



ADHIYAMAAN COLLEGE OF ENGINEERING

(AUTONOMOUS)

Dr.M.G.R.Nagar – Hosur 635109

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

LESSON PLAN

Faculty Name:

K.SENTHIL

Subject:

**MEASUREMENTS
AND
INSTRUMENTATION**

Subject Code:

318EET06


Semester:

III

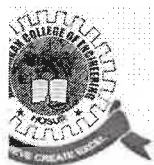
Department:

EEE

Sl.No	Day	Class Period / Hour	Topic	Remarks
WEEK : 1 UNIT- I INTRODUCTION				
1	Tuesday	10am-12pm	Introduction	}
2	Thursday	10am-12pm	Functional elements of an instrument	
WEEK : 2				
1	Tuesday	10am-12pm	Static and dynamic characteristics	} Complete
2	Thursday	10am-12pm	Errors in measurement	
WEEK : 3				
1	Tuesday	10am-12pm	Statistical evaluation of measurement data	} Complete
2	Thursday	10am-12pm	Standards and calibration	
WEEK : 4 UNIT- III ELECTRICAL AND ELECTRONICS INSTRUMENTS				
1	Tuesday	10am-12pm	Principle and types of analog and digital ammeters, multimeters	} Complete
2	Thursday	10am-12pm	Principle and types of analog and digital ammeters, multimeters	
WEEK : 5				
1	Tuesday	10am-12pm	Single and three phase wattmeter's	} Complete
2	Thursday	10am-12pm	Single and three phase energy meters	
WEEK : 6				
1	Tuesday	10am-12pm	Magnetic measurements – Determination of B-H curve, measurements of iron loss, Instrument transformers	} Complete
2	Thursday	10am-12pm	Instruments for measurement of frequency, phase.	
WEEK: 7 UNIT- III COMPARISON METHODS OF MEASUREMENTS				
1	Tuesday	10am-12pm	D.C & A.C potentiometers	}
2	Thursday	10am-12pm	D.C & A.C bridges	
WEEK : 8				
1	Tuesday	10am-12pm	Transformer ratio bridges, Self-balancing bridges.	} Complete
2	Thursday	10am-12pm	Interference & screening	
WEEK : 9				
1	Tuesday	10am-12pm	Electrostatic interference.	} Complete
2	Thursday	10am-12pm	Electromagnetic interference.	
WEEK : 10 UNIT- IV STORAGE AND DISPLAY DEVICES				
1	Tuesday	10am-12pm	Magnetic disk and tape – Recorders	} Complete
2	Thursday	10am-12pm	digital plotters and printers	
WEEK : 11				
1	Tuesday	10am-12pm	CRT display	} Complete
2	Thursday	10am-12pm	digital CRO	

WEEK : 12					
1	Tuesday	10am-12pm	LED, LCD	} computer	
2	Thursday	10am-12pm	Data Loggers		
WEEK : 13			UNIT - V TRANSDUCERS AND DATA ACQUISITION SYSTEMS		
1	Tuesday	10am-12pm	Classification of transducers	} computer	
2	Thursday	10am-12pm	Resistive transducers		
WEEK : 14					
1	Tuesday	10am-12pm	capacitive & inductive transducers , Piezoelectric transducers,	} computer	
2	Thursday	10am-12pm	optical and digital transducers		
WEEK : 15					
1	Tuesday	10am-12pm	Elements of data acquisition system, A/D converters	} computer	
2	Thursday	10am-12pm	D/A converters, Smart sensors		
Prepared by:		Approved by: HOD		Revision No.	Date:
K. SENTHIL. AP/EEE					01.07.2020


Signature of the staff



ADHIYAMAAN COLLEGE OF ENGINEERING(AUTONOMOUS)

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN



Faculty Name : Dr. ANIN VINCELY D
Subject : Heat and Mass Transfer
Academic year : 2020-2021
Year/Semester: III-B/ V

