



# UNIVERSITY OF MARYLAND

Feb 12, 2023

## Kushagra Kukreti

has successfully completed

### Developing Innovative Ideas for New Companies: The First Step in Entrepreneurship

an online non-credit course authorized by University of Maryland, College Park and  
offered through Coursera

Dr. James V. Green  
Managing Director of Learning and Development  
Maryland Technology Enterprise Institute  
University of Maryland

## COURSE CERTIFICATE



Verify at:  
<https://coursera.org/verify/SQARK3MXPGZ7>

Coursera has confirmed the identity of this individual and their  
participation in the course.

# **Course Structure & Syllabus of B.Tech.– Computer Science & Engg.**

## **Applicable for Batch: 2022-26**

<b>School Offering The Course</b>	<b>School Of Computing</b>
Course Code	CSF372
Course Title	Advanced Concepts in Front End Engineering
Credits (L: T:P:C)	2:0:2:3
Contact Hours (L: T:P)	2:0:2
Prerequisites (if any)	NA
Course Basket	DE

### **COURSE SUMMARY**

The students will learn the advanced concepts related to designing of web applications.

### **COURSE OBJECTIVES**

Provide opportunity to design a full fledge one-spage web-application.

### **COURSE OUTCOMES**

On successful completion of the course, students will be able to achieve the following:

**CO1:** Understand the concepts advance JAVA script.

**CO2:** Understand and design an interface using class and object of advance JAVA script.

**CO3:** Demonstrate the use of style sheet in one-page application.

**CO4:** Design and develop a complete MVC application.

### **CURRICULUM CONTENT**

#### **UNIT 1: Advance JAVA Script**

**(6 L)**

Revising basic concept of JavaScript, Function Hoisting, Function within Function, Function Expressions Passing function as arguments, Mouse and Keyboard Events, Propagation of Event, Closures, const and let, Let in for loops, Arrow Functions, Bindings in Arrow Function.

#### **UNIT 2: Classes and Constructors**

**(6 L)**

This Keyword, this in Strict Mode, Function to create Objects, Object constructor, Adding Behaviour to Objects, Objects, Class, Properties and Methods, Class Expressions and Hoisting, Exports and Imports declaration.

#### **UNIT 3: Introduction to React**

**(4 L)**

What is React, what are components, SPA vs MPAs, react vs others, Tools and Installation of tools, the terminal Create-react-app, Folder structure, installing react developer tools, Understanding JSX, JSX Restrictions, Creating aFunctional Component.

#### **UNIT 4: Styling React components and Elements**

**(12 L)**

Working with Components & Re-Using Them, Outputting ,Dynamic Content, Working with Props, Understanding the "children" Prop, Understanding & Using State, Props & State, Handling Events with Methods, Events Listening, Manipulating the State, Function Components Naming, Using the use State() Hook for State Manipulation, Stateless vs Stateful Components, Passing Method References Between Components, Adding Two Way Binding, Adding Styling with Stylesheets, Working with Inline Styles, Working with list and conditions, Outlining the Problem Set, Setting Styles Dynamically, Setting Class Names Dynamically, Adding and Using Radium, Using Radium for MediaQueries, Introducing Styled Components, More on Styled Components, Styled Components & Dynamic Styles, Working with CSS Modules, CSS Modules & Media Queries, React Hooks.

# **Course Structure & Syllabus of B.Tech.– Computer Science & Engg.**

## **Applicable for Batch: 2022-26**

### **TEXT BOOK (S):**

1. Julie Meloni, Jennifer Krynin, Sams Teach Yourself HTML, CSS and JavaScript All in One, Pearson, 3<sup>rd</sup> Edition, 2015.
2. Robun Wieruch, The Road to REACT, CreateSpace Independent Publishing Platform, 2017.

### **REFERENCES:**

1. Alex Banks, Eve Porcello, Learning React: Modern Patterns for Developing React Apps, O'Reilly, 2<sup>nd</sup> Edition, 2020.
2. Zac Gordon, React Explained, OS Training, 2019.

## **Course Structure & Syllabus of B.Tech.– Computer Science & Engg.**

### **Applicable for Batch: 2022-26**

<b>School Offering The Course</b>	<b>School Of Computing</b>
Course Code	CSF372
Course Title	Advanced Concepts in Front End Engineering
Credits (L: T:P:C)	2:0:2:3
Contact Hours (L: T:P)	2:0:2
Prerequisites (if any)	NA
Course Basket	DE

#### **COURSE SUMMARY**

The students will learn the advanced concepts related to designing of web applications.

#### **COURSE OBJECTIVES**

Provide opportunity to design a full fledge one-spage web-application.

#### **COURSE OUTCOMES**

On successful completion of the course, students will be able to achieve the following:

**CO1:** Understand the concepts advance JAVA script.

**CO2:** Understand and design an interface using class and object of advance JAVA script.

**CO3:** Demonstrate the use of style sheet in one-page application.

**CO4:** Design and develop a complete MVC application.

#### **CURRICULUM CONTENT**

##### **UNIT 1: Advance JAVA Script**

**(6 L)**

Revising basic concept of JavaScript, Function Hoisting, Function within Function, Function Expressions Passing function as arguments, Mouse and Keyboard Events, Propagation of Event, Closures, const and let, Let in for loops, Arrow Functions, Bindings in Arrow Function.

##### **UNIT 2: Classes and Constructors**

**(6 L)**

This Keyword, this in Strict Mode, Function to create Objects, Object constructor, Adding Behaviour to Objects, Objects, Class, Properties and Methods, Class Expressions and Hoisting, Exports and Imports declaration.

