MAHA BARATHI ENGINEERING COLLEGE

NH-79, SALEM-CHENNAI HIGHWAY, A.VASUDEVANUR, CHINNASALEM (TK), KALLAKURICHI (DT) 606 201.
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
2(f) & 12(B) status of UGC, New Delhi
www.mbec.ac.in | Ph: 04151-256333, 257333 | E-mail: mbec123@gmail.com

Curriculum for Value Added Courses

SYLLABUS

OBJECTIVES:

> ➤ To familiarize the various commands involved in the DesignProcess
> ➤ To understand the principle involved in evaluating the shape and dimensions ofa component to satisfy functionalrequirements.
> ➤ To learn to draw machine components as PartDesign.
> ➤ To learn to assemble the machine components

Unit – I Introduction   1T+5P

Introduction to CAD/CAM/CAE – Introduction to Creo Software – view – Quick view – Profile – Conic – Line – Point – Corner – Chamfer - Trim – Mirror – Sketcher based features – Pad – Multi pad – Pocket – Multi pocket.

Unit – II Basic Part Design   1T+5P

Shaft – Groove – Hole – Rib –Slot – Stiffener – Plane – offset – Coupling – Chamfer – Fillet – Draft.

Unit – III Shell and Pattern   1T+5P

Shell – Thread – Split – Transformations – Pattern – Constraint Toolbar – Move.

Unit – IV Sheet metal Parameters   1T+5P

Sheet metal parameters – wall – flange – hem – Hopper – rolled wall – Bending –cutting – Stamping – projections – Dimensions – tolerances – ellipse – curves.

Unit – V Revolve, Sweep and Assembly

1T+5PSurfaces – revolve – sphere – Sweep – Healing – Affinity - corner – helix – Assemble the parts made by Part Design.

Total: 30 periods

OUTCOMES:

Upon completion of this course, the students can able to successfully design machine components

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A.Vasudevanur

DEPARTMENT OF MECHANICAL ENGINEERING

Creo Advanced –LESSON PLAN

S.No	UNITS	TOPIC	HOURS	Cummulative
1.	UNIT I: Introduction	Introduction to CAD/CAM/CAE – Introduction to Creo Software – view – Quick view	1 T	1
2.		Profile – Conic – Line – Point – Corner – Chamfer - Trim – Mirror	1 T	2
3.		Sketcher based features	2 P	4
4.		Pad – Multi pad	2 P	6
1.	Unit-II: Basic Part Design	Shaft – Groove – Hole	1 T	7
2.		Rib –Slot – Stiffener	1 T	8
3.		Plane – offset	2 P	10
4.		Coupling – Chamfer	2 P	12
1.	Unit – III Shell and Pattern	Shell – Thread	1 T	13
2.		Split – Transformations	1 T	14
3.		Pattern	2 P	16
4.		Constraint Toolbar	2 P	18
1.	Unit – IV Sheet metal Parameters	Sheet metal parameters	1 T	19
2.		wall – flange – hem – Hopper – rolled wall	1 T	20
3.		Bending – cutting – Stamping	2 P	22
4.		projections – Dimensions – tolerances	2 P	24
1.	Unit – V Revolve, Sweep and Assembly	Surfaces – revolve	1 T	25
2.		sphere – Sweep	1 T	26
3.		Healing – Affinity	2 P	28
4.		Assemble the parts made by Part Design	2 P	30

Course Instructor

HOD/MECH

Course Outcomes

After successful completion of this course, students will be able to

1) Use CAD for civil engineering applications.

2) Prepare civil engineering drawings effectively and efficiently using 2D & 3D projection CAD software.

3) Prepare typical architectural, construction and building drawing as per need.

Staff In charge

HoD/Civil

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VAC564- ANSYS TRAINING AND SIMULATION

Syllabus

OBJECTIVES:

- To expose the students to different applications o f simulation and analysis tools

.LIST OF EXPERIMENTS

1. Force and Stress analysis using link elements in Trusses, cables et c.

2. Stress and deflection analysis in beams with different support conditions.

3. Stress analysis of flat plates and simple shells

.4. Stress analysis of axi – symmetric components.

5. Thermal stress and heat transfer analysis of plates.

6. Thermal stress analysis of cylindrical shells.

7. Vibration analysis of spring-mass systems.

8. Model analysis of Beams.

9. Harmonic, transient and spectrum analysis of simple systems.

TOTAL: 40 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

- analyze the stresses and strains induced in plates, brackets and beams and heat transfer problems.CO3 calculate the natural frequency and mode shape analysis of 2D components and beam

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ANSYS Workbench Syllabus

Lesson plan

Session	Topics
	Chapter 1: Introduction to CAE
	Introduction to CAE
	General working of FEA
	Stiffness matrix
	Boundary conditions
	Elements and Element Shapes
	General procedure to conduct FEA
	FEA software
	Key Assumptions in FEA
	Types of Engineering Analysis
	Classification of materials
	Chapter 2: Introduction to ANSYS Workbench
	System requirements
	Starting ANSYS Workbench 14.0
	ANSYS Workbench 14.0 GUI
Session 1	Working on a Project
	Units in ANSYS Workbench
	ANSYS Workbench Database and File format
	Changing the unit system
	Components of the system
	Chapter 3: Sketching and Part Modeling in DesignModeler
	Introduction to Modeling
	Introduction to DesignModeler Window
	Illustration1: I-section
	Illustration 2: Spring Plate
	Illustration 3: Clamp
	Chapter 4: Solid Modeling Fundamentals
	Overview
	Introduction, Extrusion, Revolution, Sweep,Sketching
Session 2	**Chapter 5: Placed Features and Assembly**
	Overview
	Introduction, Adding a hole, Adding a round, Adding a chamfer, Patterns, Assembly, Alternate solid modeler
	Chapter 6: Modeling techniques
	Overview
	Introduction, Parameters
	Other cad systems
	Surface and Line models
Session 3	**Chapter 7: Defining Material Properties**
	Introduction to Engineering Workspace
	Creating and Adding Materials
	Assigning Material to the Beam
	Assigning Material to the Clamp
	Assigning Material to the Assembly

Session	Topics
	Chapter 8: Meshing
Session 4	Introduction
	Meshing of Plate with Holes
	Generating the mesh, optimize the model and generating the local mesh (illustration through
	Assembly Meshing
	Chapter 9: Static Structural Analysis
Session 5	Introduction to Static Structural Analysis
	Pre-processing, Solution, Post-processing
	Static Structural Analysis of:
	Cantilever Beam
	Plate with a central circular holes and square slot
	Pressure vessel, Bracket, Clevis assembly
	Chapter 10: Wizard and Tools
Session 6	Overview
	Introduction
	Static loadings-ductile materials, Brittle materials
	Fatigue loading-ductile material
	Chapter 11: Surface and Line Model
	Overview
	Introduction
	Sheet with circular hole-plane stress
	Pressure vessel and Bracket
	Line body model
	Chapter 12: Natural Frequencies
Session 7	Overview
	Introduction
	Performing the Modal analysis
	Specifying analysis settings
	Modal analysis :
	Cantilever beam and Simply supported beam
	Chime and Connecting rod
	Motor cover and Assembly
	Chapter 13: Buckling Loads
Session 8	Introduction
	Buckling analysis of
	Fixed free column (flag pole)
	Pinned-pinned column
	Built-up structure
	Chapter 14: Thermal Analysis
Session 9	Introduction
	Important terms used in thermal analysis
	Types of thermal analysis
	Steady state thermal analysis of
	Car Disk Brake Rotor
	Heat sink
	Transient thermal analysis of Piston
	Chapter 15: Thermal Stress
Session 10	Introduction
	Thermal stress-uniform temperature change
	Thermal stress in a cylinder

course Instructor

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VAC575 ADVANCED IN CATIA

SYLLABUS

OBJECTIVES:

- To familiarize the various commands involved in the DesignProcess
- To understand the principle involved in evaluating the shape and dimensions ofa component to satisfy functionalrequirements.
- To learn to draw machine components as PartDesign.
- To learn to assemble the machine components

Unit – I Introduction   2T+6P

Introduction to CAD/CAM/CAE – Introduction to CATIA Software – view – Quick view – Profile – Conic – Line – Point – Corner – Chamfer - Trim – Mirror – Sketcher based features – Pad – Multi pad – Pocket – Multi pocket.

