



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal - 500 043, Hyderabad, Telangana

## COURSE CONTENT

INTERNET PROGRAMMING LABORATORY								
IV Semester: CSE   IT   CSE (DS)   CSE (AI&ML)								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
ACSE18	Core	L	T	P	C	CIA	SEE	Total
		0	0	2	1	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 36			Total Classes: 36			
Prerequisites: Programming with Objects								

### I. COURSE OVERVIEW:

This course will give you the basic terminology and fundamental concepts to build modern web applications. This course introduces students to developing web applications. This course presents the basics of HTML5 and CSS3 for Web application development using HTML links and HTML forms. Introduction to the use of React router and its use in developing single-page applications, redux to develop React Redux powered applications, client-server communication and the use of REST API on the server side and react primitives render to native platform UI. This course will make the students expose the front-end framework Bootstrap and to basic security mechanisms for server-side web application development.

### II. COURSES OBJECTIVES:

#### The students will try to learn

- I. The characteristics, systematic methods, model for developing web applications.
- II. The concepts of client-side programming with Bootstrap, JavaScript, Ajax, Design user interfaces that follow best practices for usability and user experience
- III. Web application Development Database with React and React Native.

### III. COURSE OUTCOMES:

At the end of the course students should be able to:

- |     |   |
|-----|---|
| CO1 | Create a web page with different layouts including links by applying different styles and colors to produce specified outputs                                     |
| CO2 | Develop a responsive web application using bootstrap with background images, menus, with admin panel and tables.  |
| CO3 | Develop interactive forms with different styles using javascript, CSS and bind data using AJAX  |
| CO4 | Develop single page applications using react router and make use of react data libraries for data visualization in dynamic pages                                  |
| CO5 | Adapt to design and develop web applications like drunken snake game and chat application with API responses using the industry's current models and architecture |
| CO6 | Test for the database to extend the features and deployment of applications for solving problems that require interaction with a web server                       |

#### IV. COURSE CONTENT:

##### EXERCISE – 1: HR OPERATIONS MANAGER

Design and implement a web-based HR Operations Manager to handle employee records, attendance, leave management, and payroll reporting.

##### EXERCISE – 2: INVESTOR SELF-SERVICE APPLICATION

Develop an investor self-service web application that allows users to manage profiles, track investments, view transaction history, and receive notifications.

##### EXERCISE – 3: E-MANDI (ELECTRONIC VEGETABLE MARKET)

Create an electronic vegetable market system enabling farmers and buyers to register, list products, place orders, and view transaction reports.

##### EXERCISE – 4: ISSUE TRACKING SYSTEM

Design an issue tracking web application to log, categorize, assign, and track the resolution status of reported issues.

##### EXERCISE – 5: E-HOSPITAL MANAGEMENT SYSTEM

Implement an e-hospital system to manage patient registration, doctor appointments, treatment records, and billing operations.

##### EXERCISE – 6: SMART TRANSPORTATION BASED CAR POOLING SYSTEM

Develop a smart car pooling system that supports ride creation, ride matching, booking, route optimization, and fare calculation.

##### EXERCISE – 7: LAW & ORDER AUTOMATION SYSTEM

Create a law-and-order automation system to manage case registration, officer assignment, case tracking, and crime reporting.

##### EXERCISE – 8: ONLINE GRIEVANCE REDRESSAL SYSTEM

Design an online grievance redressal system that enables complaint submission, tracking, escalation, and resolution feedback.

##### EXERCISE – 9: ONLINE BOOK SALES WITH MOBILE SMS

Develop an online book sales application with catalog management, order processing, payment handling, and SMS-based notifications.

##### EXERCISE – 10: E-HEALTHCARE ADVISOR

Create an e-healthcare advisor application that manages user health profiles, symptom analysis, and doctor recommendations.

##### EXERCISE – 11: HCSS (HIGHLY CONFIDENTIAL SECURITY SYSTEM)

Design a highly confidential security system focusing on secure authentication, encrypted data storage, and access control mechanisms.

##### EXERCISE – 12: FOOD SAFETY PORTAL

Develop a food safety portal for vendor registration, inspection reporting, compliance tracking, and public alerts.

### EXERCISE – 13: E-RESOURCE TECHNOLOGY

Create an e-resource technology platform for managing digital resources, search functionality, access control, and usage analytics.

### EXERCISE – 14: INSURANCE SYSTEM WITH TRACKING MANAGER

Implement an insurance management system to handle policy details, claim processing, tracking, and notifications.

### V. TEXT BOOKS:

1. Thomas A. Powell, “*The Complete Reference*”, “HTML and CSS”, 5<sup>th</sup> edition, 2017
2. Elisabeth Robson , Eric Freeman,”*Head First HTML and CSS: A Learner's Guide to Creating Standards-Based Web Pages*”, 2<sup>nd</sup> edition, 2012
3. Adam Boduchand Roy Derks, “*React and React Native: A Complete Hands-on Guide to Modern Web and Mobile Development with React.js*”, 3<sup>rd</sup> edition, 2020.

### VI. REFERENCE BOOKS:

1. W Hans Bergsten, “*Java Server Pages*”, O’ Reilly, 3<sup>rd</sup> edition, 2003.
2. D. Flanagan, “*Java Script*”, O’Reilly, 6<sup>th</sup> edition, 2011.
3. Jon Duckett, “*Beginning Web Programming*”, WROX, 2<sup>nd</sup> edition, 2008.

### VII. ELECTRONICS RESOURCES:

1. <https://www.codecademy.com/learn/paths/web-development/>
2. <https://nptel.ac.in/courses/106/105/106105084/>
3. <https://medium.com/@aureliomerenda/create-a-native-web-app-with-react-native- web419acac86b82>
4. <https://www.coursera.org/learn/react-native>
5. <https://desirecourse.net/react-native-and-redux-course-using-hooks>

### VIII. MATERIALS ONLINE

1. Course template
2. Lab Manual