



J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY
Approved by AICTE, New Delhi And Affiliated to Anna University, Chennai.
Accredited by NAAC with "A" grade
T.N. Palayam (Po), Gobi (Tk), Erode (Dt) – 638 506



ACADEMIC YEAR

2023-2024



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CURRICULUM DESIGN AND DEVELOPMENT




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3. Summary of Design and Development of Curriculum for Add on / Certificate/ Diploma Courses

S.No	Year	Department	Faculty Participated	Add on Course Title
1	2023-24	AUTO	Mr.V.P. ARUL MURUGAN	Design and Development Of Curriculum For "AUTOMOTIVE DIGITAL DESIGN"
2	2023-24	CIVIL	Mrs. A. CAYALVIZHI	Design and Development Of Curriculum For "VIRTUAL PROTOTYPING WITH BIM"
3	2023-24	CSE	Mr.S.DHARANITHARAN	Design and Development Of Curriculum For "CUTTING EDGE MOBILE APPLICATIONS DEVELOPMENT USING KOTLIN"
4	2023-24	EEE	Mr. T.S. THAMBIRAN	Design and Development Of Curriculum For "ENERGY AUDIT & TESTING COMMISSIONING"
5	2023-24	ECE	Mrs.M. SIVARANJANI	Design and Development Of Curriculum For "PCB DESIGNING AND FABRICATION"
6	2023-24	MECH	Mr.M.SIVAKUMAR	Design and Development Of Curriculum For "MACHINE LEARNING APPLICATIONS IN INDUSTRY 5.0"
7	2023-24	IT	Mrs.S. KANIMOZHI	Design and Development Of Curriculum For "ETHICAL HACKING AND PENETRATION TESTING"
8	2023-24	MCA	Mr.I.MANIKANDAN	Design and Development Of Curriculum For "GENERATIVE AI AND PROMPT ENGINEERING"
9	2023-24	MBA	Mr.R.PRASANTH	Design and Development Of Curriculum For "DATA SCIENCE IN BUSINESS STATISTICS & ANALYTICS"


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GOBI (Tk), ERODE (Dt).

REQUISITION LETTER

From,

Head of the Department,

Automobile Engineering,

J.K.K Munirajah College of Technology,

T.N.Palayam.

To,

The Principal,

J.K.K Munirajah college of Technology,

T.N.Palayam.

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program-reg

We have planned to conduct a certificate Program for II, III and IV year B.E-
Automobile Engineering students on "Automotive Digital Design" from 20.11.2023 to
25.11.2023 by program coordinator Mr.V.P.Arul Murugan, M.E., AP/AUTO. So, I request
you to kindly provide permission to conduct the certificate Program.

Thanking You,

Place: T.N.Palayam

Date: 03.11.2023

Yours Truly,

Permitted
[Signature]
3/11/23

[Signature]

[Signature]
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JKKMCT/CIRCULAR/NOV-23

06.11.2023

CIRCULAR

The Department of Automobile Engineering is planning to organize a Certificate Program on **"AUTOMOTIVE DIGITAL DESIGN"** for the benefit of the students from **20.11.2023 (Monday)** TO **25.11.2023 (Saturday)**. Students those who are willing to attend the course can enroll their names to their class in-charges respectively on or before 09.11.2023.


PRINCIPAL

Copy To

All the HODs and Staff Members,

All the students,

Notice Boards & File Copy


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PROGRAM SYLLABUS

Program Name : **AUTOMOTIVE DIGITAL DESIGN**

Program Code :23AEADDCP01

Program Coordinator Name: Mr.V.P.ARUL MURUGAN,M.E

Total Hours: 36hrs

CHAPTER I-INTRODUCTION TO AUTOMOTIVE DESIGN


- Overview of automotive design history and evolution.
- Core principles of vehicle design: aesthetics, functionality, and engineering.
- Understanding trends and innovations in the automotive industry.
- Careers in automotive design.

CHAPTER II- FUNDAMENTALS OF AUTOMOTIVE SKETCHING

- Introduction to automotive sketching tools and techniques.
- Perspective drawing and dynamic angles.
- Capturing proportions and key design features.
- Developing quick ideation skills through thumbnails.

CHAPTER III -CONCEPT DESIGN AND IDEATION

- Creating mood boards and defining design themes.
- Concept ideation processes for automotive projects.
- Translating ideas into preliminary sketches.
- Understanding client briefs and target markets.


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CHAPTER IV- BASICS OF DIGITAL MODELING

- Introduction to CAD and 3D modeling software.
- Navigating the 3D workspace and understanding toolsets.
- Creating basic forms and shapes in digital environments.
- Comparing different modeling techniques (e.g., NURBS, polygonal).

CHAPTER V- MATERIALS AND TEXTURES

- Sculpting complex automotive shapes.
- Designing key components like grilles, headlights, and wheels.
- Aerodynamics and functional design considerations.
- Techniques for surface continuity and refinement.

Prepared By:

Name : V.P.ARUL MURUGAN, M.E

Designation: AP/AUTO

PROGRAM COORDINATOR

HOD

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DEPARTMENT OF AUTOMOBILE ENGINEERING

PROGRAM SCHEDULE

AUTOMOTIVE DIGITAL DESIGN

Schedule Period : 20.11.2023 TO 25.11.2023

Dates/ Duration	09:30 AM to 11:30 AM (02.00 hr)		11.45 AM to 1.15 PM (01.30 hr)		2:00 PM to 4.20 PM (02.30hr)
20.11.2023	Key design principles	BREAK	Overview of the automotive industry and market trends.	LUNCH	Basics of sketching techniques for automotive design.
21.11.2023	Perspective drawing and dynamic styling.		Hand-drawn vs. digital sketching workflows.		Overview of CAD and 3D modeling software
22.11.2023	Setting up and navigating a 3D workspace.		Creating basic shapes and surfaces.		Surface modeling techniques.
23.11.2023	Creating complex geometries and automotive forms.		Ensuring manufacturability in designs.		Introduction to rendering software
24.11.2023	Applying textures, materials, and lighting to 3D models.		Realistic rendering for presentation and portfolios.		Exploring VR and AR tools for immersive design experiences.
25.11.2023	Creating virtual prototypes and interactive presentations.		Sculpting details like grilles, lights, and mirrors.		Communicating with engineering and production teams.


PROGRAM COORDINATOR


HOD


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Requisition Letter

From,

Head of the Department,

Civil Engineering,

J.K.K Munirajah College of Technology,

T.N.Palayam.

To,

The Principal,

J.K.K Munirajah college of Technology,

T.N.Palayam.

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program-Reg

We have planned to conduct a certificate Program **VIRTUAL PROTOTYPING WITH**

BIM for II-, III- and IV-year CIVIL students **07.08.2023 TO 12.08.2023** by program coordinator

Ms. A.CAYALVIZHI Architect. So, I request you to kindly provide permission to conduct the

certificate Program.

Thanking You,

Place: T.N.Palayam

Date: 03.08.2023

Permitted
AUM
8/8/23

Yours Truly,





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JKKMCT/CIRCULAR/AUGUST/2023

03.08.2023

CIRCULAR

The Department of Civil Engineering is planning to organize a Certificate Program on **‘VIRTUAL PROTOTYING WITH BIM’** (36 Hours) for the benefit of the students from **‘07.08.2023 (MONDAY) TO 12.08.2023 (SATURDAY)’** Students those who are willing to attend the Program can enroll their names to their class in-charges respectively on or before **05.08.2023.**



[Handwritten Signature]
2/8/23

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Copy To,

**All the HODs and Staff Members, The
Student's circulation,**

Notice boards and File copy

[Handwritten Signature]

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Program Name : VIRTUAL PROTOTYPING WITH BIM

Program Code : 23CEVPBCP01

Program Coordinator Name : Ms. A.CAYALVIZHI Architect

Total Hours : 36 hrs

Course Description:

This course introduces Building Information Modeling (BIM) as a transformative process in civil engineering, enabling students to develop skills in digital construction modeling, collaboration, and project management. Emphasis will be placed on hands-on learning, case studies, and industry-relevant software.