Subject Code : 515MET02
Total no of Hrs : 59
Lecture Hrs : 00

SLNO	CLASS PERIOD/HOUR	TOPICS	REMARKS
UNIT I – CONDUCTION			
WEEK:1			Completed
1	Tuesday 1 st	Introduction and basics of heat transfer	Completed
2	Tuesday 3 rd	Modes of Heat transfer, conduction, convection and radiation	Completed
3	Wednesday 6 th	Effect of temperature on thermal conductivity of different solids, liquids and gases	Completed
4	Friday 2 nd	Fourier's law of Conduction, Newton's law of cooling	Completed
WEEK:2			Completed
5	Tuesday 1 st	Derivation of generalized heat conduction in Cartesian and polar co-ordinates	Completed
6	Tuesday 3 rd	One dimensional steady state heat conduction	Completed
7	Wednesday 6 th	Conduction through plane wall	Completed
8	Friday 2 nd	Conduction through cylinders and spherical systems	Completed
WEEK:3			Completed
9	Tuesday 1 st	Composite systems	Completed
10	Tuesday 3 rd	Conduction with internal heat generation	Completed
11	Wednesday 6 th	Critical radius of insulation	Completed
12	Friday 2 nd	Extended surfaces and problems in fins	Completed
WEEK:4			Completed
13	Tuesday 1 st	Unsteady state heat conduction, lumped system analysis	Completed
14	Tuesday 3 rd	Semi-infinite and infinite solids, use of heisler charts	Completed
UNIT II – CONVECTION			
15	Wednesday 6 th	Introduction to convection fundamentals	Completed
16	Friday 2 nd	Velocity and thermal boundary layer	Completed
WEEK:5			Completed
17	Tuesday 1 st	Types of convection , Dimensional applied to forced and free convection	Completed
18	Tuesday 3 rd	Dimensionless numbers and their physical significance, forced convection	Completed
19	Wednesday 6 th	External flow, flow over plates	Completed
20	Friday 2 nd	External flow , cylinders and spheres	Completed
WEEK:6			Completed
21	Tuesday 1 st	Internal flow , laminar and turbulent flow	Completed
22	Tuesday 3 rd	Combined laminar and turbulent flow , flow over bank of tubes	Completed
23	Wednesday 6 th	Free convection, flow over vertical plate , horizontal plate	Completed
24	Friday 2 nd	Flow over inclined plate	Completed
WEEK:7			Completed
25	Tuesday 1 st	Flow over cylinders and spheres	Completed
UNIT III – PHASE CHANGE HEAT TRANSFER AND HEAT EXCHANGERS			
26	Tuesday 3 rd	Boiling heat transfer, pool boiling	Completed
27	Wednesday 6 th	Boiling curve, flow boiling	Completed
28	Friday 2 nd	Nusselt 's theory of condensation	Completed
WEEK:8			Completed
29	Tuesday 1 st	Condensation heat transfer, film condensation	Completed

30	Tuesday 3 rd	Heat transfer correlations in boiling and condensation	Completed
31	Wednesday 6 th	Types of heat exchangers	Completed
32	Friday 2 nd	Overall heat transfer co-efficient	Completed
WEEK:9			
33	Tuesday 1 st	Fouling factors	Completed
34	Tuesday 3 rd	Analysis of heat exchangers	Completed
35	Wednesday 6 th	LMTD and e-NTU method of Analysis of heat exchangers	Completed
36	Friday 2 nd	Problems in LMTD and NTU method	Completed
WEEK:10			
UNIT IV – RADIATION			
37	Tuesday 1 st	Introduction to radiation	Completed
38	Tuesday 3 rd	Absorptivity, reflectivity and transmissivity	Completed
39	Wednesday 6 th	Black, white and grey body and Emissive power and emissivity	Completed
WEEK:11			
		Model Exam - I	
WEEK:12			
40	Tuesday 1 st	Laws of radiation, Planck, Stefan- Boltzmann, Wein's displacement	Completed
41	Tuesday 3 rd	Kirchhoff law and lambert cosine law	Completed
42	Wednesday 6 th	Radiation exchange between black bodies, shape factor	Completed
43	Friday 2 nd	Heat exchange between non-black bodies	Completed
WEEK:13			
44	Wednesday 6 th	Infinite parallel planes and infinite long concentric cylinders	Completed
45	Friday 2 nd	Radiation shield and Problems in radiation shield	Completed
WEEK:14			
46	Monday 6 th	Heat exchange between two grey surfaces	Completed
47	Tuesday 5 th	Electrical analogy	Completed
48	Wednesday 4 th	Introduction to gas radiation	Completed
UNIT V – MASS TRANSFER			
49	Friday 2 nd	Basic concepts in mass transfer	Completed
WEEK:15			
52	Tuesday 1 st	Diffusion mass transfer	Completed
53	Tuesday 3 rd	Problems in diffusion mass transfer	Completed
54	Wednesday 6 th	Fick' Law of diffusion	Completed
55	Friday 2 nd	Problems in Fick' Law of diffusion	Completed
WEEK:16			
56	Tuesday 1 st	Steady state molecular diffusion	Completed
57	Tuesday 3 rd	Convective mass transfer	Completed
58	Wednesday 6 th	Problems in convective mass transfer	Completed
59	Friday 2 nd	Momentum ,heat and mass transfer analogy	Completed