Unit – II Basic Part Design   2T+6P

Shaft – Groove – Hole – Rib –Slot – Stiffener – Plane – offset – Coupling – Chamfer – Fillet – Draft.

Unit – III Shell and Pattern   2T+6P

Shell – Thread – Split – Transformations – Pattern – Constraint Toolbar – Move.

Unit – IV Sheet metal Parameters   2T+6P

Sheet metal parameters – wall – flange – hem – Hopper – rolled wall – Bending –cutting – Stamping – projections – Dimensions – tolerances – ellipse – curves.
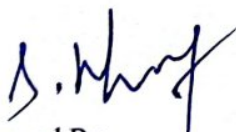
Unit – V Revolve, Sweep and Assembly   2T+6P

Surfaces – revolve – sphere – Sweep – Healing – Affinity - corner – helix – Assemble the parts made by Part Design.

Total: 40 periods

OUTCOMES:

Upon completion of this course, the students can able to successfully design machine components

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DEPARTMENT OF MECHANICAL ENGINEERING

ADVANCED IN CATIA –LESSON PLAN

S.No.	UNITS	TOPIC	HOURS	Cummulative
1.	UNIT I: Introductio n	Introduction to CAD/CAM/CAE – Introduction to CATIA Software – view – Quick view	1 T	1
2.		Profile – Conic – Line – Point – Corner – Chamfer - Trim – Mirror	1 T	2
3.		Sketcher based features	2 P	4
4.		Pad – Multi pad	2 P	6
5.		Pocket – Multi pocket	2 P	8
1.	Unit-II: Basic Part Design	Shaft – Groove – Hole	1 T	9
2.		Rib –Slot – Stiffener	1 T	10
3.		Plane – offset	2 P	12
4.		Coupling – Chamfer	2 P	14
5.		Fillet – Draft	2 P	16
1.	Unit – III Shell and Pattern	Shell – Thread	1 T	17
2.		Split – Transformations	1 T	18
3.		Pattern	2 P	20
4.		Constraint Toolbar	2 P	22
5.		Move	2 P	24
1.	Unit – IV Sheet metal Parameters	Sheet metal parameters	1 T	25
2.		wall – flange – hem – Hopper – rolled wall	1 T	26
3.		Bending – cutting – Stamping	2 P	28
4.		projections – Dimensions – tolerances	2 P	30
5.		ellipse – curves	2 P	32
1.	Unit – V Revolve, Sweep and Assembly	Surfaces – revolve	1 T	33
2.		sphere – Sweep	1 T	34
3.		Healing – Affinity	2 P	36
4.		corner – helix	2 P	38
5.		Assemble the parts made by Part Design	2 P	40

Course Coordinator

HOD/Mech

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DEPARTMENT OF CIVIL ENGINEERING

SYLLABUS VAC 171& Building Modeling Using 3D Revit Architecture

Course Objectives:

Fundamentals training courses to enable you to create a full 3D architectural project model including walls, doors, windows, components, floors, ceilings, roofs, stairs, Generating Walk through and the basic tools that the majority of architectural users need.

Topic-1-Introduction to Building information Modeling
Introduction to Building information Modeling (BIM)
Uses and Scope of BIM, Introduction to Revit- Revit disciplines, file types, parametric, Templates,
GUI and Basic Settings, Graphical User Interface, Project units,
Levels, Grids, Walls and its types.
Basic walls, stacked walls, Curtain walls, Using draw tools.
Topic-2-Draw Tools and Modify tools
Introduction- Draw Tools and Modify tools. Wall editing, adding sweep and Reveal, Modification tools.
Adding doors and Windows
'Loadable families (Doors and windows
Floors and Components Adding Floors, Modifying Floors.
Placing components, Creating New materials, Ceiling.
Topic-3-Creating of Roof and Stair.
Basic Roofs- Roof by Foot print,
Roof by Extrusion, Sloped roof.
Introduction to Railing and Model the railing portion.
Introduction to Stairs - Stair by component,
Stair by sketch, editing stair types and materials.
Topic-4-Creating of Multi Stored Buildings
Linking of AutoCAD dwg. file
Developing Building Model
Converting Multi Stored Buildings.
Landscape and Site Components
Making Views.

Total -30 Hrs (Theory 15 + Practical 15)

Outcome and Industries used this software.

This course is designed for new users of Revit Architecture.
It is recommended that you have architectural design, drafting, or engineering experience.

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DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN

Name of the Staff : **Mr.Arun Selvam (AP/Civil)**

Course Code & Name: **VAC 171& Building Modeling Using 3D Revit Architecture.**

Academic Year:**2019 – 2020.**   Class: **IV year Civil.**   Semester: **VII.**

Lect NO.	Syllabus topics	Date	No. of hours required		Cumulative period	Remarks
			Theory hours (1.15 pm - 2.15 pm)	Practical hours (2. 30 pm- 4.00 pm)		
UNIT I INTRODUCTION TO REVIT ARCHITECTURE.						
1	Introduction to BIM & REVIT	07.10.2020	01	01	02	
2	Parametric Relationship and Bidirectional Associatively	08.10.2020	01	01	04	
3	Types of files and GUL and Setting Units	09.10.2020	01	01	06	
UNIT II CREATING LAYOUT.						
4	Creating Levels, Placing Walls, Doors & windows	10.10.2020	01	01	08	
5	Draw tools and Developing Layout	11.10.2020	01	01	10	
6	Wall Sweep and Reveal and New profile for wall sweep & reveal	14.10.2020	01	01	12	
UNIT III WALL PARAMETERS.						
7	Working with family file, Stacked and Curtain walls	15.10.2020	01	01	14	
8	Placing doors in curtain walls	16.10.2020	01	01	16	
9	Placing grids and Placing mullions	17.10.2020	01	01	18	
UNIT IV FLOORS, ROOFS AND CEILING.						
10	Developing new sweep, reveal and façade	18.10.2020	01	01	20	
11	Modification Tools ,developing Floors and ceiling and Roofs	21.10.2020	01	01	22	
12	Developing Room and area definition	22.10.2020	01	01	24	
UNIT V CAMERA VIEWS AND ELECTRICAL FIXTURES.						
13	Interior Planning, Camera and Interior 3d image	23.10.2020	01	01	26	
14	Electrical Fixtures and HVAC components	24.10.2020	01	01	28	
15	Model in place and Model in Staircase	25.10.2020	01	01	30	

Course in charge

Head of the Department

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SYLLABUS FOR VAC151-STAAD PRO

Course Objectives:

The course is designed to offer students and professionals all the essentials to learn and use the STAAD.ProV8i.