UNIT I Course Objectives:

- ❖ Understand the fundamental concepts and importance of BIM in civil engineering projects.
- ❖ Develop proficiency in BIM tools for design, analysis, and project coordination.
- ❖ Enhance collaborative skills through interdisciplinary project work.
- ❖ Integrate BIM workflows to improve efficiency and sustainability in construction.

UNIT II Learning Outcomes:


Upon completion of this course, students will be able to:

- ❖ Demonstrate knowledge of BIM principles and technologies.
- ❖ Create and manage 3D models using BIM software.
- ❖ Perform clash detection and model coordination.
- ❖ Interpret and apply BIM standards and protocols.
- ❖ Produce detailed construction documentation from BIM models.

UNIT III Course Structure:

Module 1: Introduction to BIM (6 Hours)

- ❖ Definition, History, and Evolution of BIM
- ❖ BIM in the Civil Engineering Lifecycle
- ❖ Benefits and Challenges of BIM Implementation


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Module 2: BIM Software and Tools (8 Hours)

- ❖ Overview of Industry-Standard BIM Software (Autodesk Revit, Navisworks, Civil 3D)
- ❖ Hands-on Training in Revit: Basic Modeling Techniques
- ❖ Civil 3D for Infrastructure Projects

UNIT IV Modeling and Analysis

Module 3: BIM for Structural and Infrastructure Projects (6 Hours)

- ❖ Structural Modeling and Analysis
- ❖ BIM Applications in Roadways, Bridges, and Drainage Design
- ❖ Parametric Design and Automation

Module 4: Collaboration and Coordination (6 Hours)

- ❖ Multi-disciplinary Collaboration
- ❖ Clash Detection and Conflict Resolution (Navisworks)
- ❖ Document Management and Project Coordination

UNIT V Level of Development (LOD) Specifications

Module 5: BIM Standards and Protocols (4 Hours)

- ❖ International and Local BIM Standards (ISO 19650, PAS 1192)
- ❖ BIM Execution Plans (BEP)
- ❖ Level of Development (LOD) Specifications

Module 6: Case Studies and Capstone Project (6 Hours)

- ❖ Real-world BIM Case Studies
- ❖ Group Capstone Project: Develop a BIM Model for a Civil Engineering

Prepared By :

Name : *Ar. A. Gayalvizhi*

Designation : *Senior Architect (Nurali Architects)*

Ar. A. Gayalvizhi
COURSE COORDINATOR

Ar. A. V.
HOD

Ar. A. V.
PRINCIPAL

Ar. A. V.
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CERTIFICATE PROGRAM – VIRTUAL PROTOTYPING WITH BIM

Schedule Period : 07.08.2023 TO 12.08.2023

Dates/ Duration	09:30 AM to 11:30 AM (02.00 hr)		11.45 AM to 1.15 PM (01.30 hr)		2:00 PM to 4.20 PM (02.30hr)
07.08.2023	This course introduces Building Information Modeling (BIM) as a transformative process in civil engineering, enabling students to develop skills in digital construction modeling, collaboration,	BREAK	Understand the fundamental concepts and importance of BIM in civil engineering projects.	LUNCH	Integrate BIM workflows to improve efficiency and sustainability in construction.
08.08.2023	Create and manage 3D models using BIM software.		Produce detailed construction documentation from BIM models.		Demonstrate knowledge of BIM principles and technologies.
09.08.2023	Definition, History, and Evolution of BIM		BIM in the Civil Engineering Lifecycle		Benefits and Challenges of BIM Implementation



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10.08.2023	Hands-on Training in Revit: Basic Modeling Techniques		Civil 3D for Infrastructure Projects		Structural Modeling and Analysis
11.08.2023	Parametric Design and Automation		Clash Detection and Conflict Resolution (Navisworks)		Document Management and Project Coordination
12.08.2023	International and Local BIM Standards (ISO 19650, PAS 1192)		Level of Development (LOD) Specifications		Real-world BIM Case Studies

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REQUISITION LETTER

From,

Head of the Department,

Computer Science and Engineering,

JKK Munirajah College of Technology,

T.N. Palayam.

To,

The principal,

JKK Munirajah College of Technology, T.N.

Palayam.

Permitted
25/1/24

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program- Reg

We have planned to conduct a certificate program for II- and III-year Computer Science and Engineering students on **"CUTTING EDGE MOBILE APPLICATIONS DEVELOPMENT USING KOTLIN"** from **05.02.2024** to **10.02.2024** by Program Coordinator **S.DHARANITHARAN, M.E.**, So, I request you to kindly provide a permission to conduct the certificate program.

Thanking You,

Yours Truly,

Place: T.N.Palayam

Date:30.01.2024

[Signature]
Principal
J.K.K. Munirajah College of Technology
(Autonomous)
T.N. Palayam, Gobi (Tk)
Erode (Dt) - 638 506

sin kindly permit

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JKKMCT/CIRCULAR/FEB 24

31/01/2024

CIRCULAR

The Department of Computer Science and Engineering is planning to organize a Certificate Program on **"CUTTING EDGE MOBILE APPLICATIONS DEVELOPMENT USING KOTLIN"** (36 Hours) for the benefit of the students from **05.02.2024 (Monday)** to **10.02.2024 (Tuesday)**. Students those who are willing to attend the Program can enroll their names to their class in-charges respectively on or before **02.02.2024**.

Principal

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Principal

Principal

**J.K.K. Munirajah College of Technology
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T.N. Palayam, Gobi (Tk),
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Copy To,

All the HODs and Staff Members,
All the Students,
Notice Board, File



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAM SYLLABUS

Name of the Certificate Program : **CUTTING EDGE MOBILE APPLICATIONS**
DEVELOPMENT USING KOTLIN

Program Code : 24CSECEMADKCP02

Name of the Program Coordinator: S.DHARANITHARAN

Academic Year: 2023-2024

Program Contents

Total Hours: 36

Chapter 1: Introduction to Android App Development & Kotlin Basics


- Overview of Android Operating System
- Android Architecture: Activities, Services, Broadcast Receivers, Content Providers
- Setting up the Android Development Environment (Android Studio, SDK, Emulator)
- Introduction to Kotlin and its Features for Android Development
- Kotlin vs Java for Android Development
- Kotlin Collections (List, Set, Map), Variables, Data Types, Constants, and Control Flow

Chapter 2: Android UI Fundamentals & Layouts

- Introduction to Android Views and View Groups
- Layouts in Android: Linear Layout, Relative Layout, Constraint Layout
- Using Text View, Button, Edit Text, Image View, and other basic UI components
- Introduction to Material Design components (Buttons, Cards, Text Fields)
- Creating Layouts using XML
- Using Constraint Layout for flexible and responsive UI designs
- Styling and Themes in Android (Color, Text, and Drawable resources)
- Handling UI events: Button click, Text input, etc