Prepared by

 (ANIN VINCELY D)

Approved by

 (HOD/MECH)

PROFESSOR & HEAD
 Department of Mechanical Engineering
 Adhiyamaan College of Engineering (Autonomous)
 Dr. M.G.R. Nagar, HOSUR - 535 109



ADHIYAMAAN COLLEGE OF ENGINEERING
(AUTONOMOUS)
DEPARTMENT OF MECHANICAL ENGINEERING



LESSON PLAN

Faculty Name : Dr.M.SAKTHIVEL
Subject : Mechatronics and Robotics
Academic year : 2020-21
Year/Semester : IV/7

Subject Code : 718MET02
Total no of Hrs : 45
Tutorial Hrs. : ---
Lecture Hrs. : 45

SL NO	CLASS PERIOD/HOUR	TOPICS	REMARKS
WEEK:1		UNIT I MECHATRONICS SENSORS AND TRANSDUCERS	
1	Tuesday 2 nd	Introduction to Mechatronics Systems	Completed
2	Wednesday 1 st	Measurement Systems, Control Systems	Completed
3	Thursday 7th	Microprocessor based Controllers, Sensors and Transducers	Completed
4	Friday 3 rd	Sensors for Displacement	Completed
WEEK-2			Completed
5	Tuesday 2 nd , 3 rd , & 4 th	Position and Proximity	Completed
6	Wednesday 1 st	Velocity, Motion	Completed
7	Thursday 7th	Force, Fluid Pressure	Completed
8	Friday 3 rd	Liquid Flow, Liquid Level	Completed
WEEK-3			Completed
9	Tuesday 2 nd	Temperature, Light Sensors, Selection of Sensors	Completed
		UNIT II SYSTEM MODELS AND CONTROLLERS	
10	Wednesday 1 st	Building blocks of Mechanical	Completed
11	Thursday 7th	Electrical, Fluid and Thermal Systems	Completed
12	Friday 3 rd	Rotational and Translational Systems, Electromechanical Systems	Completed
WEEK-4			
13	Tuesday 2 nd	Continuous and discrete process Controllers, Control Mode. Two - Step mode, Proportional Mode	Completed
14	Wednesday 1 st	Derivative Mode, Integral Mode, PID Controllers	Completed
15	Thursday 7th	Digital Controllers, Velocity Control	Completed
16	Friday 3 rd	Adaptive Control, Digital Logic Control, Micro Processors Control	Completed
WEEK-5			
		UNIT III PROGRAMMING LOGIC CONTROLLERS AND DESIGN OF MECHATRONICS SYSTEM	
17	Tuesday 2 nd	Programmable Logic Controllers, Basic Structure, Input / Output Processing	Completed
18	Wednesday 1 st	Programming – Mnemonics, Timers, Internal relays and counters	Completed
19	Thursday 7th	Shift Registers, Master and Jump Controls	Completed
20	Friday 3 rd	Stages in designing Mechatronics Systems	Completed
WEEK-6			
21	Tuesday 2 nd	Traditional and Mechatronic Design	Completed
22	Wednesday 1 st	Possible Design Solutions	Completed
23	Thursday 7th	Autonomous mobile robot	Completed
24	Friday 3 rd	Wireless surveillance balloon	Completed
WEEK-7			
25	Tuesday 2 nd	Engine Management system	Completed
26	Wednesday 1 st	Automatic car park barrier	Completed