The enrolled candidates will learn to master the application and will be empowered to deliver high-quality products and services.

Topic 1: CREATING MODELS
Introduction to STAAD.Pro, - STAAD Editor, Units - Methods of creating the model - Switching on node and beam labels - Specifying Member Properties, supports – Creating load cases - Load combinations - Specifying the analysis type – Practical sessions.

Topic 2: COMMANDS AND PARAMETERS
Specifying concrete design parameters - Specifying design commands - Performing the analysis and design - Viewing the output file - Post processing - Viewing the deflection diagram - Switching b/w load cases for viewing the deflection diagram - Changing the size of the deflection diagram - Annotating displacements – Practical sessions.

Topic 3: LOAD CASES AND FORCE/MOMENT DIAGRAM
Changing the units in which displacement values are annotated - The node displacement table - Displaying force/moment diagrams - Switching b/w load cases for viewing the force/moment diagrams - Changing the size of the force/moment diagrams - Annotating displacements - Changing the units in which displacement values are annotated - Beam forces table - Practical sessions.

Topic 4: EDGE CONDITIONS AND CONCRETE DESIGN
Viewing the force/moment diagrams from the beam /graphs page - Restricted the load cases for which results are viewed - Viewing the results of a single beam - Producing an on-screen report - Determination of the support reaction and moments - Continuous beam with over hangings ends and - with fixed at both ends - with Simply supported ends - Multi storey building analysis, Concrete Design – Practical.

Total Hours: 30 (Theory 15+ Practical 15)

Outcome and Industries used this software.

- Automatically convert physical model into an analytical model thus making the workflow proper.
- Improve multi-discipline team collaboration through desktop and cloud and mobile applications

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DEPARTMENT OF CIVIL ENGINEERING
VALUE ADDED COURSES FOR ACADEMIC YEAR 2019-2020

LESSON PLAN

Name of the Course Instructor & Department: Mrs.S.Nithya(AP/Civil)

Course Code & Name:VAC151-Staad Pro

Academic Year: **2019 – 2020.**   Class: **III year Civil.**   Semester: **V.**

Lect NO.	Syllabus topics	Date	No. of hours required		Cumulative period	Remarks
			Theory hours (9.30 am - 12.30 pm)	Practical hours (1. 00 pm- 4.30 pm)		
UNIT I CREATING MODELS						
1	Introduction to STAAD.Pro, STAAD Editor, Units - Methods of creating the model - Switching on node and beam labels	07.10.2019	03	03	06	
2	Specifying Member Properties, supports – Creating load cases - Load combinations - Specifying the analysis type – Practical sessions.	08.10.2019	03	03	12	
UNIT II COMMANDS AND PARAMETERS						
3	Specifying concrete design parameters and Specifying design commands . Performing the analysis and design and Viewing the output file Post processing .	09.10.2019	03	03	18	
UNIT III LOAD CASES AND FORCE/MOMENT DIAGRAM						
3	Changing the units in which displacement values are annotated and Displaying force/moment diagrams . Switching b/w load cases for viewing the force/moment diagrams .	10.10.2019	03	03	24	
UNIT IV EDGE CONDITIONS AND CONCRETE DESIGN						
4	Viewing the force/moment diagrams from the beam /graphs page and Restricted the load cases for which results are viewed	11.10.2019	03	03	30	

Course in charge

Head of the Department

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DEPARTMENT OF CIVIL ENGINEERING

SYLLABUS FOR VAC131-2D AND 3D AUTO CAD DRAFTING

Objectives

To introduce the students to draft the plan, elevation and sectional views of buildings in accordance with development and control rules satisfying orientation and functional requirements as per National Building Code. To acquire hands on experience in design and preparation of structural drawings for concrete / steel structures normally encountered in Civil Engineering practice.

Concept of Designing & Drafting
- AutoCAD screen structure
- Standard toolbar
- Draw toolbar

Object Property
- Managing Layers
- Configure Object Property Settings

Layer Management
- Automatic Management of Layers
- Layer Functions and Display

Functional Keys
- Drawing Arcs
- Drawing Rectangles
- Drawing Ellipses
- Drawing Regular Polygon
- Drawing Polylines
- Placing Points
- Drawing Infinite Lines
- Writing a Single Line Text

Editing sketched objects
- Moving the Sketched Objects
- Copying the Sketched Objects
- Creating Multiple Copies
- Creating a Single Copy
- Offsetting Sketched Objects
- Rotating Sketched Objects
- Scaling the Sketched Objects
- Filleting the Sketches
- Chamfering the Sketches

- Trimming the Sketched Objects
- Extending the Sketched Objects
- Stretching the Sketched Objects
- Lengthening the Sketched Objects
- Arraying the Sketched Objects
- Mirroring the Sketched objects
- Text Mirroring

Creating text and tables
- Creating Multiline Text
- Text Window
- Text Editor Tab
- Editing Text
- Editing Text Using the DDEDIT Command
- Editing Text Using the Properties Palette
- Modifying the Scale of the Text

Basic dimensioning, geometric dimensioning
- Dimension Line
- Dimension Text
- Arrowheads
- Extension Lines
- Leader
- Centre Mark and Centrelines
- Alternate Units

Tolerancing Dimension styles,
- DIMLINEAR Command Options
- Creating Aligned Dimensions
- Creating Arc Length Dimensions
- Creating Rotated Dimensions
- Creating Baseline Dimensions

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- Creating Continued Dimensions
- Creating Angular Dimensions
- Using Styles and Variables to Control Dimensions

- Creating and Restoring Dimension Styles
- New Dimension Style dialog box
- Controlling the Dimension Text Format
- Fitting Dimension Text and Arrowheads
  Multileader styles, and system variables
- Creating and Restoring Multileader Styles
- Modify Multileader Style dialog box
  Model space viewports, Paper space viewports, and layouts

- Printing Concepts
- Working in Layouts
- Creating Layouts
- Guidelines for Layouts
- Printing Layouts
- Hatch Patterns
- Hatch Boundary
  Hatching
  Hatching drawings
- the Drawing Using the Tool Palettes
- Drag and Drop Method
- Select and Place Method
  Residential design
- Construction Specifications
- Guidelines and Required Codes that Affect Building

Design

- Room Relationships and Sizes
- Exterior Design Factors Site

planning

Floor Plan
Roof plans,

Elevations

Industrial

structures

AutoCAD Civil

3D

- Creating Solid Models
- AutoCAD civil 3D workspaces
- AutoCAD civil 3D user interface
- AutoCAD civil 3D toolspace
- AutoCad civil 3D templates, settings and styles
  Visual Styles ,Surfaces
- Surface properties
- Contour data
- Other surface data
- Break lines and boundaries
- Surface editing
- Adjusting surfaces through surface properties
  3d Operations
- Fundamental operations
- Array
  Profiles
- Profiles overview
- Create a profile view style
- Create profile from surface
- Create profile from wizard
- Finished ground

profiles Create and

edit profiles

Plan Production

- Plan production tools
- Plan production objects
- Plan production object edits

Total Hours: 30

Outcome

Ability to use the software packers for drafting and modeling

- Ability to create 2d and 3d models of engineering components
- The students will be able to draft the plan, elevation and sectional views of the buildings, industrial structures, and framed buildings using computer software's.
- At the end of the course the student acquires hands on experience in design and preparation of structural drawings for concrete / steel structures normally encountered in Civil Engineering practice