Chapter 3: Activities, Intents, and Data Persistence

- Understanding Activities and their lifecycle (onCreate, onStart, onResume, etc.)
- Managing multiple activities in an app and navigating between them with Intents
- Passing data between activities using Intent extras
- Intent filters and implicit/explicit intents
- Introduction to Shared Preferences for storing simple data
- Saving and retrieving data using SQLite databases
- Working with Android's Room Database for local storage


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- Introduction to Content Providers for accessing shared data

Chapter 4: Advanced UI Components & Working with APIs

- RecyclerView for displaying lists of items efficiently
- Using adapters with RecyclerView (Array Adapter, Custom Adapter)
- Working with Card View for displaying items in a card format
- Handling complex UI components: Dialogs, Date Pickers, Time Pickers
- Introduction to REST APIs and HTTP Requests
- Using Retrofit for network communication in Android
- Parsing JSON data using Gson or Moshi
- Implementing asynchronous tasks with Coroutines for API calls

Chapter 5: Background Tasks & Notifications

- Introduction to Services in Android (foreground and background services)
- Using Work Manager for managing background tasks efficiently
- Using AsyncTask, Thread, and Handler for background processing
- Best practices for managing background work
- Understanding Notification Manager and Notification Channels
- Creating and displaying notifications (local and push notifications)
- Handling notification clicks and interacting with the app
- Implementing custom notifications and notifications with images

Chapter 6: Publishing App & Final Project

- Preparing your app for release (signing APK, creating keystore)
- Understanding AndroidManifest.xml and Gradle for app configuration
- Debugging apps: Using Logcat, breakpoints, and Android Profiler
- Testing your app on different devices and configurations
- Building a complete Android application with the concepts learned throughout the course
- Presenting and demonstrating the app
- Best practices for Android development and Kotlin
- Introduction to app deployment on Google Play Store

Prepared by:

Name: **S. DHARAMITHARAN**

Designation: **AP/CSE**
S. Dharmitharan
PROGRAM COORDINATOR

Principal
J.K.K. Munirajah College of Technology
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAM SCHEDULE

Name of the Certificate Program : CUTTING EDGE MOBILE APPLICATIONS

DEVELOPMENT USING KOTLIN

Program Code : 24CSECEMADKCP02

Name of the Program Coordinator : S.DHARANITHARAN

Program Period : 05.02.2024 to 10.02.2024

Date/ Time	9:30AM to 11:30AM (2 Hours)		11.45 AM to 12.45PM (1 Hour)		1:30 PM to 4.30 PM (3 Hours)
05.02.2024	Overview of Android Operating System, Android Architecture: Activities, Services, Broadcast Receivers, Content Providers		Setting up the Android Development Environment (Android Studio, SDK, Emulator), Introduction to Kotlin and its Features for Android Development		Kotlin vs Java for Android Development, Kotlin Collections (List, Set, Map), Variables, Data Types, Constants, and Control Flow
06.02.2024	Introduction to Android Views and View Groups, Layouts in Android: Linear Layout, Relative Layout, Constraint Layout, Using Text View, Button, Edit Text, Image View, and other basic UI components	BREAK	Introduction to Material Design components (Buttons, Cards, Text Fields), Creating Layouts using XML	LUNCH	Using Constraint Layout for flexible and responsive UI designs, Styling and Themes in Android (Color, Text, and Drawable resources), Handling UI events: Button click, Text input, etc
07.02.2024	Understanding Activities and their lifecycle (onCreate, onStart, onResume, etc.), Managing multiple activities in an app and navigating between them with Intents, Passing data between		Intent filters and implicit/explicit intents, Introduction to Shared Preferences for storing simple data		Saving and retrieving data using SQLite databases, Working with Android's Room Database for local storage, Introduction to Content Providers for accessing shared data


Principal
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	activities using Intent extras		
08.02.2024	Recycler View for displaying lists of items efficiently, Using adapters with Recycler View (Array Adapter, Custom Adapter), Working with Card View for displaying items in a card format	Handling complex UI components: Dialogs, Date Pickers, Time Pickers, Introduction to REST APIs and HTTP Requests	Using Retrofit for network communication in Android, Parsing JSON data using Gson or Moshi, Implementing asynchronous tasks with Coroutines for API calls
09.02.2024	Introduction to Services in Android (foreground and background services), Using Work Manager for managing background tasks efficiently, Using AsyncTask, Thread, and Handler for background processing	Best practices for managing background work, Understanding Notification Manager and Notification Channels	Creating and displaying notifications (local and push notifications), Handling notification clicks and interacting with the app, Implementing custom notifications and notifications with images
10.02.2024	Preparing your app for release (signing APK, creating keystore), Understanding AndroidManifest.xml and Gradle for app configuration, Debugging apps: Using Logcat, breakpoints, and Android Profiler	Testing your app on different devices and configurations, Building a complete Android application with the concepts learned throughout the course	Presenting and demonstrating the app, best practices for Android development and Kotlin, Introduction to app deployment on Google Play Store

G. Ananth
PROGRAM COORDINATOR

[Signature]
HOD

[Signature]
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Principal
J.K.K. Munirajah College of Technology
(Autonomous)
T.N. Palayam, Gobi (Tk),
Erode (Dt) - 638 506

Requisition Letter

From,

Dr.C.Saravanan,

Head of the Department,

Department of Electrical and Electronics Engineering,

JKK Munirajah college of Technology,

T.N. Palayam.

To,

The Principal,

JKK Munirajah college of Technology,

T.N. Palayam.

Respected Sir,

Sub: Seeking permission for conducting a Certificate Programme-Reg

We have planned to conduct a certificate Programme for II-, III- and IV-year Electrical and Electronics Engineering students on "Energy Audit & Testing Commissioning" from 21.08.2023 to 26.08.2023 by Programme coordinator Mr. T.S.Thambiran, So, I request you to kindly provide permission to conduct the certificate Programme.

Thanking You,

Place: T.N.Palayam

Date: 11.08.2023

Permitted
[Signature]
11/08/23

Yours Truly,

[Signature]
11/08/23
(Dr.C.Saravanan)

[Signature]
PRINCIPAL
JKK MUNIRAJAH COLLEGE
OF TECHNOLOGY
T.N. PALAYAM (Po)-638 508.
GOBI (TK), ERODE (Dt).



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JKKMCT/CIRCULAR/AUG-22

DATE: 14/08/2023

CIRCULAR

The Department of Electrical and Electronics Engineering is planning to organize a Certificate Programme on **"ENERGY AUDIT & TESTING COMMISIONING"** (36 Hours) for the benefit of the students from **21/08/2023 (Monday)** to **26/08/2023 (Saturday)**. Students those who are willing to attend the course can enroll their names to their class in-charge respectively on or before **18/08/2023**.