		UNIT IV ROBOT AND END EFFECTORS	
27	Thursday 7th	Robot – Definition, Robot Anatomy	Completed
28	Friday 3 rd	Co-ordinate Systems, Work Envelope, types and classification	Completed
WEEK-8			
29	Tuesday 2 nd	Specifications - Pitch, Yaw, Roll, Joint Notations, Speed of Motion, Pay Load	Completed
30	Wednesday 1 st	Robot Parts and Functions, Need for Robots, Different Applications	Completed
31	Thursday 7th	End Effectors, Grippers	Completed
32	Friday 3 rd	Mechanical Grippers, Pneumatic and Hydraulic Grippers	Completed
WEEK-9			
33	Tuesday 2 nd	Magnetic Grippers, Vacuum Grippers	Completed
34	Wednesday 1 st	Two Fingereed and Three Fingereed Grippers	Completed
35	Thursday 7th	Internal Grippers and External Grippers	Completed
36	Friday 3 rd	Selection and Design Considerations	Completed
WEEK-10			
		UNIT V ROBOT KINEMATICS AND ROBOT PROGRAMMING	
37	Tuesday 2 nd	Forward Kinematics, Inverse Kinematics and Differences	Completed
38	Wednesday 1 st	Forward Kinematics and Inverse Kinematics of Manipulators with Two, Three Degrees of Freedom	Completed
39	Thursday 7th	Teach Pendant Programming	Completed
40	Friday 3 rd	Lead through programming	Completed
WEEK-11			
41	Tuesday 2 nd	Robot programming Languages	Completed
42	Wednesday 1 st	VAL Programming	Completed
43	Thursday 7th	Motion Commands	Completed
44	Friday 3 rd	Sensor Commands	Completed
WEEK-12			
45	Tuesday 2 nd	End effector commands, and Simple programs.	Completed

Prepared By

M. S. S. S.
(Dr. M. KARTHIKEYAN)

Approved by


(HOD/MECH)

PROFESSOR & HEAD

Department of Mechanical Engineering
Adhiyamaan College of Engineering (Autonomous)
Dr. M.G.R. Nagar, HOSUR - 635 109

ADHIYAMAAN COLLEGE OF ENGINEERING (Autonomous)