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VAC375-ANTENNA DESIGN USING COMPUTER SIMULATION TECHNOLOGY

Course Description:

Throughout this course you will become familiar with the basic usage of CST STUDIO SUITE in terms of its modeling and simulation capabilities. Participants will learn about the general setup, submission, and result analysis procedures for high-frequency 3D electromagnetic simulations.Electromagnetic field solvers for applications across the EM spectrum are contained within a single user interface in CST Studio Suite. The solvers can be coupled to perform hybrid simulations, giving engineers the flexibility to analyze whole systems made up of multiple components in an efficient and straightforward way.

Learning Objectives:

- Navigate the general layout of the CST SUTDIO SUITE interface
- Set up the project environment with the desired units, frequency settings, background materials and boundary conditions
- Understand the various material types that exist and how to define them
- Setup result monitors to obtain 2D/3D field data
- Choose and set up the most appropriate solver and algorithm for high frequency applications.
- Analyze simulation results such as S-parameters, voltages, currents, 3D nearfields and farfields.

Syllabus

Module 1:

Introduction to antenna-Directivity, Gain, Effective Aperture, Radiation Resistance, Bandwidth, Beam width, VSWR, Introduction to Dipole Antenna, Loop Antenna, Monopole and Miniature Antenna.

Module 2:

Introduction to modeling, setting up of minimum and maximum values in x, y and z directions, setting up of components and selecting materials to be used for modeling.

Module 3:

Introduction to Boolean addition, subtraction, setting ports, Selecting impedance and accuracy values, monitoring field patterns.

Module 4:

Simulation, setting solvers, showing transparency, far field patterns, Analyzing 1D, 2D and 3D results, Analyzing polar and Cartesian graphs.

Total Hours: 30hrs (Theory 10 hrs + Practical 20 hrs)

Course Outcomes:

At the end of this course, the students will be able to:

1. Design antennas according to their antenna characteristics like radiation pattern, 1D, 2D, 3D views.
2. Design and implement various types of antennas.
3. Analyze antennas.
4. Analyze special antennas and measuring techniques
5. Applications of antennas

Staff Incharge

HOD/ECE

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LESSON PLAN

LP.No.	Course Content	No. of Hours	T/P	Cumulative No. of Hours
1	Introduction to antenna, Directivity, Gain, Radiation Pattern, VSWR	03	T	3
2	Dipole Antenna, Mono pole Antenna	01	T	4
3	Introduction to CST microwave studio, Mono Pole antenna, Designing Substrate	02	P	6
4	Patch, ground plane, selecting materials, adding different patches, setting port	02	P	8
5	Selecting different materials, changing size of antenna, simulation	03	P	11
6	Checking frequency range and gain, improving gain using different material, designing antenna to a specific application.	02	P	13
7	Introduction to Miniature Antenna	01	T	14
8	Miniature antenna, Designing Substrate, Patch	02	P	16
9	Ground plane, selecting materials, adding different patches, setting port	02	P	18
10	Selecting different materials, changing size of antenna, simulation	02	P	20
11	Checking frequency range and gain, improving gain using different material, designing antenna to a specific application.	02	P	22
12	Introduction to Microstrip Patch Antenna	02	T	24
13	Patch fitting	03	T	27
14	Setting substrate, one or more patches, ground plane, selecting materials, adding different patches	01	P	28
15	Setting port, selecting different materials, changing size of antenna, simulation,	01	P	29
16	Checking frequency range and gain, improving gain using different material, Simulation.	01	P	30
Total Hours				**30**

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SYLLABUS

OBJECTIVES

Used to simulate any electronic circuit
Used to obtain digital control
Uses nodal analysis for any circuit
Uses mesh analysis for any circuit
Used in Power electronics and motor drive simulations

INTRODUCTION

Circuit structure-Software/Hardware requirements-Installing program-simulating circuit- component parameter and specification and format

CIRCUIT SCHEMATIC DESIGN

Creating circuit-File menu-edit menu-view menu-sub circuit menu-simulate menu-options menu-Elements menu

OTHER COMPONENTS

Parameter File- Sources: Time,Constant,DCSource,Sinusoidal Source, Square-Wave Source, Triangular/Saw tooth Sources ,Step Sources- Probes and Meters-Voltage/Current Scopes-Simulation control

POWER CIRCUIT COMPONENTS

RLC branches, rheostat, Switches: Diode,thyristor,Mosfet,IGBT,Gating Block-other module-OPAMP,Ideal OPAMP,non ideal OPAMP ,Opto coupler-Thermal Module- Diode,IGBT,MOSFET ,Motor drive DC motor

CONTROL CIRCUIT COMPONENTS

Logic elements: AND, OR, EXOR, NOT, NAND gates-J-K Flip-Flops- D Flip-Flops-MonostableMultivibrator –comparator-Limiters-multiplexer ,Transfer Function Blocks

Simulation Issues

Error/Warning Messages-Debugging

OUTCOME

After completion of the course students will be able to

Simulate any electronic circuit
Obtain digital control module
Nodal analysis for any circuit simulation
Mesh analysis for any circuit simulation
Obtain power electronics circuits
Obtain motor drive module simulation

Checkedby

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20

LESSON PLAN

Software:PSIM

Staff Name   : S. MURUGESAN   **Total Hours:30**

Topic No	Topic Name	Sources		Mode of Teaching	Real life / Real time Applications	Total hours required	Cumulative Hours
		Chapter No	Page No				
1	Introduction PSIM for electronics,electrical engineering	1	45, 49	PPT,BB	Integrated circuit design	1	1
2	Installing program-simulating circuit	1	47	PPT,BB	Integrated circuit design	1	2

Topic No	Topic Name	Software required	Real life / Real time Applications	Total hours required	Cumulative Hours
3	Introduction to the tools available in PSIM	PSIM	circuit design	1	3
4	Introduction to elements tool	PSIM	circuit design	1	4
5	Available components in PSIM	PSIM	circuit design	1	5
6	Design power element motor drive module	PSIM	circuit design	1	6
7	Design the power element – RLCbranches,switches,Transformers	PSIM	circuit design	1	7
8	Design simple Electronics devices circuit	PSIM	circuit design	1	8
9	design complex electronic circuits	PSIM	circuit design	1	9
10	Voltage source inverter design	PSIM	circuit design	1	10
11	How to start PSIM	PSIM	circuit design	1	11
12	How to select elements and connect	PSIM	circuit design	1	12