##### **UNIT 3: Introduction to React**

**(4 L)**

What is React, what are components, SPA vs MPAs, react vs others, Tools and Installation of tools, the terminal Create-react-app, Folder structure, installing react developer tools, Understanding JSX, JSX Restrictions, Creating aFunctional Component.

##### **UNIT 4: Styling React components and Elements**

**(12 L)**

Working with Components & Re-Using Them, Outputting ,Dynamic Content, Working with Props, Understanding the "children" Prop, Understanding & Using State, Props & State, Handling Events with Methods, Events Listening, Manipulating the State, Function Components Naming, Using the use State() Hook for State Manipulation, Stateless vs Stateful Components, Passing Method References Between Components, Adding Two Way Binding, Adding Styling with Stylesheets, Working with Inline Styles, Working with list and conditions, Outlining the Problem Set, Setting Styles Dynamically, Setting Class Names Dynamically, Adding and Using Radium, Using Radium for MediaQueries, Introducing Styled Components, More on Styled Components, Styled Components & Dynamic Styles, Working with CSS Modules, CSS Modules & Media Queries, React Hooks.

# **Course Structure & Syllabus of B.Tech.– Computer Science & Engg.**

## **Applicable for Batch: 2022-26**

### **TEXT BOOK (S):**

1. Julie Meloni, Jennifer Krynin, Sams Teach Yourself HTML, CSS and JavaScript All in One, Pearson, 3<sup>rd</sup> Edition, 2015.
2. Robun Wieruch, The Road to REACT, CreateSpace Independent Publishing Platform, 2017.

### **REFERENCES:**

1. Alex Banks, Eve Porcello, Learning React: Modern Patterns for Developing React Apps, O'Reilly, 2<sup>nd</sup> Edition, 2020.
2. Zac Gordon, React Explained, OS Training, 2019.



# UNIVERSITY OF MARYLAND

Feb 12, 2023

## Kushagra Kukreti

has successfully completed

### Developing Innovative Ideas for New Companies: The First Step in Entrepreneurship

an online non-credit course authorized by University of Maryland, College Park and  
offered through Coursera

Dr. James V. Green  
Managing Director of Learning and Development  
Maryland Technology Enterprise Institute  
University of Maryland

## COURSE CERTIFICATE



Verify at:  
<https://coursera.org/verify/SQARK3MXPGZ7>

Coursera has confirmed the identity of this individual and their  
participation in the course.

# **Course Structure & Syllabus of B.Tech.– Computer Science & Engg.**

## **Applicable for Batch: 2022-26**

<b>School Offering The Course</b>	<b>School Of Computing</b>
Course Code	CSF372
Course Title	Advanced Concepts in Front End Engineering
Credits (L: T:P:C)	2:0:2:3
Contact Hours (L: T:P)	2:0:2
Prerequisites (if any)	NA
Course Basket	DE

### **COURSE SUMMARY**

The students will learn the advanced concepts related to designing of web applications.

### **COURSE OBJECTIVES**

Provide opportunity to design a full fledge one-spage web-application.

### **COURSE OUTCOMES**

On successful completion of the course, students will be able to achieve the following:

**CO1:** Understand the concepts advance JAVA script.

**CO2:** Understand and design an interface using class and object of advance JAVA script.

**CO3:** Demonstrate the use of style sheet in one-page application.

**CO4:** Design and develop a complete MVC application.

### **CURRICULUM CONTENT**

#### **UNIT 1: Advance JAVA Script**

**(6 L)**

Revising basic concept of JavaScript, Function Hoisting, Function within Function, Function Expressions Passing function as arguments, Mouse and Keyboard Events, Propagation of Event, Closures, const and let, Let in for loops, Arrow Functions, Bindings in Arrow Function.

#### **UNIT 2: Classes and Constructors**

**(6 L)**

This Keyword, this in Strict Mode, Function to create Objects, Object constructor, Adding Behaviour to Objects, Objects, Class, Properties and Methods, Class Expressions and Hoisting, Exports and Imports declaration.

#### **UNIT 3: Introduction to React**

**(4 L)**

What is React, what are components, SPA vs MPAs, react vs others, Tools and Installation of tools, the terminal Create-react-app, Folder structure, installing react developer tools, Understanding JSX, JSX Restrictions, Creating aFunctional Component.

#### **UNIT 4: Styling React components and Elements**

**(12 L)**

Working with Components & Re-Using Them, Outputting ,Dynamic Content, Working with Props, Understanding the "children" Prop, Understanding & Using State, Props & State, Handling Events with Methods, Events Listening, Manipulating the State, Function Components Naming, Using the use State() Hook for State Manipulation, Stateless vs Stateful Components, Passing Method References Between Components, Adding Two Way Binding, Adding Styling with Stylesheets, Working with Inline Styles, Working with list and conditions, Outlining the Problem Set, Setting Styles Dynamically, Setting Class Names Dynamically, Adding and Using Radium, Using Radium for MediaQueries, Introducing Styled Components, More on Styled Components, Styled Components & Dynamic Styles, Working with CSS Modules, CSS Modules & Media Queries, React Hooks.

# **Course Structure & Syllabus of B.Tech.– Computer Science & Engg.**

## **Applicable for Batch: 2022-26**

### **TEXT BOOK (S):**

1. Julie Meloni, Jennifer Krynin, Sams Teach Yourself HTML, CSS and JavaScript All in One, Pearson, 3<sup>rd</sup> Edition, 2015.
2. Robun Wieruch, The Road to REACT, CreateSpace Independent Publishing Platform, 2017.

### **REFERENCES:**

1. Alex Banks, Eve Porcello, Learning React: Modern Patterns for Developing React Apps, O'Reilly, 2<sup>nd</sup> Edition, 2020.
2. Zac Gordon, React Explained, OS Training, 2019.