Dr. M.G.R Nagar, Hosur-635109

Department of Biomedical Engineering



Lesson Plan (2020-21) – ODD SEMESTER

Faculty Name: T.SELVA SHERIN
Class: IV Biomedical Engineering

Subject: REHABILITATION ENGINEERING
Semester: VII

SI No	DAY/PERIOD	Topic	Remarks
Week 1			
UNIT I			
1	TUE (2-4 PM)	Introduction, Medical rehabilitation, Preventive Rehabilitation-Levels of prevention,	completed
2	FRI (2-4 PM)	Impairment, Disability & handicap	completed
Week 2			
1	TUE (2-4 PM)	Diagnosis of disability, Functional diagnosis, Primary & secondary Disabilities	completed
2	FRI (2-4 PM)	Rehabilitation team- medical and paramedical team members	completed
Week 3			
1	TUE (2-4 PM)	Socio-vocational team members, Revision Unit-I	completed
UNIT II			
2	FRI (2-4 PM)	General principles of Orthosis, Biomechanics of orthosis	completed
Week 4			
1	TUE (2-4 PM)	Classification of orthotics- Functional & Regional, Merits & demerits of orthotics	completed
2	FRI (2-4 PM)	Material and fabrication for lower limb orthosis, Calipers-FO,AFO	completed
Week 5			
1	TUE (2-4 PM)	KAFO, HKAF0, Spinal Orthosis	completed
2	FRI (2-4 PM)	Types of spinal orthosis- Cervical, Head cervical thoracic orthosis	completed
Week 6			
1	TUE (2-4 PM)	Thoraco lumbar sacral orthosis	completed
2	FRI (2-4 PM)	Lumbosacral orthosis	completed
Week 7			
1	TUE (2-4 PM)	Splints- functions & types.	completed
2	FRI (2-4 PM)	Revision Unit-II	completed
Week 8			
UNIT-III			
1	TUE (2-4 PM)	Coordination exercises-Components of coordinated activity ,General principles of coordination training	completed
2	FRI (2-4 PM)	Frenkel's exercises, Gait-Gait analysis, Gait Training	completed
Week 9			
1	TUE (2-4 PM)	Relaxation exercises-Methods for training Relaxation	completed
2	FRI (2-4 PM)	Strengthening exercises-Strength training, Types	completed

		of Contraction	completed
Week 10			
1	TUE (2-4 PM)	Mobilisation exercises, Endurance exercises	Completed
2	FRI (2-4 PM)	Revision Unit-III	Completed
UNIT IV			
Week 11			
1	TUE (2-4 PM)	Introduction to communication, Speech, Aphasia, Types of aphasia	completed
2	FRI (2-4 PM)	Dysarthria, Speech therapy, Augmentative communication-general form of communication	completed
Week 12			
1	TUE (2-4 PM)	Types of visual aids Writing aids	completed
2	FRI (2-4 PM)	Introduction to virtual reality	completed
Week 13			
1	TUE (2-4 PM)	Virtual reality based rehabilitation. Hand motor recovery systems with Phantom haptics, Robotics and Virtual Reality Applications in Mobility Rehabilitation	completed
2	FRI (2-4 PM)	Revision Unit-IV	completed
UNIT-V			
Week 14			
1	TUE (2-4 PM)	General principles of Amputation surgery, Upper limb amputation, Levels of upper limb Amputation	completed
2	FRI (2-4 PM)	Lower limb amputation, Rehabilitation of lower limb amputation, Prosthetics- Classification	completed
Week 15			
1	TUE (2-4 PM)	Components of prosthesis, Upper limb prosthetics, Above elbow prosthesis	completed
2	FRI (2-4 PM)	Below elbow prosthesis, Prosthesis for lower extremity	completed

Prepared By: (Staff)  T.SELVA SHERIN	Approved By: (HOD) 	Date: 01 07 '20
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ADHIYAMAAN COLLEGE OF ENGINEERING (AUTONOMOUS)

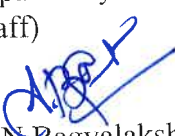

Dr.M.G.R.Nagar Hosur
DEPARTMENT OF BIOMEDICAL ENGINEERING

Lesson Plan (2020 – 2021)

Faculty Name : Dr.N.Bagyalakshmi
Class : III BME

Subject : Bio Control systems / 518BMT04
Semester: V

Sl. No	Class/ Hour FN -10 am to 12pm AN – 2pm to 4pm	Topic	Remarks
WEEK:1			
1	Mon - FN	Terminology and basic structure of control system	completed
2	Fri - FN	Translational mechanical systems - Problems	completed
WEEK:2			
1	Mon - FN	Modeling of electrical systems - Problems Electromechanical systems - Problems	completed
2	Fri - FN	Rotational mechanical systems Electromechanical systems - Problems	completed
WEEK:3			
1	Mon - FN	Block diagram Reduction - Problems	completed
2	Fri - FN	Signal flow graph - Problems	completed
WEEK:4			
1	Mon - FN	Step and Impulse responses of first order systems Step and Impulse responses of second order systems	completed
2	Fri - FN	Step and Impulse responses of second order systems Step and Impulse responses of first order systems	completed
WEEK:5			
1	Mon - FN	Determination of time domain specifications of first and second order systems from its output responses Definition of steady state error constants and its computation	completed
2	Fri - FN	Definition of steady state error constants and its computation Response with P,PI,PD and PID controllers	completed
WEEK:6			
1	Mon - FN	Definition of stability Routh-Hurwitz criteria -Problems	completed
2	Fri - FN	Routh-Hurwitz criteria - Problems	completed
WEEK:7			
1	Mon - FN	Construction of root locus and study of stability	completed