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13	How to use the power element – RLCbranches,switches,Transformers	PSIM	circuit design	1	13
14	How to use power element motor drive module	PSIM	circuit design	1	14
15	How to use control element – Logic functions,etc	PSIM	circuit design	1	15
16	How to use the Other element – probes, switch controllers, sensors	PSIM	circuit design	1	16
17	How analyse the waveform	PSIM	circuit design	1	17
18	Simulate simple Electronics devices circuits-1 (own)	PSIM	circuit design	1	18
19	Simulate simple Electronics devices circuits-3(own)	PSIM	circuit design	1	19
20	How to use sub circuit, Voltage source inverter design,	PSIM	circuit design	1	20
21	How to change variables in mid simulation	PSIM	circuit design	1	21
22	Performing parameter sweep	PSIM	circuit design	1	22
23	Introduction to multi sine AC sweep	PSIM	circuit design	1	23
24	Using Look up table to make variable resistor, motor drive module	PSIM	circuit design	1	24
25	How to interface electrical & mechanical block, Utilize thermal module	PSIM	circuit design	1	25
26	Export/Import PSIM waveform analysis	PSIM	circuit design	1	26
27	DC motor drive module, Hysteresis bang comparator	PSIM	circuit design	1	27

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28	BJT Linear regulator,BJT test circuit,LCfilter,Non linear Characteristics of diode	PSIM	circuit design	1	28
29	Phase locked loop, square wave oscillator, Dead time circuit using flip flop	PSIM	circuit design	1	29
30	BUCK converter, Power supply design, Chopper current control module	PSIM	circuit design	1	30

S. V

COURSE INSTRUCTOR

HOD

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VAC364-EMBEDDED PROGRAMMING USING ARDUINO

OBJECTIVE:

This course will familiarize the student with the basic principles and techniques of embeddedprogramming using ARDUINO microcontroller boards and integrating them with sensor andactuator circuits.

Syllabus

UNIT I   10

Microcontroller architecture-Signals –Operation features-Introduction to ARDUINO IDE Introduction to ARDUINO IDE-Introduction to Proteus-Introduction to I/O ports.

UNIT II   10

Interrupts-Serail communication _Memory organization _ Time/counters_ Programming usingtimers/counters_serial Communication Interface.

UNIT III   10

Analog to Digital I/O –Interfacing simple sensors – Key board interacing – 7segment Display –LCD interfacing –stepper Motor interfacing _DC motor interfacing.

Total: 30 Hrs

COURSE OUTCOMES:

At the end of this course, the students will be able to:

- Utilize ARDUINO development kits effectively for embedded system design.
- Gain experience with real time embedded system projects and working in a small team,cooperatingon various aspects of software development.
- Understand development of embedded system applications.

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LESSON PLAN

COURSE NAME: VAC364-EMBEDDED PROGRAMMING USING ARDUINO

COURSE INSTRUCTOR-K. SOMU   TOTAL HOURS:30

S.NO	CONTENT	SOURCE	MODE OF TEACHING	REAL TIME APPLICATIONS	NO. OF HOURS REQUIRED	CUMULATIVE HOURS
1	Microcontroller architecture	T1	BB,PPT	EMBEDDED SYSTEMS	2	2
2	Signals	T1	BB,PPT	EMBEDDED SYSTEMS	1	3
3	Operation features	T1	BB,PPT	EMBEDDED SYSTEMS	2	5
4	Introduction to ARDUINO IDE	HANDS ON		EMBEDDED SYSTEMS	1	6
5	Introduction to Proteus	HANDS ON		EMBEDDED SYSTEMS	1	7
6	Introduction to I/O ports	HANDS ON		EMBEDDED SYSTEMS	1	8
7	Interrupts	T1	BB,PPT	EMBEDDED SYSTEMS	1	9
8	Serial communication	T1	BB,PPT	EMBEDDED SYSTEMS	1	10
9	Memory organization	T1	BB,PPT	EMBEDDED SYSTEMS	1	11
10	Time/counters	T1	BB,PPT	EMBEDDED SYSTEMS	1	12
11	Programming usingtimers/counters	HANDS ON		EMBEDDED SYSTEMS	2	14
12	serial Communication Interface	HANDS ON		EMBEDDED SYSTEMS	2	16
13	Analog to Digital I/O	HANDS ON		EMBEDDED SYSTEMS	2	18
14	Interfacing simple sensors	HANDS ON		EMBEDDED SYSTEMS	2	20
15	Key board interacing	HANDS ON		EMBEDDED SYSTEMS	2	22
16	7segment Display	HANDS ON		EMBEDDED SYSTEMS	2	24
17	LCD interfacing	HANDS ON		EMBEDDED SYSTEMS	2	26
18	stepper Motor interfacing	HANDS ON		EMBEDDED SYSTEMS	2	28
19	DC motor interfacing	HANDS ON		EMBEDDED SYSTEMS	2	30

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ADVANCED JAVA PROGRAMMING - SYALLBUS

UNITI   **(7Hrs)**

Introduction to Java Applications: Introduction – First Program in Java- Modifying first program – Adding Integers – Arithmetic – Decision Making: Equality and Relational Operators.

Introduction to Classes, Objects, Methods and Strings: Introduction – Declaring a Class with Method and Instantiating – Declaring a Method with a Parameter – Instance Variables – Initializing Objects with Constructors – Floating Point Numbers and Type double.

Control Statements: Part-I: Introduction – if Single-Selection Statement – if..else Double Selection Statement – while Repetition Statement – Formulating Algorithms: Counter Controlled Repetition – Formulating Algorithms: Sentential-controlled Repetition – Formulating Algorithms: Nested Control Statements – Compound Assignment Operators – Increment and Decrement Operators – PrimitiveTypes.

Control Statements: Part-II: Essentials of Counter-Controlled Repetition – for Repetition Statement – Examples using the for statement – do..while Repetition Statement – switch Multiple-Selection Statement – break and continue statements – Logical Operators.

Methods : A Deeper Look: Introduction – Program Modules in Java – static Methods, static Fields and Class Math – Declaring Methods with Multiple parameters – Argument Promotion and Casting – Java API Packages – Scope of Declarations – MethodOverloading.

Arrays and ArrayLists: Introduction – Arrays – Declaring and Creating Arrays – Examples Using Arrays – Enhanced for statement – Passing Arrays to Methods – Multidimensional Arrays – Variable-Length Argument Lists – Using Command-Line Arguments – Class Arrays – Introduction to Collections and Class ArrayList.

UNITII   **(7Hrs)**

Classes and Objects: A Deeper Look: Controlling Access to Members – Referring using this Reference – Overloaded Constructors – Default and No-Argument Constructors – Set and Get Methods – Composition – Enumerations – Garbage Collection and Method finalize – static Class Members – static Import – final Instance variables – Creating Packages – Package Access.

Object-Oriented Programming: Inheritance : Introduction – Super classes and Subclasses – protected Members – Relationship between Super classes and Subclasses – Constructors in Subclasses – Software Engineering with Inheritance – Class Object.

Object-Oriented Programming: Polymorphism: Introduction – Demonstrating Polymorphic Behavior – Abstract Classes and Methods – final Methods and Classes.

Exception Handling: Introduction – Divide By Zero without Exception Handling – Handling ArithmeticException and InputMismatchException – When to Use Exception Handling – Java Exception Hierarchy – finally Block – Chained Exceptions – Declaring New Exception Types – Preconditions and Postconditions – Assertions – Multi-Catch – try-with Resources.

