Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 601 Entrepreneurship Development
W.E.F. 2024-25
[Total Marks: External 60 + Internal 40 =100 Marks]

Semester	VI	CIE Marks :	40
Course Code	BCA 601	SEE Marks :	60
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	02

Course Outcomes –

At the end of the course, student will be able to:

- Understand the concept of Entrepreneurship and to learn the professional behavior expected of an entrepreneur.

- Acquire conceptual exposure on converting idea to a successful entrepreneurial firm.

- Understand on the basic concepts of entrepreneurship and business opportunities to familiars with knowledge about business and project reports for starting a new ventures on team based.

Unit 1 – Understanding Entrepreneurship   10 L   15 M

- Concepts and Overview of Entrepreneurship
- Evolution of term 'Entrepreneurship'
- Factors influencing entrepreneurship' (1) Psychological factors (2) Social factors (3) Economic factor (4) Environmental factors
- Types of entrepreneurs.
- Difference between Entrepreneur and Manager
- Barriers to entrepreneurship

Unit 2 – Dimensions of Entrepreneurship   10 L   15 M

- Entrepreneurial Culture & Society
- Entrepreneurial Potential and Potential Entrepreneur
- Emerging Trends in Entrepreneurship Development
- Women Entrepreneurship
- Rural Entrepreneurship
- Social Entrepreneurship in India

Unit 3 – Entrepreneurship Development Program   10 L   15 M

- Entrepreneurial Development Programs (EDP),
- Role, relevance, and significance
- Role of Government in organizing EDPs,
- Stages of EDP
- Problems of EDP

Unit 4 – Business Plan & Project Report   10 L   15 M

- Business Plan Preparation and Project Financing
- Market Feasibility, Technical Feasibility and Financial Viability
- Project Report Preparation
- Financial Projections Preparation

Unit 5 – Business Opportunities and Start-up Policies	10 L 15 M

- Business Opportunities in the Contest of Maharashtra and Industrial Policy of the State
- Business Incubation Centres
- Export oriented Unit
- Start-up Policy Framework and Incentives

Unit 6 - Small Business & Funding	10 L 15 M

- Concept & Definition, Role of Small Business in the modern Indian Economy,
- Steps for starting a small industry, registration as SSI, advantages and problems of SSIs
- Institutional Support mechanism in India; Incentives & Facilities, Govt. Policies for SSI
- Sources of Finance- Venture capital- Venture capital process- Business angles- Commercial banks- Government Grants and Schemes.

Reference Books -

TEXT BOOKS:
- Reddy, Entrepreneurship: Text & Cases - Cengage, New Delhi.
- Kuratko/rao, Entrepreneurship: a south asian perpective.- Cengage, New Delhi.
- Leach/Melicher, Entrepreneurial Finance – Cengage. , New Delhi.
- K.Sundar – Entrepreneurship Development – Vijay Nicole Imprints private Limited
- Khanka S.S., Entrepreneurial Development, S.Chand & Co. Ltd., New Delhi, 2001.
- Sangeeta Sharma, Entrepreneurship Development, PHI Learning Pvt. Ltd., 2016.

REFERENCE BOOKS:

- Barringer, B., Entrepreneurship: Successfully Launching New Ventures, 3rd Edition, Pearson, 2011.
- Bessant, J., and Tidd, J., Innovation and Entrepreneurship, 2nd Edition, John Wiley &Sons, 2011.
- Desai, V., Small Scale Industries and Entrepreneurship, Himalaya Publishing House, 2011.
- Donald, F.K., Entrepreneurship- Theory, Process and Practice, 9th Edition, Cengage Learning, 2014.
- Hirsch, R.D., Peters, M. and Shepherd, D., Entrepreneurship, 6th Edition, Tata McGraw-Hill Education Pvt.Ltd., 2006.
- Mathew, J.M., Entrepreneurship Theory at Cross Roads: Paradigms and Praxis, 2nd Edition, Dream Tech, 2006.
- Morse, E., and Mitchell, R., Cases in Entrepreneurship: The Venture Creation Process, Sage South Asia, 2008.
- Nagendra and Manjunath, V.S., Entrepreneurship and Management, Pearson, 2010.
- Reddy, N., Entrepreneurship: Text and Cases, Cengage Learning, 2010.
- Roy, R., Entrepreneurship, 2nd Edition, Oxford University Press, 2011.
- Stokes, D., and Wilson, N., Small Business Management and entrepreneurship, 6th Edition, Cengage Learning, 2010.