2	Fri - FN	Construction of root locus and study of stability Definition of dominant poles	completed
WEEK:8			
1	Mon - FN	Relative stability - Problems	completed
2	Fri - FN	Revision	completed
WEEK:9			
1	Mon - FN	Frequency response Frequency domain specifications	completed
2	Fri - FN	Nyquist stability criterion -Problems	completed
WEEK:10			
1	Mon - FN	Nyquist plot and determination of closed loop stability Bode plot and determination of gain margin and phase margin	completed
2	Fri - FN	Bode plot and determination of gain margin and phase margin	completed
WEEK:11			
1	Mon - FN	Bode plot and determination of gain margin and phase margin Nichol's chart -Problems	completed
2	Fri - FN	Nichol's chart to compute resonance frequency and band width	completed
WEEK:12			
1	Mon - FN	Block diagram representation of the muscle stretch reflex	completed
2	Fri - FN	Difference between engineering and physiological control systems	
WEEK:13			
1	Mon - FN	Generalized system properties Models with combination of system elements	completed
2	Fri - FN	Models with combination of system elements	completed
WEEK:14			
1	Mon - FN	Introduction to simulation	completed
2	Fri - FN	Case Studies	completed
WEEK:15			
1	Mon - FN	Revision - Unit 1 and Unit 2	completed
2	Fri - FN	Revision - Unit 3 and Unit 4	completed
Prepared By : (Staff)  Dr.N.Bagyalakshmi		Approved By : (HOD) 	Revision No: Date : 01.02.2021



ADHIYAMAAN COLLEGE OF ENGINEERING
Dr. M.G.R Nagar. Hosur-635109
DEPARTMENT OF BIOMEDICAL ENGINEERING
Lesson Plan (2020-2021) Even Semester

Faculty Name: P. GANESH BABU
Class: II-Year Biomedical

Subject: DLD
Semester: IV

Day/ Session/ Hour	Topic	Remarks
WEEK:1		
UNIT-1 NUMBER SYSTEMS AND BOOLEAN ALGEBRA		
Mon-FN 10-12 AM	Review of number Systems	completed
Thurs-FN 10-12 AM	Binary codes - BCD, Gray code, Excess 3 code, Parity, Hamming code	completed
WEEK:2		
Mon-FN 10-12 AM	Boolean algebra - Basic postulates and theorems, Switching functions, Canonical forms	completed
Thurs-FN 10-12 AM	Logic gates- Standard representation of logic functions	completed
WEEK:3		
Mon-FN 10-12 AM	Simplification of logic functions through K – maps	completed
Thurs-FN 10-12 AM	Quine-McClusky method	completed
UNIT-II COMBINATIONAL LOGIC DESIGN		
WEEK:4		
Mon-FN 10-12 AM	Implementation using logic gates	completed
Thurs-FN 10-12 AM	Binary / BCD adders and subtractors	completed
WEEK:5		
Mon-FN 10-12 AM	Magnitude comparator	completed
Thurs-FN 10-12 AM	Decoders & Encoders	completed
WEEK:6		
Mon-FN 10-12 AM	Multiplexers and Demultiplexers	completed
Thurs-FN 10-12 AM	Implementation of combinational logic function using multiplexers and demultiplexers	completed
UNIT-III SEQUENTIAL LOGIC DESIGN		
WEEK:7		
Mon-FN 10-12 AM	Introduction to Synchronous and Asynchronous Sequential circuits	completed
Thurs-FN 10-12 AM	Latch, Flip Flops. Mealy/Moore models	completed