UNITIII   **(9Hrs)**

GUI Components: Part-I: Introduction – Simple GUI-Based Input/Output with JOptionPane – Overview of Swing.Components – Displaying Text and Images in a Window – TextFields and Introduction to Event Handling with Nested Classes – Common GUI Event Types and Listener Interfaces – How Event Handling Works – JButton – Buttons That Maintain State – JComboBox; Using and Anonymous Inner Class for Event Handling – JList – Multiple-Selection Lists – Mouse Event Handling – Adapter Classes – Key Event Handling – Introduction to Layout Managers – Using Panels to Manage More Complex Layouts – JTextArea.

Files, Streams and Object Serialization: Object Serialization – Additional java.io Classes – Opening Files with JFileChooser.

Generic Collections: Introduction – Collections Overview – Type-Wrapper Classes for Primitive Types – Autoboxing and Auto-Unboxing – Lists – Collection Methods – Stack Class of Package java.util – Class PriorityQueue and Interface Queue – Sets – Maps – PropertiesClass

UNITIV   (9Hrs)

GUI Components: Part-II: JSlider – Using Menus with Frames – JPopupMenu – JDesktopPane and JInternalFrame – JTabbedPane – Layout Managers: BoxLayout and GridBagLayout

Multithreading: Introduction – Thread States: Life Cycle of a Thread – Creating and Executing Threads with Executor Framework – Thread Synchronization – Producer / Consumer Relationship without Synchronization - Producer / Consumer Relationship with Synchronization
- Producer / Consumer Relationship: the Lock and Condition Interfaces – Multithreading with GUI.

Networking: Introduction – Manipulating URLs – Reading a File on Web Server – Establishing a Simple Server Using Stream Sockets - Establishing a Simple Client Using Stream Sockets – Client/Server Interaction with Stream Socket Connections – Datagrams: Connectionless Client/Server Interaction.

UNITV   (8Hrs)

Accessing Database with JDBC: Introduction – Manipulating Databases with JDBC – RowSet Interface – Prepared Statements – Stored Procedures – Transaction Processing.

JavaServer Faces Web Apps: Part-I: Introduction – HTTP Transactions – Multitier Application Architecture – First JSF Web App – MVC Architecture of JSF Apps – Common JSF Components – Validation using JSF Standard Validators – Session Tracking.

JavaServer Faces Web Apps: Part –II: Accessing Databases in Web Apps – Ajax – Adding Ajax Functionality to the Validation App.

Total Hrs: 40 hrs

Text Book: 1. Java – How to Program Ninth Edition , Paul Deital and Harvey Deital, PHI Learning Private Limited , New Delhi, 2012.

ADVANCED JAVA PROGRAMMING
LESSON PLAN

Sl. No	Topic	Reference Book		No. of Hrs	Cumulative Hrs
		Chapter No	Page No		
	UNIT I				
1	**Introduction to Java Applications:** Introduction – First Program in Java- Modifying first program – Adding Integers – Arithmetic – Decision Making: Equality and Relational Operators.	2	38 – 59	1	1
2	**Introduction to Classes, Objects, Methods and Strings:** Introduction – Declaring a Class with Method and Instantiating – Declaring a Method with a Parameter – Instance Variables – Initializing Objects with Constructors – Floating Point Numbers and Type double.	3	72 - 94	1	2
3	**Control Statements: Part-I:** Introduction – if Single-Selection Statement – if..else Double Selection Statement – while Repetition Statement – Formulating Algorithms: Counter Controlled Repetition – Formulating Algorithms: Sentential-controlled Repetition – Formulating Algorithms: Nested Control Statements – Compound Assignment Operators – Increment and Decrement Operators – PrimitiveTypes.	4	103 – 134	1	3
4	**Control Statements: Part-II:** Essentials of Counter-Controlled Repetition – for Repetition Statement – Examples using the for statement – do..while Repetition Statement – switch Multiple-Selection Statement – break and continue statements – Logical Operators.	5	152 - 178	1	4
5	**Methods : A Deeper Look:** Introduction – Program Modules in Java – static Methods, static Fields and Class Math – Declaring Methods with Multiple parameters – Argument Promotion and Casting – Java API Packages – Scope of Declarations – MethodOverloading.	6	198 – 223	1	5
6	**Arrays and ArrayLists:**Introduction – Arrays – Declaring and Creating Arrays – Examples Using Arrays – Enhanced for statement – Passing Arrays to Methods	7	241 – 261	1	6
7	**Arrays and ArrayLists:** Multidimensional Arrays – Variable-Length Argument Lists – Using Command-Line Arguments – Class Arrays – Introduction to Collections and Class ArrayList.	7	268 – 285	1	7
	UNIT II				
8	**Classes and Objects:** A Deeper Look: Controlling Access to Members – Referring using this Reference – Overloaded Constructors – Default and No-Argument Constructors – Set and Get Methods – Composition – Enumerations	8	312 – 332	1	8
9	**Classes and Objects:** Garbage Collection and Method finalize – static Class Members – static	8	333 – 346	1	9

	Import – final Instance variables – Creating Packages – Package Access.				
10	**Inheritance :**Introduction – Super classes and Subclasses – protected Members – Relationship between Super classes and Subclasses – Constructors in Subclasses – Software Engineering with Inheritance – Class Object.	9	360 – 387	1	10
11	**Polymorphism:** Introduction – Demonstrating Polymorphic Behavior – Abstract Classes and Methods – final Methods and Classes.	10	395 – 418	1	11
12	**Exception Handling:** Introduction – Divide By Zero without Exception Handling – Handling ArithmeticException and InputMismatchException – When to Use Exception Handling	11	439 – 447	1	12
13	**Exception Handling:** Java Exception Hierarchy – finally Block – Chained Exceptions – Declaring New Exception Types	11	447 – 459	1	13
14	**Exception Handling:** Preconditions and Postconditions – Assertions – Multi-Catch – try-with Resources.	11	460 – 463	1	14
	UNIT III				
15	**GUI Components: Part-I** Introduction – Simple GUI-Based Input/Output with JOptionPane – Overview of Swing Components – Displaying Text and Images in a Window	14	550 – 560	1	15
16	Introduction – Simple GUI-Based Input/Output with JOptionPane – Overview of Swing Components – Displaying Text and Images in a Window	14	561 – 571	1	16
17	Buttons That Maintain State – JComboBox; Using and Anonymous Inner Class for Event Handling	14	571 – 583	1	17
18	JList – Multiple-Selection Lists – Mouse Event Handling	14	584 – 593	1	18
19	Adapter Classes – Key Event Handling	14	594 – 603	1	19
20	Introduction to Layout Managers – Using Panels to Manage More Complex Layouts – JTextArea.	14	606 – 614	1	20
21	**Files, Streams and Object Serialization:** Object Serialization – Additional java.io Classes – Opening Files with JFileChooser.	17	720 – 755	1	21
22	**Generic Collections:** Introduction – Collections Overview – Type-Wrapper Classes for Primitive Types – Autoboxing and Auto-Unboxing – Lists – Collection Methods	20	830 – 851	1	22
23	Stack Class of Package java.util – Class PriorityQueue and Interface Queue – Sets –	20	851 – 863	1	23