Kavayitri Bahinabai Chaudhari
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Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 602 - Cyber Security
W.E.F. 2023-24
[Total Marks: External 60 + Internal 40 =100 Marks]

Semester	VI	CIE Marks :	40
Course Code	BCA 602	SEE Marks :	60
Contact Hours (L.T.P)	**4:0:0**	Exam Hours :	02

Course Outcomes –

At the end of the course, student will be able to:

- Create awareness about cyber security.
- Analyse and evaluate existing legal framework and laws on cyber security.
- Apply steps of e-commerce and cybercrime prevention.
- Develop a deeper understanding with cyber security landscape, cryptography, digital signature, network security etc.
- Identify various cybercrime, reporting and investigation procedures.

Unit 1 – Introduction   8 L   10 M

- Meaning of Data & Information,
- Basic Principles of Information Security,
- Importance of Information Security,
- Information System Threats and attacks,
- Information Security Policy and Procedure.

Unit 2 – E-commerce & Social Networking   10 L   15 M

- E- Commerce: Definition of E- Commerce, Security Threats to E-Commerce.
- Modes of Electronics Payment :, Internet Banking, E-Cash, Credit/Debit Cards,E-Wallet.
- E-Commerce Frauds and Preventions.
- Social Networking: Meaning, Advantages & Disadvantages of Social Networking, Security issues related to social media, Cyber Crimes related to Social Networking.

Unit 3 – Physical and Logical Access Controls   12 L   20 M

- Cryptography: Meaning, Types: Symmetric and Asymmetric, Model of Cryptography System.
- Digital Signature: Requirement of Digital Signature System and Mechanism of Digital Signature.
- Physical Security : Meaning & Needs, Disaster and Controls Systems
- Biometrics System: Meaning & Benefits of Biometrics Systems, Criteria for selection of Biometrics.

Unit 4 – Network Security 　　　　　　　　　　　　　　　　　10 L   15 M

- Basic Concepts of Network Security, Types of network attacks: Interruption, Interception, Modification, Fabrication.
- Intrusion Detection System: Need and Types of Intrusion Detection System.
- Virtual Private Networks: Concept, Types of VPNs and their Usage, Use of Tunneling with VPN.
- Firewall: Concept, Types and Importance.

Unit 5 – Cyber Crime & Preventions 　　　　　　　　　　　　　10 L   15 M

- Introduction to Cyber Crime and classification of Cyber Crime.
- Email Tracing and Tracking, Hacking, Phishing, Cyber Terrorism, Identity Theft, DoS attack, Spoofing.
- Steps of Cyber Crime Prevention, Cyber Crime Reporting and Investigation.

Unit 6 –Cyber Law & IT Act 　　　　　　　　　　　　　　　　10 L   15 M

- Fundamentals of Cyber Law,
- Scope of Indian Cyber Law,
- Information Technology Act 2000.
- Main features of the IT Act 2000,
- Major Penalties and offences in IT Act 2000
- Information Technology Amendment Act 2008 and its major strengths.

Reference Books -

- Godbole,"Information Systems Security", Willey ISBN 10: 8126516925
- Merkov, Breithaupt," Information Security", Pearson Education ISBN-10: 0-7897-5325-1
- Yadav, "Foundations of Information Technology", New Age, Delhi ISBN 10: 8122417620
- Kahate," Cryptography and Network Security", McGraw-Hill, Noida ISBN-13 : 978-9353163303
- Vithalani,"Information Technology Laws and Cyber Crimes", Shashwat Publication, ISBN:978-81-19281-48-0.