WEEK:8		
Mon-FN 10-12 AM	Concept of state, State diagram, State table	Completed
Thurs-FN 10-12 AM	Design of synchronous sequential circuits	Completed
WEEK:9		
Mon-FN 10-12 AM	Up-down / Modulus counters, Sequence detector	Completed
Thurs-FN 10-12 AM	Shift register: Ring counter, Johnson counter, Timing diagram	Completed
WEEK:10		
UNIT-IV PROGRAMMABLE LOGIC DEVICES AND MEMORIES		
Mon-FN 10-12 AM	Introduction to PLDs –PAL	Completed
Thurs-FN 10-12 AM	PLA, FPGA	Completed
WEEK:11		
Mon-FN 10-12 AM	Implementation of digital functions using PLDs	Completed
Thurs-FN 10-12 AM	Memories: Read only memories, PROMs, EPROMs, EEPROMs	Completed
WEEK:12		
Mon-FN 10-12 AM	RAMs: Static RAM, Dynamic RAM, Double Data Rate SDRAM	Completed
Thurs-FN 10-12 AM	Magnetic memories, CD-ROM, Flash memories	Completed
WEEK:13		
UNIT-V DIGITAL LOGIC FAMILIES		
Mon-FN 10-12 AM	Characteristics of digital ICs – Voltage and current ratings	Completed
Thurs-FN 10-12 AM	Noise margin, Propagation delay, Power dissipation, Fan-in, Fan-out	Completed
WEEK:14		
Mon-FN 10-12 AM	TTL, ECL	Completed
Thurs-FN 10-12 AM	MOS transistor switches –NMOS Inverter / Logic gates	Completed
WEEK:15		
Mon-FN 10-12 AM	CMOS Inverter / logic gates	Completed
Thurs-FN 10-12 AM	Case studies - Biomedical Application	Completed

Prepared By: (Staff)  P. GANESH BABU	Approved By: (HOD) 	Revision No.				Date:		
						01	02	21



70-21

ADHIYAMAAN COLLEGE OF ENGINEERING, HOSUR
(AUTONOMOUS)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

LESSON PLAN

Faculty Name:	M.SUKANYA	Subject:	MECHATRONICS AND ROBOTICS
Subject Code:	518MEO07	Year & Semester:	III Year & V Semester
			BATCH : 2019-2023

Sl.No	Day	Class Period/ Hour	Topic	Remarks
Week : 1				
UNIT I MECHATRONICS SENSORS AND TRANSDUCERS				
1	Monday	2pm to 4pm	Introduction to Mechatronics Systems, Measurement Systems.	Completed
2	Friday	10am to 12pm	Control Systems, Microprocessor based Controllers.	Completed
Week : 2				
1	Monday	2pm to 4pm	Sensors and Transducers, Performance Terminology.	Completed
2	Friday	10am to 12pm	Sensors for Displacement, Position and Proximity.	Completed
Week : 3				
1	Monday	2pm to 4pm	Velocity, Motion, Force, Fluid Pressure, Liquid Flow, Liquid Level.	Completed
2	Friday	10am to 12pm	Temperature, Light Sensors, Selection of Sensors.	Completed
Week : 4				
UNIT II SYSTEM MODELS AND CONTROLLERS				
1	Monday	2pm to 4pm	Building blocks of Mechanical, Electrical, Fluid and Thermal Systems.	Completed
2	Friday	10am to 12pm	Rotational and Translational Systems, Electromechanical Systems, Hydraulic and Mechanical Systems.	Completed
Week : 5				
1	Monday	2pm to 4pm	Continuous and discrete process Controllers, Control Mode.	Completed
2	Friday	10am to 12pm	Two - Step mode, Proportional Mode, Derivative Mode, Integral Mode.	Completed
Week : 6				
1	Monday	2pm to 4pm	PID Controllers, Digital Controllers, Velocity Control, Adaptive Control.	Completed
2	Friday	10am to 12pm	Digital Logic Control, Micro Processors Control.	Completed
Week : 7				
UNIT III PROGRAMMING LOGIC CONTROLLERS AND DESIGN OF MECHATRONICS SYSTEM				
1	Monday	2pm to 4pm	Programmable Logic Controllers, Basic Structure, Input / Output Processing.	Completed
2	Friday	10am to 12pm	Programming – Mnemonics, Timers, Internal relays and counters, Shift Registers, Master and Jump Controls.	Completed
Week : 8				
1	Monday	2pm to 4pm	Data Handling, Analogs Input / Output, Selection of a PLC.	Completed
2	Friday	10am to 12pm	Stages in designing Mechatronics Systems, Traditional and Mechatronic Design.	Completed