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	Maps – PropertiesClass				
	UNIT IV				30
24	**GUI Components: Part-II:** JSlider – Using Menus with Frames – JPopupMenu	25	1000 – 1016	1	24
25	JDesktopPane and JInternalFrame – JTabbedPane – Layout Managers: BoxLayout and GridBagLayout	25	1017 – 1039	1	25
26	**Multithreading:** Introduction – Thread States: Life Cycle of a Thread – Creating and Executing Threads with Executor Framework – Thread Synchronization	26	1046 – 1061	1	26
27	Producer / Consumer Relationship without Synchronization - Producer / Consumer Relationship with Synchronization	26	1061 – 1086	1	27
28	Producer / Consumer Relationship: the Lock and Condition Interfaces	26	1086 – 1092	1	28
29	Multithreading with GUI.	26	1095 – 1108	1	29
30	**Networking:** Introduction – Manipulating URLs – Reading a File on Web Server – Establishing a Simple Server Using Stream Sockets	27	1119 - 1129	1	30
31	Establishing a Simple Client Using Stream Sockets – Client/Server Interaction with Stream Socket Connections	27	1129 – 1141	1	31
32	Datagrams: Connectionless Client/Server Interaction	27	1142 - 1149	1	32
	UNIT V				
33	**Accessing Database with JDBC:** Introduction – Manipulating Databases with JDBC	28	1172 – 1206	1	33
34	RowSet Interface – Prepared Statements – Stored Procedures – Transaction Processing	28	1206 – 1227	1	34
35	**JavaServer Faces Web Apps: Part-I:** Introduction – HTTP Transactions – Multitier Application Architecture – First JSF Web App	29	1236 - 1246	1	35
36	MVC Architecture of JSF Apps – Common JSF Components	29	1246 – 1253	1	36
37	Validation using JSF Standard Validators – Session Tracking.	29	1254 – 1268	1	37
38	**JavaServer Faces Web Apps: Part –II:** Accessing Databases in Web Apps	30	1277 – 1288	1	38
39	Ajax – Adding Ajax Functionality to the Validation App.	30	1289 – 1294	1	39
40	Review			1	40

COURSE Instructor

MAHA BARATHI ENGINEERING COLLEGE
A.Vasudevanur

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

VAC263- INFORMATION COMMUNICATION SYSTEM FOR MULTIMEDIA DESIGNING

Course Objectives:

1. Understand how Multimedia works.
2. Learn how learning theories influence the development of multimedia product
3. Explore a brief history of multimedia in education.
4. Develop competencies in designing and creating interactive multimedia applications by explaining how elements of these applications reflect a theory of how learning will occur.
5. Work with all aspects of text, audio, images and video.
6. Learn the phases involved in multimedia planning, design and production.
7. Be able to use various multimedia authoring tools.

Unit 1   **INTRODUCTION**   **9**
About Photoshop - Navigating Photoshop - Menus and panels - Opening new files - Opening existing files - **Getting Started with Photoshop** - Exploring the Toolbox - The New CS4 Applications Bar & the Options Bar - Exploring Panels & Menus - Creating & Viewing a New Document - Customizing the Interface - Setting Preferences

Unit 2   **CREATING SPECIAL EFFECTS**   **9**
Understanding Paths & the Pen Tool - Creating Straight & Curved Paths - Creating Combo Paths - Creating a Clipping Path - Getting Started with Photoshop Filters - Smart Filters - Creating Text Effects - Applying Gradients to Text - Saving with Different File Formats - Saving for Web & Devices - Printing Options

Unit 3   **Introduction to Power director**   **9**
Introduction – PowerDirector Basics - Workspace – Media – Editing – Adding Effects – 3D Media – Editing modes – Title Effects – Production – Producing projects – CyberLink Wave Editor – Editing Songs – Saving with Different File Formats - Saving for Web & Devices - Printing Options

Unit 4   **Introduction to ProShow Gold**   **9**
Introduction – ProShow Gold Basics - Workspace – Media – Editing – Adding Effects – 3D Media – Editing modes – Title Effects – Production – Producing projects – Editing Songs – Adding Background Songs – Saving with Different File Formats - Saving for Web & Devices - Printing Options.

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. Introduction – Macromedia Flash Basics - editing – Adding Effects – 3D Media – Editing modes – Title Effects – Creating 2D Objects – Creating 3D Objects – Producing animation with 3D Objects – Saving with Different File Formats - Saving for Web & Devices - Printing Options

Total: 45 hours

Course Outcomes:

1. Describe the working functions of Multimedia.
2. Introduce the creation of special effects using Multimedia applications.
3. Describe the types of media and define multimedia system.
4. Describe the process of digitizing (quantization) of different analog signals (text, graphics, sound and video).
5. Use and apply tools for image processing, video, sound and animation.
6. Apply methodology to develop a multimedia system.
7. Apply acquired knowledge in the field of multimedia in practice and independently continue to expand knowledge in this field.

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Lesson plan

Topic No	Topic Name	*Mode of Teaching	No. of periods	Cumulative Period
1.	Overview of Adobe Photoshop CS6 workspace	BB	2	1
2.	How to create a new document			2
3.	How to resize, rotate, and crop images How to use layers in Photoshop	PPT/Video	2	4
4.	How to use selection tools How to retouch photos	PPT/Video	2	6
5.	How to generate different file formats How to correct color	PPT/Video	4	10
6.	How to combine images in Photoshop How to use painting tools	PPT/Video	6	16
7.	How to use drawing tools How to understand color management	PPT/Video	3	19
8.	How to add text to images How to use filters	PPT/Video	3	22
9.	How to blend, feather, and smooth How to use the Vanishing Point filter	PPT/Video	2	24
10.	Basics, Adding Effects	BB	2	26
11.	Title Effects, CyberLink Wave Editor	PPT/Video	4	30
12.	Saving with Different File Format	PPT/Video	4	34
13.	Creating 2D & 3D Objects	PPT/Video	4	36
14.	Producing animation with 3D Objects	PPT/Video	5	41
15.	Saving with Different File Formats	PPT/Video	2	43
16.	Saving for Web & Devices	PPT/Video	1	44
17.	Producing the Saved files in to different file formats.	PPT/Video	1	45

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MAHA BARATHI ENGINEERING COLLEGE

A.VASUDEVANUR

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

HTML/CSS

Course Objectives:

1. Insert a graphic within a webpage.
2. Create a link within a web page.
3. Create a table within a web page.
4. Insert heading levels within a webpage.
5. Insert ordered and unordered lists within a webpage.

UNIT1

Introduction to HTML – basic tags – HTML elements – html – attributes –html header-html phrase tags–html styles–html formatting–html lists –html tables –html layout   **9hours**

unit 2

introduction to html forms,graphics – html forms–html form attribute –html form elements– html input types– html canvas-html svg

                                                                                    9hours

unit3

introduction to html media,api – html audio/video – html media –html plugins – html geo location, html drag/drop   **9 hours**

unit 4

introduction to css, css syntax –css colors – css backgrounds – css padding – css margins - css links – css lists - css align – css tables

                                                                                    9hours

unit5

introduction to css responsive, grid - css grid container- css grid item – css rwd viewport-css rwd grid view-css rwd images –css rwd frame works   **9 hours**

total hours:45

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Course Outcomes:

1. Describe the function of HTML in Web communications.
2. Identify a Universal Resource Locator (URL) in a segment of HTML code.
3. Describe the basics of the Domain Name System (DNS) used on the Internet and private networks.
4. Describe the function of Cascading Style Sheets (CSS) in Web communications and describe the relationship between CSS and HTML.
5. Define the terms "presentational" and "semantic" meanin the context of HTML/CSS coding.