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 603 Android Application Development
W.E.F. 2024-25
[Total Marks: External 60 + Internal 40 =100 Marks]

Semester	VI	CIE Marks:	40
Course Code	BCA 603	SEE Marks:	60
Contact Hours (L.T.P)	**4:0:0**	Exam Hours:	02

Course Outcomes –

At the end of the course, student will be able to:

- Understand basic and advanced features of android technology.
- Designing and building mobile applications using android platform.
- Explore the knowledge about storing, sharing and retrieving the data in Android Applications.

Unit 1:Introduction to Mobile Computing   10 L   15 M

Mobile Computing: Introduction to Mobile Computing, Applications, Limitations, and Architecture, Characteristics of Mobile Communication.

Cellular Overview: Cellular networks, Cellular concept, Location Management, Handoffs Noise and its effects on mobile, Understanding GSM and CDMA, FDMA, TDMA.

Unit 2 – Introduction to android   10 L   15 M

Overview and history of Android operating system, Introduction to Google Play Store, Features of android operating system, Android Architecture, Setting up development environment, Dalvik Virtual Machine & .apk file extension, Android Devices, Setting up development environment and Software development kit., Android API levels (versions & version names)

Unit 3 – Android Application Structure   10 L   15 M

Design criteria for Android Application: Hardware Design Consideration, Design Demands For Android application, Manifest,.xml and .java file, Layouts & Drawable Resources, Intent, Activity, Activity Lifecycle and Manifest and First sample Application.

Unit 4 –Android Layouts and Menu	10 L 15 M
Linear Layout, Relative Layout, Constraint Layout, Frame Layout, Table Layout Option Menu, Context Menu, Popup Menu, Android Fragments.	

Unit 5 – Android Widgets	10 L 15 M
Introducing views and view groups, UI Widgets, Working with Buttons. Toggle Button, Checkbox and Custom Checkbox, List View and Custom List View, Date Picker Time Picker, Vertical and Horizontal scroll View ,Search View and Search View on Toolbar	

Unit 6 – Database - SQLite	10 L 15 M
Introducing SQLite, SQL Lite Open Helper and creating a database, Opening and closing a database, Working with cursors Inserts, Updates, and Delete.	

Reference Books -

- Reto Meier, "Professional Android 2 Application Development", Wiley India Pvt Ltd
- Mark L Murphy, "Beginning Android", Wiley India Pvt Ltd
- Android Application Development All in one for Dummies by Barry Burd, Edition: I

Kavayitri Bahinabai Chaudhari
North Maharashtra University, Jalgaon
Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 604 (A) Web Technology -IV
(Web Developments with React.js and Node.js)
W.E.F. 2024-25
[Total Marks: External 60 + Internal 40 =100 Marks]

Semester	VI	CIE Marks :	40
Course Code	BCA 604(A)	SEE Marks :	60
Contact Hours (L.T.P)	4:0:0	Exam Hours :	02

Course Outcomes –

At the end of the course, student will be able to:

- Understand the fundamentals of React.js & Node.js web development tools.
- Create server-side development using Node JS, focusing on the development of understanding Node JS architectures.
- Acquire knowledge about how to connect client-side and server-side applications and showcase effective ways of handling errors and validating inputs.

Unit - 1 : Basic Concept of React JS   10 L   15 M

- React JS Introduction
- Advantages of React JS
- Work flow of React JS
- Scope of React JS
- Introduction of Virtual DOM.
- Understanding JSX
- Difference between JS and JSX.
- Containers and components- Types of Components

Unit - 2 : React JS Environment & Real-Time Application   10 L   15 M

- Create a React component with JSX template.
- Create Nested Components
- States
- React JS render
- React Props
- Introduction of Props validation with data types.
- Routes
- Understanding React Lifecycle and its phases.