Copy To,

All the HODs and Staff Members,

The Student's circulation,

Notice Boards and File


14/8/23
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

PROGRAMME SYLLABUS

Programme Name: **ENERGY AUDIT & TESTING COMMISSIONING**

Programme Code: 23EEEATCP01

Programme Coordinator Name: Mr. T.S.Thambiran. M.E.,

Total Hours: 36 Hrs

CHAPTER 1:

Introduction to Energy Management

- Importance of Energy Conservation
- Energy Sources and their Utilization
- Energy Efficiency Concepts
- National and International Energy Policies
- Role of Energy Auditors and Commissioning Engineers

CHAPTER 2:

Energy Audit Fundamentals

- Types of Energy Audits
- Energy Audit Methodology
- Data Collection and Analysis
- Energy Balance and Sankey Diagrams
- Energy Performance Indicators (EPIs)
- Benchmarking and Target Setting

CHAPTER 3:

Electrical Systems

- Power Quality Analysis

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- Motor Efficiency and Power Factor Improvement
- Transformer Efficiency and Losses
- Lighting Systems and Controls
- Electrical Distribution Systems

CHAPTER 4:

HVAC Systems

- HVAC System Components and Operation
- Air and Water Systems Analysis
- Controls and Instrumentation
- Energy Efficiency Measures for HVAC Systems

CHAPTER 5:


Building Systems

- Building Envelope and Insulation
- Lighting and Daylighting
- HVAC Systems Integration
- Building Automation Systems (BAS)
- Energy-Efficient Building Design and Retrofitting

CHAPTER 6:

Industrial Processes

- Process Heating and Cooling
- Compressed Air Systems


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- Steam Systems
- Material Handling Systems
- Process Optimization and Waste Heat Recovery

CHAPTER 7:

Testing and Commissioning

- Pre-Commissioning Activities
- System Testing and Performance Verification
- Commissioning Procedures and Documentation
- Troubleshooting and Corrective Actions
- Post-Commissioning Monitoring and Evaluation

CHAPTER 8:


Instrumentation and Measurement

- Measurement Techniques and Instruments
- Data Acquisition and Analysis
- Uncertainty Analysis
- Calibration and Maintenance of Instruments

CHAPTER 9:

Energy Management Software

- Energy Management Information Systems (EMIS)
- Data Logging and Monitoring
- Energy Performance Tracking


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- Reporting and Analysis Tools

CHAPTER 10:

Legal and Regulatory Framework

- Energy Conservation Act and Rules
- Performance Contracting
- Labeling and Standards
- Financing Mechanisms for Energy Efficiency Projects

Prepared by:

Name: Mr.T.S.Thambiran, M.E.,

Designation: Asst.Prof/EEE Department

PROGRAMME COORDINATOR

HOD

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

PROGRAMME SCHEDULE: ENERGY AUDIT & TESTING COMMISSIONING

SCHEDULE PERIOD: 21.08.2023 TO 26.08.2023

Dates/ Duration	09:30 AM to 11:30 AM (02.00 hr)		11.45 AM to 1.15 PM (01.30 hr)		2:00 PM to 4.20 PM (02.30hr)
21.08.2023	Registration and Inauguration		Introduction about Energy Audit and Testing commissioning		Session 1 Introduction to Energy Management <ul style="list-style-type: none"> ❖ Importance of Energy Conservation ❖ Energy Sources and their Utilization ❖ Energy Efficiency Concepts
22.08.2023	Session 2 Energy Audit Fundamentals <ul style="list-style-type: none"> ❖ Types of Energy Audits ❖ Energy Audit Methodology ❖ Data Collection and Analysis 	BREAK	Session 3 <ul style="list-style-type: none"> ❖ Energy Balance and Sankey Diagrams ❖ Energy Performance Indicators (EPIs) ❖ Benchmarking and Target Setting 	LUNCH	Session 4 Electrical Systems <ul style="list-style-type: none"> ❖ Power Quality Analysis ❖ Motor Efficiency and Power Factor Improvement ❖ Transformer Efficiency and Losses ❖ Lighting Systems and Controls
23.08.2023	Session 5 HVAC Systems <ul style="list-style-type: none"> ❖ HVAC System Components and Operation 		Session 6 Building Systems <ul style="list-style-type: none"> ❖ Building Envelope and 		Session 7 Industrial Processes <ul style="list-style-type: none"> ❖ Process Heating and Cooling


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	<ul style="list-style-type: none"> ❖ Air and Water Systems Analysis ❖ Controls and Instrumentation ❖ Energy Efficiency Measures for HVAC Systems 		<ul style="list-style-type: none"> Insulation ❖ Lighting and Daylighting ❖ HVAC Systems Integration ❖ Building Automation Systems (BAS) 		<ul style="list-style-type: none"> ❖ Compressed Air Systems ❖ Steam Systems ❖ Material Handling Systems
24.08.2023	<p style="text-align: center;">Session 8 Testing and Commissioning</p> <ul style="list-style-type: none"> ❖ Pre-Commissioning Activities ❖ System Testing and Performance Verification ❖ Commissioning Procedures and Documentation 		<p style="text-align: center;">Session 9</p> <ul style="list-style-type: none"> ❖ Troubleshooting and Corrective Actions ❖ Post-Commissioning Monitoring and Evaluation ❖ 		<p style="text-align: center;">Session 10</p> <p>Instrumentation and Measurement</p> <ul style="list-style-type: none"> ❖ Measurement Techniques and Instruments ❖ Data Acquisition and Analysis
25.08.2023	<p style="text-align: center;">Session 11</p> <ul style="list-style-type: none"> ❖ Uncertainty Analysis ❖ Calibration and Maintenance of Instruments 		<p style="text-align: center;">Session 12</p> <p>Energy Management Software</p> <ul style="list-style-type: none"> ❖ Energy Management Information Systems (EMIS) ❖ Data Logging and Monitoring 		<p style="text-align: center;">Session 13</p> <ul style="list-style-type: none"> ❖ Energy Performance Tracking ❖ Reporting and Analysis Tools


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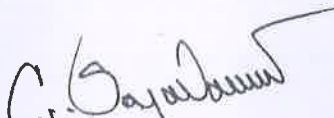
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26.08.2023	Session 14 Legal and Regulatory Framework <ul style="list-style-type: none">❖ Energy Conservation Act and Rules❖ Performance Contracting❖ Labeling and Standards❖ Financing Mechanisms for Energy Efficiency Projects	Session 15 Practical Sessions and Case Studies: <ul style="list-style-type: none">❖ Conducting Energy Audits in Different Sectors❖ Analyzing Energy Data and Identifying Savings Opportunities❖ Developing Energy Conservation Measures	Session 16 <ul style="list-style-type: none">❖ Commissioning HVAC Systems❖ Testing Electrical Equipment❖ Preparing Energy Audit Reports and Proposals
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PROGRAMME COORDINATOR


HOD


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GOBI (TK), ERODE (Dt).

Requisition Letter

From,

Head of the Department,

Department of Electronics and Communication Engineering,

J.K.K.Munirajah College of Technology,

T.N.Palayam.

Permitted
[Signature]

To,

The Principal,

J.K.K.Munirajah College of Technology,

T.N.Palayam.

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program-Reg

We have planned to conduct a certificate program for II, III and IV-year ECE students on **"PCB Designing and Fabrication"** from **11.12.2023 to 16.12.2023** by program coordinator **Mrs.M.Sivaranjani** AP/ECE. So, I request you to kindly provide permission to conduct the certificate program.

Thanking You,

Yours Truly,

Place: T.N.Palayam

Date: 30.11.2023

[Signature]

Principal

**J.K.K.Munirajah College of Technology
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[Signature]



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JKKMCT/CIRCULAR/96/DEC-2023

DATE: 01/12/2023

CIRCULAR

The Department of Electronics and Communication Engineering is planning to organize a Certificate Program on "**PCB Designing and Fabrication**" (36 Hours) for the benefit of the students from **11.12.2023 (Monday) to 16.12.2023 (Saturday)**. Students those who are willing to attend the program can enroll their names to their class in-charges respectively on or before 04.12.2023.



