UX, Difference between UI and UX, Importance of user-centered design, Basic design principles, Elements of good user interface, Overview of design process	11
II	**Introduction to FIGMA and Wire-framing:** Figma interface and tools, Creating frames and shapes, Using text and color styles, Drawing wireframes, Designing simple layouts, Saving and sharing designs	11
III	**Designing Screens and Prototyping:** Creating multiple screens for a web/mobile app, Adding buttons and navigation links, Creating clickable prototypes, Using transitions and animations, Testing basic interaction	11
IV	**Improving Design and Final Presentation:** Collecting feedback on designs, Making improvements based on feedback, Exporting assets and design files, Building a mini design project, Presenting design to peers or teachers	12
V*	Practicum: Students are advised to do laboratory/practical practice not limited to but including the following types of problems: 1. Creating a Figma account and exploring its interface 2. Drawing basic shapes and creating color styles 3. Designing a wireframe for a login screen 4. Creating a homepage layout for a mobile app 5. Adding navigation links between screens 6. Making a clickable prototype 7. Designing a simple form (e.g., contact form or signup) 8. Using icons and images in the design 9. Testing your prototype and getting peer feedback 10. Editing the design based on feedback	30

Suggested Evaluation Methods

Internal Assessment: ➢ **Theory** • Class Participation: 5 • Seminar/presentation/assignment/quiz/class test etc.: 5 • Mid-Term Exam: 10 ➢ **Practicum** • Class Participation: NA • Seminar/Demonstration/Viva-voce/Lab records etc.: 10 • Mid-Term Exam: NA	**End-Term Examination:** A three-hour exam for both theory and practicum. **End Term Exam Marks: 70(50(T)+20(P))**

Part C-Learning Resources

Recommended Books/e-resources/LMS:

- **Don Norman**, *The Design of Everyday Things*, MIT Press
- **Steve Krug**, *Don't Make Me Think*, New Riders
- **Figma Learn** – https://www.figma.com/learn
- **Coursera / Google UX Design Course (Beginner-Friendly)**
- **Interaction Design Foundation** – https://www.interaction-design.org

*Applicable for courses having practical components.