Unit - 3 : React JS Forms And UI   10 L   15 M

- React Forms
- Setup Controlled and Uncontrolled form components.
- Control Input elements.
- React JS Form validations.
- React Events

Unit - 4 :Basic Concept of Node JS	10 L 15 M

- Introduction
- Advantages of Node JS
- Node setup
- Module
- Exports and Require
- Concept of NPM&Create package.json
- Creating Web Server

Unit - 5 : Node Express JS	10 L 15 M

- Routes and Responding
- Express Params and Query String
- Introduction to Express.js framework
- Small REST API example
- Handling HTTP requests and responses
- Express Middleware
- API Authentication

Unit - 6 : Node JS Working MongoDB	10 L 15 M

- Connecting Node.js with MongoDB
- Working with insert, select command
- Updating records
- Deleting records

Reference Books -

1. "Learning React: A Hands-On Guide to Building Web Applications Using React and Redux" by Kirupa Chinnathambi
2. "Fullstack React: The Complete Guide to ReactJS and Friends" by Anthony Accomazzo, Ari Lerner, and Nate Murray
3. "Node.js Web Development - Fifth Edition" by David Herron

Kavayitri Bahinabai Chaudhari
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Faculty of Science and Technology
BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 605 –Project
[Total Marks: External60 + Internal40 =100 Marks]

Semester	**VI**	CIE Marks :	**40**
Course Code	**BCA 605**	SEE Marks :	**60**
Contact Hours (L.T.P)	**0:0:4**	Exam Hours :	**03**

Outcome : –

- Students are able to apply their theoretical knowledge to practical problems and will be able to develop hands on experience in software development.

- Understand how to apply the programming knowledge for a real world problem.

- Implement the knowledge about Software Requirements Specification (SRS).

PROJECT WORK

- Each Student shall have to carry out the project work based on selected Elective Domain (Web Technology/ Data Analytics /AI, ML) or other technology as per curriculum.
- The project work should be carried out individually. No group work is allowed in the Project work. The project title should not be repeated.
- The topic of the project should be decided with the consultation & guidance of an internal guide teacher of the institute / college.
- The project should be necessarily innovative and problem solving.
- The application should be menu driven and should provide the facilities of storage of data, modifications in existing data, deletion of unwanted data, and viewing of data.
- The student should complete the project based on the actual requirement of any selected enterprise/ organization or sub system and get it certified by the concerned project guide; that the Project report has been satisfactorily completed.
- In the project Report, student should clearly mention –SRS, Need of project, DFD, Normalization, ERD, database(s) / CSV files required for the project, software / technology used for the project, reasons for selection of that software / technology, inputs & Outputs design.
- Prepare **3 copies** of Project Report (1 copy for student, One for Institute / College & One for University).
  Submit **TWO** copies to the Head / Director of the institute / Principal of the college. One copy of the report shall be forwarded to the University by the Institute.
- No student will be permitted to appear for Viva-Voce examinations, unless and until the project report is submitted within the stipulated time.

Guidelines for the Project Guide:
- The project guides ensure that the project title should not be repeated.
- A project guide at a time shall be guiding a maximum of 15 students.
- Project Guide should regularly monitor students' progress throughout the project to ensure they are on track to meet deadlines. Guide the students for the overall project development.

Project Development Phases

Phase -1	10 Hrs.
Project Selection	
Students may be given the option to choose a project topic within the scope of their curriculum or be assigned specific topics decided by their project guide.	
The project topic should be relevant to their field of study and align with the learning objectives of the course.	
Planning and Scheduling	
Students create a project plan and schedule detailing the task, and deadlines for each phase of the project	
They identify the resources required for the project, including software, hardware, data, and any other materials.	