11/12/23
PRINCIPAL

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All the HODs and Staff Members,

The Student's circulation,

Notice boards and File copy


Principal
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Department of Electronics and Communication Engineering

PROGRAM SYLLABUS

Name of the Certificate Program : **PCB Designing and Fabrication**
Program Code : 22ECEPDFCP01
Name of the Program Coordinator : Mrs.M.Sivaranjani

Academic Year: 2023-2024

Program Contents

Total Hours: 36

Chapter 1 : Introduction to PCB designing concepts

- Introduction to PCB
- Single layer PCBs, Multilayer PCBs and Multiwire PCB
- Board Outlines and Cutouts
- Drill Details
- Components Outlines
- PCB Materials
- PCB Types
- Rules for Track
- Application Circuits
- Study of IPC Standards

Chapter 2 : Components, devices and their packages

- Fundamental of electronic components
- Component Package Types
- Basic electronic circuits
- Understanding the schematic Entry
- Creating Library & Components
- Drawing a Schematic
- PCB Board designing
- Layout planning
- Schematic to PCB Conversion
- General rules and parameters

Principal

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Chapter 3 : Design and Development tools

- Introduction to Electronic design automation (EDA) tools for PCB designing
- Brief Introduction of various simulators
- SPICE and PSpice Environment
- Introduction and Working of PROTEUS
- Selecting the Components Footprints as per design
- Making New Footprints, Assigning Footprint to components
- Net listing
- PCB Layout Designing
- Auto routing and manual routing
- Assigning specific text (silkscreen) to design
- Creating report of design
- Creating manufacturing data (GERBER) for design.

Chapter 4 : Printing process and quality control

- Introduction printed circuit board production techniques
- Photo printing
- Film -master production
- Reprographic camera
- Basic process for double sided PCBs
- Screen printing process
- Plating , relative performance
- Quality control
- Etching machines
- Solders alloys, fluxes, soldering techniques.
- Soldering methods
- Types soldering irons
- PCB soldering
- different soldering techniques
- Necessary soldering equipment
- Steps to PCB soldering

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Chapter 5 : PCB Designing Practice

- Making the schematic of Academic and Industrial projects
- PCB Designing of these projects
- Soldering and De-soldering of components as per Design
- Testing and Troubleshooting Methods
- Analyzing and validating power performance.
- Hands on project

Prepared by:

Name: Mrs.M.Sivaranjani

Designation: AP/ ECE

PROGRAM COORDINATOR

HOD

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Principal

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Department of Electronics and Communication Engineering



Academic Year 2023-2024

Certificate Program on "PCB Designing and Fabrication"

Schedule Plan

Dates	09:30 AM to 11:30AM (2 Hrs)		11.45 AM to 1.15 PM (1.30 Hrs)		2:00 PM to 4.30 PM (2.30 Hrs)
11.12.2023	Introduction to PCB Technology	BREAK	PCB Materials	LUNCH	PCB Types
12.12.2023	Description of PCB Layers		Rules for Track and Application Circuits		Study of IPC Standards, Component Package Types
13.12.2023	Schematic to PCB Conversion		PCB Designing Flow Chart		Introduction to Development Tools
14.12.2023	SPICE and PSpice Environment		PCB Layout Designing		Printing Process
15.12.2023	Screen printing process		Quality control		Troubleshooting PCB
16.12.2023	Making the schematic of Academic and Industrial projects		PCB Designing of these projects		Hands on training Questions and feedback

PROGRAM COORDINATOR

HOD

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Principal

J.K.K.Munirajah College of Technology
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T.N.Palayam, Gobi (Tk),
Erode (Dt) - 638 506

REQUISITION LETTER

From,

Head of the Department,

Mechanical Engineering,

J.K.K Munirajah College of Technology,

T.N.Palayam.

To,

The Principal,

J.K.K Munirajah college of Technology,

T.N.Palayam.

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program-reg

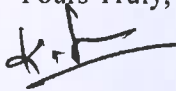
We have planned to conduct a certificate Program for I and II year ME-Manufacturing and II, III and IV year BE-Mechanical students on "Machine Learning Applications in Industry 5.0" from 20.11.2023 to 25.11.2023 by program coordinator Mr.M.SIVAKUMAR, M.E, AP/MECH. So, I request you to kindly provide permission to conduct the certificate Program.

Thanking You,


Place: T.N.Palayam

Date: 03.11.2023

Yours Truly,


[K. SRIRAM]
HOD/MECH

*Permitted
Sivam
3/11/23*


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JKKMCT/CIRCULAR/195/NOV-23

06.11.2023

CIRCULAR


The Department of Mechanical Engineering is planning to organize a Certificate Program on **"MACHINE LEARNING APPLICATIONS IN INDUSTRY 5.0"** for the benefit of the students from 20.11.2023 (Monday) to 25.11.2023 (Saturday). Students those who are willing to attend this certificate program can enroll their names to their class in-charges respectively on or before 10.11.2023.


PRINCIPAL

Copy To

All the HODs and Staff Members,

All the students,


PRINCIPAL
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DEPARTMENT OF MECHANICAL ENGINEERING

ACADEMIC YEAR: 2023-2024

Program Name : MACHINE LEARNING APPLICATIONS IN

INDUSTRY 5.0

Program Code : 23MEMLAICP01

Program Coordinator Name : Mr.SIVAKUMAR, M.E **Total Hours:** 36 hrs

PROGRAM SYLLABUS

CHAPTER 1: INTRODUCTION TO INDUSTRY 5.0


- Evolution from Industry 4.0 to Industry 5.0: Human-Centric and Sustainability Focus
- Key Pillars of Industry 5.0
- Role of Machine Learning in Advancing Industry 5.0
- Human-Machine Collaboration: Co-Bots and AI
- Enhanced Decision-Making through AI and ML
- Case Studies: Real-World Applications of Industry 5.0

CHAPTER 2: ENABLING TECHNOLOGIES FOR INDUSTRY 5.0

- Introduction to Edge and Fog Computing
- Advanced IoT Systems: Smart Manufacturing Networks
- Role of Cloud and Edge AI in Manufacturing
- Data Analytics for Real-Time Decision Support
- Advanced Machine Learning Algorithms for Hyper-Personalization
- AI-Powered Quality Assurance and Predictive Maintenance

CHAPTER 3: DIGITAL TWIN AND AUGMENTED INTELLIGENCE

- Digital Twin Integration with Machine Learning
- Predictive Analytics through Digital Twin Models
- Enhancing Human Intelligence with AI: Decision Augmentation
- Tools and Platforms for Building Digital Twins in Industry 5.0
- Case Studies: ML-Driven Digital Twin Deployments


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CHAPTER 4: INTELLIGENT AUTOMATION AND ROBOTICS

- Machine Learning in Robotics: Training Collaborative Robots (Cobots)
- AI-Driven Autonomous Vehicles and Navigation Systems
- Machine Vision Enhanced by ML for Inspection and Quality Control
- Real-Time Robotic Process Automation with ML Integration
- Case Studies: Intelligent Robotics in Smart Factories

CHAPTER 5: CYBERSECURITY AND TRUST IN INDUSTRY 5.0

- Cybersecurity Challenges in AI-Driven Manufacturing
- Securing Machine Learning Models Against Adversarial Attacks
- Blockchain and Federated Learning for Secure Data Sharing
- Trustworthy AI in Smart Manufacturing Systems
- Standards and Protocols for Cybersecurity in Industry 5.0

CHAPTER 6: SUSTAINABLE AND HUMAN-CENTRIC MANUFACTURING

- Leveraging ML for Energy Efficiency and Resource Optimization
- AI-Driven Waste Management and Circular Economy Practices
- Building Adaptive and Resilient Supply Chains with ML
- Disaster Recovery and Risk Management Using Machine Learning
- Social and Ethical Considerations in Human-Centric Manufacturing
- Case Studies: Sustainability Success Stories in Industry 5.0

Prepared by:

Name : Mr.M.SIVAKUMAR, M.E

Designation : Assistant Professor /Mechanical

PROGRAM COORDINATOR

HOD

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DEPARTMENT OF MECHANICAL ENGINEERING

ACADEMIC YEAR: 2023-2024

PROGRAM SCHEDULE

Title of the Course : MACHINE LEARNING APPLICATIONS IN INDUSTRY 5.0

Period : 20.11.2023 to 25.11.2023

Date	09:30 AM to 11:30 AM (2 Hrs)	BREAK	11.45 AM to 1.45 PM (2 Hrs)	LUNCH	2:30 PM to 4.30 PM (2 Hrs)
20.11.2023	Evolution from Industry 4.0 to Industry 5.0: Human-Centric and Sustainability Focus Key Pillars of Industry 5.0		Role of Machine Learning in Advancing Industry 5.0 Human-Machine Collaboration: Co-Bots and AI		Enhanced Decision-Making through AI and ML Case Studies: Real-World Applications of Industry 5.0
21.11.2023	Introduction to Edge and Fog Computing Advanced IoT Systems: Smart Manufacturing Networks		Role of Cloud and Edge AI in Manufacturing Data Analytics for Real-Time Decision Support		Advanced ML Algorithms for Hyper-Personalization AI-Powered Quality Assurance and Predictive Maintenance
22.11.2023	Digital Twin Integration with Machine Learning Predictive Analytics through Digital Twin Models		Enhancing Human Intelligence with AI: Decision Augmentation Tools and Platforms for Building Digital Twins		Case Studies: ML-Driven Digital Twin Deployments
23.11.2023	ML in Robotics: Training Collaborative Robots (Cobots) AI-Driven Autonomous Vehicles and Navigation Systems		Machine Vision Enhanced by ML for Inspection and Quality Control Real-Time Robotic Process Automation with ML Integration		Case Studies: Intelligent Robotics in Smart Factories
24.11.2023	Cybersecurity Challenges in AI-Driven Manufacturing Securing Machine Learning Models Against Adversarial Attacks		Cybersecurity Challenges in AI-Driven Manufacturing Securing Machine Learning Models Against Adversarial Attacks		Blockchain and Federated Learning for Secure Data Sharing Trustworthy AI in Smart Manufacturing Systems
25.11.2023	Leveraging ML for Energy Efficiency and Resource Optimization AI-Driven Waste Management and Circular Economy Practices		Building Adaptive and Resilient Supply Chains with ML Disaster Recovery and Risk Management Using ML		Social and Ethical Considerations in Human-Centric Manufacturing Case Studies: Sustainability Success Stories in Industry 5.0


PROGRAM COORDINATOR


HOD


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REQUISITION LETTER

From,

Head of the Department,

Information Technology,

JKK Munirajah College of Technology,

T.N.Palayam.

To,

The Principal,

JKK Munirajah College of Technology,

T.N.Palayam.

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program- Reg


We have planned to conduct a certificate program for II and III- year Information Technology students on **"ETHICAL HACKING AND PENETRATION TESTING"** from **13.02.2024 to 18.02.2024** by Program Coordinator **S. KANIMOZHI, M.E** So, I request you to kindly provide a permission to conduct the certificate program.

Thanking You,

Yours Truly,

Place: T.N.Palayam

Date:08.02.2024


Principal
J.K.K.Munirajah College of Technology
(Autonomous)
T.N.Palayam, Gobi (Tk),
Erode (Dt) - 638 506

Handwritten note: Sir kindly permit

*Handwritten note: Permitted
JKK
8/2/24*



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JKKMCT/CIRCULAR/FEB-24

09/02/2024

CIRCULAR

The Department of Information Technology is planning to organize a Certificate Program on **"ETHICAL HACKING AND PENETRATION TESTING"** (36 Hours) for the benefit of the students from 13.02.2024 (Monday) to 18.02.2024 (Tuesday). Students those who are willing to attend the Program can enroll their names to their class in-charges respectively on or before 10.02.2024

Principal

**J.K.K.Munirajah College of Technology
(Autonomous)
T.N.Palayam, Gobi (Tk)
Erode (Dt) - 638 506**

Principal

**J.K.K.Munirajah College of Technology
(Autonomous)
T.N.Palayam, Gobi (Tk),
Erode (Dt) - 638 506**

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All the HODs and Staff Members,
All the Students,
Notice Board, File





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DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAM SYLLABUS

Name of the Certificate Program : ETHICAL HACKING AND PENETRATION TESTING

Program Code : 24ITEHAPTCP02

Name of the Program Coordinator: S. KANIMOZHI

Academic Year: 2023-2024

Program Contents

Total Hours: 36

Chapter 1: Introduction to Ethical Hacking & Penetration Testing

- Ethical Hacking and its Types of Hackers (White-hat, Black-hat, Grey-hat)
- Ethical Hacking Process and Legal Considerations
- Key Principles of Ethical Hacking (Confidentiality, Integrity, Availability)
- What is Penetration Testing?
- Penetration Testing Phases (Reconnaissance, Scanning, Exploitation, Post-exploitation, Reporting)
- Difference Between Penetration Testing and Vulnerability Assessment
- Tools Overview (Kali Linux, Metasploit, Burp Suite, etc.)

Chapter 2: Reconnaissance and Foot printing

- Types of Information Gathering: Active vs Passive
- Foot printing Techniques (DNS Interrogation, WHOIS Lookups, IP Range Identification)
- Tools for Reconnaissance (Nmap, Netcat, WHOIS, Nslookup)
- Port Scanning (Nmap Basics, Service Enumeration)
- OS Fingerprinting
- Network Enumeration: Identifying Live Hosts, Open Ports, and Services

Chapter 3: Vulnerability Analysis and Exploitation

- Vulnerability Scanning and Assessment Tools (Nessus, OpenVAS)
- Identifying Common Vulnerabilities (CVEs, OWASP Top 10)
- Risk Assessment Techniques
- Exploiting Vulnerabilities (Buffer Overflow, SQL Injection, XSS, etc.)

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- Metasploit Framework for Exploitation
- Creating and Using Payloads (Reverse Shells, Bind Shells)

Chapter 4: Post-Exploit Post-Exploitation and Privilege Escalation

- Maintaining Access: Backdoors, Web Shells
- Gathering Data from Compromised Systems
- Escalating Privileges: Local and Remote Privilege Escalation
- Common Web Application Vulnerabilities (SQL Injection, Cross-Site Scripting)
- Tools for Web Application Testing (Burp Suite, OWASP ZAP, Nikto)
- Web Shells and Exploitation Methods

Chapter 5: Wireless Network Penetration Testing

- Introduction to Wireless Networks and Protocols (Wi-Fi, Bluetooth)
- Common Wireless Network Vulnerabilities (WEP, WPA, WPA2)
- Attacks on Wireless Networks: Man-in-the-Middle, DoS, Evil Twin
- Air crack-ng Suite for Wireless Network Testing
- Cracking WEP/WPA Keys
- Sniffing and Decrypting Wireless Traffic (Wireshark, Kismet)

Chapter 6: Reporting and Legal Aspects of Penetration Testing

- Importance of Reporting in Ethical Hacking
- Structure of a Penetration Testing Report (Executive Summary, Findings, Recommendations)
- Writing Detailed Reports for Clients
- Understanding Legal Boundaries and Compliance (GDPR, HIPAA, PCI-DSS)
- Importance of Authorization for Penetration Testing
- Ethical Responsibility and Professionalism

Prepared by:

Name: **S. KANIMOZHI**

Designation: **AP/IT**

S. Kanimozhi
PROGRAM COORDINATOR

[Signature]
HOD

[Signature]

Principal
J.K.K. Munirajah College of Technology
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T.N. Palayam, Gobi (Tk),
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[Signature]
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DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAM SCHEDULE


Name of the Certificate Program : **ETHICAL HACKING AND PENETRATION TESTING**

Program Code : 24ITEHAPTCP02

Name of the Program Coordinator : S. KANIMOZHI

Program Period : 13.02.2024 to 18.02.2024

Date/ Time	9:30AM to 11:30AM (2 Hours)		11.45 AM to 12.45PM (1 Hour)		1:30 PM to 4.30 PM (3 Hours)
13.02.2024	Ethical Hacking and its Types of Hackers (White-hat, Black-hat, Grey-hat), Ethical Hacking Process and Legal Considerations		Key Principles of Ethical Hacking (Confidentiality, Integrity, Availability), What is Penetration Testing?		Penetration Testing Phases (Reconnaissance, Scanning, Exploitation, Post-exploitation, Reporting), Difference Between Penetration Testing and Vulnerability Assessment, Tools Overview (Kali Linux, Metasploit, Burp Suite, etc.)
14.02.2024	Types of Information Gathering: Active vs Passive, Foot printing Techniques	BREAK	Tools for Reconnaissance (Nmap, Netcat, WHOIS, Nslookup), Port Scanning (Nmap Basics, Service Enumeration)	LUNCH	OS Fingerprinting, Network Enumeration: Identifying Live Hosts, Open Ports, and Services
15.02.2024	Vulnerability Scanning and Assessment Tools (Nessus, OpenVAS), Identifying Common Vulnerabilities (CVEs, OWASP Top 10)		Risk Assessment Techniques, Exploiting Vulnerabilities (Buffer Overflow, SQL Injection, XSS, etc.)		Metasploit Framework for Exploitation, Creating and Using Payloads (Reverse Shells, Bind Shells)


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16.02.2024	Maintaining Access: Backdoors, Web Shells, Gathering Data from Compromised Systems	Escalating Privileges: Local and Remote Privilege Escalation, Common Web Application Vulnerabilities (SQL Injection, Cross-Site Scripting)	Tools for Web Application Testing (Burp Suite, OWASP ZAP, Nikto), Web Shells and Exploitation Methods
17.02.2024	Introduction to Wireless Networks and Protocols (Wi-Fi, Bluetooth), Common Wireless Network Vulnerabilities (WEP, WPA, WPA2)	Attacks on Wireless Networks: Man-in-the-Middle, DoS, Evil Twin, Air crack-ng Suite for Wireless Network Testing	Cracking WEP/WPA Keys, Sniffing and Decrypting Wireless Traffic (Wireshark, Kismet)
18.02.2024	Importance of Reporting in Ethical Hacking, Structure of a Penetration Testing Report (Executive Summary, Findings, Recommendations)	Writing Detailed Reports for Clients, Understanding Legal Boundaries and Compliance (GDPR, HIPAA, PCI-DSS)	Importance of Authorization for Penetration Testing, Ethical Responsibility and Professionalism

Principal

**J.K.K. Munirajah College of Technology
(Autonomous)
T.N. Palayam, Gobi (Tk),
Erode (Dt) - 638 506**

PROGRAM COORDINATOR

HOD

PRINCIPAL

REQUISITION LETTER

From
Head of the Department,
Master of Computer Applications,
JKK Munirajah College of Technology,
T.N.Palayam.

To
The Principal,
JKK Munirajah College of Technology,
T.N.Palayam.

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program- Reg

We have planned to conduct a certificate program for I, II year Master of Computer Applications students on “**Generative AI and Prompt Engineering**” from 02.10.2023 to 07.10.2023 by Program Coordinator **Mr.I.MANIKANDAN** AP/MCA. So, I request you to kindly provide permission to conduct the certificate program.

Thanking You,

Place: T.N. Palayam

Date: 25/09/2023

Permitted
[Signature]
25/9/23

[Signature]
PRINCIPAL
JKK MUNIRAJAH COLLEGE
OF TECHNOLOGY
T.N. PALAYAM (Po)-638 506.
GOBI (Tk), ERODE (Dt).

[Signature]
25/9/23
Very kindly permit

[Signature]

Yours Truly,

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OF TECHNOLOGY
T.N. PALAYAM (Po)-638 506.
GOBI (Tk), ERODE (Dt).



J.K.K. MUNIRAJAH COLLEGE OF TECHNOLOGY
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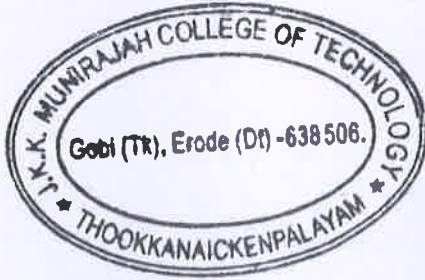


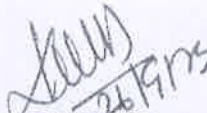
JKKMCT/CIRCULAR/SEP-2023

26/09/2023


CIRCULAR

The Department of Computer Applications is planning to organize a Certificate Program on **"Generative AI and Prompt Engineering"** (36 Hours) for the benefit of the students from **02.10.2023 (Monday) to 07.10.2023 (Friday)**. Students those who are willing to attend the Program can enroll their names to their class in-charges respectively on or before **28.09.2023**.




26/9/23
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DEPARTMENT OF COMPUTER APPLICATIONS
PROGRAM SYLLABUS

Name of the Certificate Program : **Generative AI & Prompt Engineering**

Program Code : 23MCAGAIPECP01

Name of the Program Coordinator : Mr.I.MANIKANDAN AP/MCA

Academic Year:2023-2024

Program Contents

Total Hours: 36

Chapter 1: Generative AI Models

- Introduction to Generative AI Models
- Generative Adversarial Networks (GANs)
- Variational Autoencoders (VAEs)
- Advanced Generative Models
- Transformer Models (e.g., GPT, BERT, T5)
- Diffusion Models (e.g., DALL·E, Stable Diffusion, MidJourney)
- Fine-tuning and Transfer Learning in Generative AI
- Hands-on (Advanced Model Exploration)

Chapter 2: Advanced Prompt Engineering Techniques

- Contextual Framing
- Temperature Control and Sampling Parameters
- Chain-of-Thought Prompting
- Multi-modal Prompt Engineering
- Few-shot and zero-shot scenarios with GPT-4/ChatGPT

Chapter 3: Generative AI for Business and Creativity

- Introduction to Generative AI in Business and Creativity
- AI-Powered Content Creation for Marketing and Advertising
- AI in Product Design and Development
- Creative Industries: AI for Writing, Art, and Music
- AI in Business Operations: Automation and Data Analytics
- Ethics, Challenges, and Future Trends of Generative AI

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Chapter 4: AI, Bias, and Control Mechanisms

- Introduction to AI and Bias
- Sources and Impact of Bias in AI
- Ethical Implications of AI Bias
- Mitigating Bias in AI Models
- Control Mechanisms and Governance in AI Systems

Chapter 5: Scaling, Optimization, and Deploying Generative AI Models

- Scaling and Optimizing Generative Models
- Deploying Generative AI Models in Production
- Monitoring, Maintenance, and Performance Tuning
- Ethical Considerations and Security in AI Deployment
- Capstone Project and Future Directions

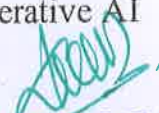
Chapter 6: Future of Generative AI and Real-world applications

- Emerging Trends in Generative AI
- Future Technologies in Generative AI
- Final Hands-on Project
- Q&A and Discussion on Career Opportunities in Generative AI

Prepared by : Mr.I.MANIKANDAN

Name : Mr.I.MANIKANDAN

Designation : AP/MCA


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OF TECHNOLOGY
T.N. PALAYAM (Po)-638 506.
GOBI (Tk), ERODE (Dt).