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Topic No	Topic Name	Mode of Teaching	No. of periods	Cumulative Period
1.	Pre-requisites	BB	2	2
2.	HTML, CSS–Introduction			
3.	HTML,CSS–BASICTAGS	PPT/Video	2	4
4.	HTML,CSS–ELEMENTS	PPT/Video	2	6
5.	HTML, CSS–ATTRIBUTES	PPT/Video	2	8
6.	HTML–FORMATTING	PPT/Video	2	10
7.	HTML–PHRASE TAGS	PPT/Video	2	12
8.	HTML– METATAGS	PPT/Video	2	14
9.	HTML,CSS– COMMENTS	PPT/Video	2	16
10.	HTML,CSS –IMAGES	PPT/Video	2	18
11.	HTML,CSS–TABLES	PPT/Video	1	19
12.	HTML.CSS – LISTS	PPT/Video	1	20
13.	HTML–TEXTLINKS	PPT/Video	1	21
14.	HTML,CSS–IMAGE LINKS	PPT/Video	1	22
15.	HTML–EMAILLINKS	PPT/Video	1	23
16.	HTML–FRAMES	PPT/Video	1	24
17.	HTML–IFRAMES	PPT/Video	1	25
18.	HTML–BLOCKS	PPT/Video	1	26
19.	HTML,CSS–BACKGROUNDS	PPT/Video	1	27
20.	HTML,CSS–COLORS	PPT/Video	1	28

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21.	HTML,CSS–FONTS	PPT/Video	2	30
22.	HTML–FORMS	PPT/Video	2	32
23.	HTML–EMBED MULTIMEDIA	PPT/Video	2	34
24.	HTML– MARQUEES	PPT/Video	2	35
25.	HTML– HEADER	PPT/Video	2	36
26.	HTML,CSS–STYLESHEET	PPT/Video	2	38
27.	HTMLJAVASCRIPT	PPT/Video	2	40
28.	HTML,CSS–LAYOUTS	PPT/Video	2	42
29.	HTML–TAGREFERENCE	PPT/Video	1	43
30.	HTML, CSS – ATTRIBUTEREFERENCE	PPT/Video	1	44
31.	HTMLEVENTSREFERENCE	PPT/Video	1	45
	THEORY	----	----	20
	PRACTICAL	----	----	25

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I-79, SALEM-CHENNAI HIGHWAY, A.VASUDEVANUR, CHINNASALEM (TK), KALLAKURICHI (DT) 606 201.
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
2(f) & 12(B) status of UGC, New Delhi
www.mbec.ac.in |Ph: 04151-256333, 257333 | E-mail: mbec123@gmail.com

Name of the Faculty	Mrs.S.Preethi		
Designation and Dept	AP/EEE	Academic Year	2022-2023
Software Name:	PLC & SCADA		
Branch	EEE		
Duration	40 hours	Theory : 10 Hours	Practical : 30Hours

Objectives:

After completion of the course the trainee able to

- Ability to understand the generic architecture and constituent components of a Programmable Logic Controller..
- Ability to develop a software program using modern engineering tools and technique for PLC and SCADA.
- Ability to apply knowledge gained about PLCs and SCADA systems to real-life industrial applications.

Automatic Machine Control Using PLC & SCADA

Title of the Course:

Automatic Machine Control Using PLC & SCADA

Aim:

To make the aspiring engineers acquainted with the conceptual as well as practical knowledge of the Industrial Automation & latest technologies being used to achieve industrial automation.

Prerequisites:

Basics of C, C++ language.

Course Outcomes:

At the end of this course, the students will be able to

- ➢ PLC Programming fundamental and advance PLC Programming techniques.
- ➢ SCADA to visualize and control a system.

ATTESTED

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MAHA BARATHI ENGINEERING COLLEGE
A.VASUDEVANUR (Po) CHINNASALEM (Tk.)
KALLAKURICHI DIST. 606 201.

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Teaching Strategies:

The teaching methodologies include lectures, presentations, Programming, Hardware and mini-projects.

Syllabus:

Module 1 PLC fundamentals-selection of PLC components-architectural evolution of PLC-introduction to the field devices-types of I/O-concept of flags and scan cycle execution-connecting field devices to PLCs I/Os

Module 2 Programming instructions arithmetic and logical-MOVE block applications-timer and counter blocks programming-advanced instructions-file handling and comment function-master control/set/reset function.

Module 3 Monitoring arrays & tags of user defined data types-editing ladder logic online-troubleshooting controller problems-monitoring GSV/SSV instructions-forcing I/O & toggling bits-CPU, I/O module replacements-fault detection and error handling

Module 4 SCADA system application-calculation SCADA tags-selection of software basis of SCADA tags-creating database of tags-SCADA screen/creating & editing graphic display with animation- data entry/start stop command-analog entry-trending

Module 5 Creating alarms & events-connectivity with the different hardware-communication protocols (modbus/TCP/IP)-communication with PLC-communication with data acquisition systems-fault diagnostics and error handling-sorting communication problems

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Designation and Dept	AP/EEE	Academic Year	2022-2023
Software Name:	ARDUINO		
Branch	EEE		
Duration	45 hours	Theory : 15 Hours	Practical : 30Hours

Objectives:

After completion of the course the trainee able to
- Ability to get knowledge in the field of Programming & electronics.
- Ability to create a multitude of different projects on robotics, home automation, and many others.

PROGRAMMING WITH ARDUINO

Title of the Course:

Programming with Arduino.

Aim:

To provide students with the necessary knowledge and tools to integrate and build simple projects with sensors and outputs on their own.

Prerequisites:

☐ Basics of C, C++ language.

☐A basic understanding ofmicrocontrollersandelectronicsis alsoexpected.

Course Outcomes:

At the end of this course, the students will be able to

- ✓ Learnthebasicsofelectronics,includingreadingschematics(electronicsdiagrams)
- ✓ Learnhowto prototypecircuitswithabreadboard
- ✓ LearntheArduino programming languageandIDE

Teaching Strategies:

The teaching methodologies include lectures, presentations, Programming, Hardware and mini-projects.

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Syllabus:

UNIT I: Introduction to IoT and Azure IoT Services

Getting started with Azure Lab: Setting started with Azure IoT Services- Setup the development environment - Connect IoT Device to Azure-Individual Enrolment of Devices in DPS-Automatic Enrolment of Devices in DPS-Device message routing-Filtering and aggregating message data-Integrate IoT Hub with event grid-Explore and analyse time stamped data with Time Series Insights-Introduction to IoT Edge- Set Up an IoT Edge Gateway-Develop, deploy, and debug a custom module on Azure IoT Edge- Run an IoT Edge device in restricted network and offline.

UNIT II: Device Management

Remotely monitor and control devices with Azure IoT Hub-Automatic device management-Configure metrics and Logs in Azure IoT Hub-Monitor and debug connection failures-Implementing Azure Security Centre for IoT- Get started with Azure IoT Central- Implementing IoT solutions with Azure IoT Central

https://data-flair.training/blogs/iot-careers/

https://www.arduino.cc ›

https://blog.coursesity.com