Phase -2	10 Hrs.
Requirements Gathering	
Students identify and document the functional and non-functional requirements of their project.	
They may conduct interviews, surveys, or research to gather information from potential users	
Design	
Based on the requirements gathered, students design the architecture, user interface, database schema, algorithms, or any other components of their project	
They create blue Print or diagrams to visualize the design and seek feedback from project guide	

Phase -3	30 Hrs.
Implementation	
Students begin coding or developing their project according to the design specifications.	
They follow best practices for coding standards, version control, and documentation throughout the implementation phase.	
Testing	
Students conduct testing to ensure that their project meets the specified requirements and functions as intended.	
They perform unit testing, integration testing, and system testing to identify and fix any defects or issues.	

Phase -4	10 Hrs.
Documentation	
Guide students in creating user manuals or guides to help to users understand how to use their projects.	
Assist students in making a project report summarizing their methodologies, diagrams, and conclusions.	

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BACHELOR OF COMPUTER APPLICATIONS (BCA)
BCA 606 Lab on Android Application Development
W.E.F. 2024-25
[Total Marks: External 60 + Internal 40 =100 Marks]

Semester	VI	CIE Marks :	40
Course Code	BCA 606	SEE Marks :	60
Contact Hours (L.T.P)	**0:0:4**	Exam Hours :	03

Course Outcomes –

At the end of the course, student will be able to:

- Creating robust mobile applications and learn how to integrate them with other services.
- Creating intuitive, reliable mobile apps using the android services and components.
- Create a seamless user interface that works with different mobile screens.

1. Installation and setup of java development kit (JDK), setup android SDK, setup eclipse IDE, setup android development tools (ADT) plugins, create android virtual device.

2. Create "Hello World" application. That will display "Hello World" in the middle of the screen using TextView Widget in the red color.

3. Create Registration page to demonstration of Basic widgets available in android.

4. Create sample application with login module.(Check username and password) On successful login, Change TextView "Login Successful". And on failing login, alert user using Toast "Login fail".

5. Create an application for demonstration of Scroll view in android.

6. Create login application where you will have to validate username and passwords till the username and password is not validated, login button should remain disabled.

7. Create an application for calculator.

8. Demonstrate use of scroll view.

9. Demonstrate use of intent in android.

10. Create application to demonstrate menu option.

11. Create application to demonstrate progress bar.

	Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon Faculty of Science and Technology BACHELOR OF COMPUTER APPLICATIONS (BCA) BCA 607(A) Lab on Web Development Technology IV (React Js and Node JS) W.E.F. 2024-25 [Total Marks: External 60 + Internal 40 =100 Marks]

Semester	**VI**	CIE Marks :	**40**
Course Code	**BCA 607(A)**	SEE Marks :	**60**
Contact Hours (L.T.P)	**0:0:4**	Exam Hours :	**03**

Course Outcomes –

At the end of the course, student will be able to:

- Build a component-based application using React JS and Node JS components and enhance their functionality using directives.
- Design UI using React JS
- Understand server-side development using Node JS, focusing on the development of understanding Node JS architectures.
- Understand client-side and server-side applications and showcase effective ways of handling errors and validating inputs.

Assignments

1. Write ReactJs code to use all the states in in the created Application.
2. Write ReactJs code for Client-side form validation.
3. Write ReactJs code for Applying form components.
4. Write ReactJs code to create student Registration Form.
5. Write ReactJs code to create Simple Login Form.
6. Write ReactJsCreate a Single Page Application.
7. Write ReactJs / NodeJs code to Applying Routing.
8. Write ReactJs / NodeJs code to demonstrate the use of POST Method.
9. Write ReactJs/ NodeJs code to demonstrate the use of GET Method.
10. To demonstrate REST API in Node JS
11. Create Node JS Application for to stored student information in database.
12. Create Node JS Application for login credentials.
13. Create Node JS Application to display student information.
14. Create Node JS Application to update, display and delete student information.