PROGRAM COORDINATOR


HOD


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**DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS
PROGRAM SCHEDULE**

Name of the Certificate Program : **Generative AI & Prompt Engineering**
Program Code : **23MCAGAIPECP01**
Name of the Program Coordinator : **Mr.I.MANIKANDAN AP/MCA**
Period : **02.10.2023 to 07.10.2023**

Date/ Time	9:30AM to 11:00AM (1.30 Hours)		11.10AM to 12.40PM (1.30 Hour)		1:15 PM to 4.15 PM (3 Hours)
02-10-2023	Advanced Generative Models	BREAK	Fine-tuning and Transfer Learning in Generative AI	LUNCH	Advanced Model Exploration
03-10-2023	Zero-shot, Few-shot, and Many-shot Learning		Multi-modal prompt Engineering		Few-shot and zero-shot scenarios with GPT-4/ChatGPT
04-10-2023	Generative AI for Business and Creativity		Lab : Install Python, Jupyter Notebook, and necessary libraries		Lab : Access and set up accounts with OpenAI or Hugging Face for API access.
05-10-2023	Bias and Fairness in Generative Models		Lab : Load a pre-trained GPT-2 or GPT-3 model from Hugging Face		Lab : Fine-tune a GPT-2 or GPT-3 model on a specific domain
06-10-2023	Scaling and Optimizing Generative Models		AI models for real-world applications: Web apps, chatbots, and APIs.		The future of Generative AI: Trends, innovations, and emerging technologies
07-10-2023	Future of Generative AI and Real-world Applications		Emerging Trends in Generative AI		Q&A and Discussion on Career Opportunities in Generative AI


PROGRAM COORDINATOR


HOD


PRINCIPAL
JKK MUNIRAJAH COLLEGE
OF TECHNOLOGY
T.N. PALAYAM (Po)-638 506.
GOBI (Tk), ERODE (Dt).


PRINCIPAL

REQUISITION LETTER

From,
Head of the Department,
Department of management studies
JKK Munirajah College of Technology,
T.N.Palayam.

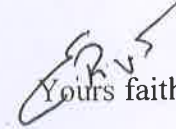
To,
The Principal,
JKK Munirajah College of Technology
T.N.Palayam.

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program- Reg

We have planned to conduct a certificate program for I, II year MBA students on **DATA SCIENCE IN BUSINESS STATISTICS & ANALYTICS** from 16:10:2023 to 21:10:2023 by the program coordinator **Mr.R.PRASANTH, MBA** So, I request you to kindly provide permission to conduct the certificate program.

Thanking you


Yours faithfully

Place: T.N.Palayam

Date: 02:10:2023


Principal
J.K.K.Munirajah College of Technology
(Autonomous)
T.N.Palayam, Gobi (Tk),
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JKKMCT/CIRCULAR/OCT -2023


04/10/2023

CIRCULAR

The department of management studies is planning to conduct a certificate program on **DATA SCIENCE IN BUSINESS STATISTICS & ANALYTICS** (36 hours) for the welfare of students from 16:10:2023 Monday to 21:10:2023 Saturday students those who are willing to join the program can enroll their names to respective class in-charges on or before 11:10:2023


PRINCIPAL

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All the HODs and Staff Members,
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Principal
J.K.K.Munirajah College of Technology
(Autonomous)
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DEPARTMENT OF MANAGEMENT STUDIES

PROGRAM SYLLABUS

Name of the Certificate Program : DATA SCIENCE IN BUSINESS STATISTICS &
ANALYTICS
Program Code : 23MBADSBACP01
Name of the Program Coordinator : Mr.R.PRASANTH, MBA

Academic Year: 2023-2024

Program Contents

Total Hours: 36

Chapter 1: FUNDAMENTALS OF BUSINESS STATISTICS

1. Learn basic statistical concepts such as mean, median, mode, standard deviation, probability distributions, and correlation.
2. Study hypothesis testing and confidence intervals for decision-making.

Chapter 2: DATA COLLECTION AND SAMPLING

1. Understand techniques for data collection (surveys, experiments, and transactional data).
2. Learn about sampling methods, sample size determination, and how to avoid biases in data collection.
3. Master preprocessing techniques: handling missing data, outliers, and data transformations.

Chapter 3: DATA VISUALIZATION AND COMMUNICATION.

1. Learn to use visualization tools such as Tableau, Power BI, or Python libraries like Matplotlib and Seaborn.
2. Focus on creating impactful dashboards and visual stories that drive decision-making.
3. Study regression analysis, time-series forecasting, and predictive modeling to anticipate trends and patterns.

Principal
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Chapter 4: DECISION ANALYTICS

1. Learn how optimization and simulation techniques are used for resource allocation and process improvement.
2. Study real-world applications such as supply chain optimization and portfolio management
3. Understand the role of big data in business and how platforms like Hadoop, Spark, and cloud services (AWS, Azure, GCP) facilitate analytics.

Chapter 5: BUSINESS USE CASES AND APPLICATIONS

1. Explore case studies where data science transformed industries like marketing (personalization), finance (fraud detection), HR (talent analytics), and operations (demand forecasting).
2. Understand ROI measurement for data science initiatives.

Prepared by:

Name Mr.R.PRASANTH, MBA

Designation: AP/MBA

Principa

**J.K.K.Munirajah College of Technology
(Autonomous)**

**T.N.Palayam, Gobi (Tk),
Erode (Dt) - 638 506**

PROGRAM CO-ORDINATOR

HOD

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DEPARTMENT OF MANAGEMENT STUDIES

PROGRAM SCHEDULE

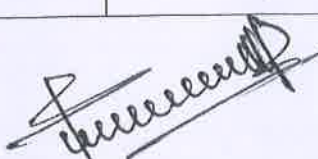
Name of the Certificate Program: DATA SCIENCE IN BUSINESS STATISTICS & ANALYTICS
Program Code : 23MBADSBCP01

Name of the Program Coordinator: Mr.R.PRASANTH, MBA

Program period: 16:10:2023 TO 21:10:2023


Academic Year: 2023-2024

Date/ Time	9:30AMto 11:30AM (2 Hours)		11.45 AM to 12.45PM (1 Hour)		1:30 PM to 4.30 PM (3 Hours)
16:10:2023	Descriptive and Inferential Statistics	BREAK	Data Collection and Cleaning	LUNCH	Data Visualization and Communication
17:10:2023	Predictive Modeling and Machine Learning		Applications in Business Decision-Making		Fundamentals of Business Statistics
18:10:2023	Data Collection and Sampling		Data Cleaning & Preparation		Data Visualization and Communication
19:10:2023	Predictive Analytics and Forecasting		Big Data and Cloud Computing		Customer Segmentation
20:10:2023	Ethical and Legal Aspects of Data Science		Sales Forecasting		Business Use Cases and Applications
21:10:2023	Marketing Campaign Effectiveness		Customer Lifetime Value (CLV) Analysis		Product Development and Innovation


PROGRAM CO-ORDINATOR


HOD


PRINCIPAL


Principal
J.K.K.Munirajah College of Technology
(Autonomous)
T.N.Palayam, Gobi (Tk),
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