Week : 9				completed
1	Monday	2pm to 4pm	Possible Design Solutions, Autonomous mobile robot.	completed
2	Friday	10am to 12pm	Wireless surveillance balloon- Engine Management system- Automatic car park barrier.	completed
UNIT IV ROBOT AND END EFFECTORS				
Week: 10				completed
1	Monday	2pm to 4pm	Robot – Definition, Robot Anatomy, Co-ordinate Systems, Work Envelope, types and classification.	completed
2	Friday	10am to 12pm	Specifications - Pitch, Yaw, Roll, Joint Notations, Speed of Motion, Pay Load, Robot Parts and Functions.	completed
Week : 11				completed
1	Monday	2pm to 4pm	Need for Robots, Different Applications.	completed
2	Friday	10am to 12pm	End Effectors, Grippers - Mechanical Grippers, Pneumatic and Hydraulic Grippers.	completed
Week : 12				completed
1	Monday	2pm to 4pm	Magnetic Grippers, Vacuum Grippers, Two Fingered and Three Fingered Grippers.	completed
2	Friday	10am to 12pm	Internal Grippers and External Grippers, Selection and Design Considerations.	completed
UNIT V ROBOT KINEMATICS AND ROBOT PROGRAMMING				
Week: 13				completed
1	Monday	2pm to 4pm	Forward Kinematics, Inverse Kinematics and Differences.	completed
2	Friday	10am to 12pm	Forward Kinematics and Inverse Kinematics of Manipulators with Two, Three Degrees of Freedom (In 2 Dimensional).	completed
Week : 14				completed
1	Monday	2pm to 4pm	Teach Pendant Programming, Lead through programming.	completed
2	Friday	10am to 12pm	Robot programming Languages - VAL Programming.	completed
Week : 15				completed
1	Monday	2pm to 4pm	Motion Commands, Sensor Commands.	completed
2	Friday	10am to 12pm	End effector commands, and Simple programs.	completed

Prepared by	Approved by	Signature of the Staff
M.SUKANYA Assistant Professor/EEE	 HOD / EEE	



ADHIYAMAAN COLLEGE OF ENGINEERING
(AUTONOMOUS)
DEPARTMENT OF MECHANICAL ENGINEERING



LESSON PLAN

Faculty Name : M. JAMES SELVAKUMAR
Subject : Heat and Mass transfer
Academic year : 2020-2021
Year/Semester : III/ V

Subject Code : 518MET02
Total no of Hrs : 04
Tutorial Hrs. :
Lecture Hrs. : 04

SLNO	CLASS PERIOD/HOUR	TOPICS	REMARKS
UNIT I – CONDUCTION			
WEEK:1			
1	Monday 3 rd hr	Introduction and basics of heat transfer	Completed
2	Wednesday 3 rd hr	Modes of Heat transfer, conduction, convection and radiation	Completed
3	Wednesday 5 th hr	Effect of temperature on thermal conductivity of different solids, liquids and gases	Completed
4	Wednesday 7 th hr	Fourier's law of Conduction, Newton's law of cooling	Completed
WEEK:2			
5	Monday 3 rd hr	Derivation of generalized heat conduction in Cartesian and polar co-ordinates	Completed
6	Wednesday 3 rd hr	One dimensional steady state heat conduction	Completed
7	Wednesday 5 th hr	Conduction through plane wall	Completed
8	Wednesday 7 th hr	Conduction through cylinders and spherical systems	Completed
WEEK:3			
9	Monday 3 rd hr	Composite systems	Completed
10	Wednesday 3 rd hr	Conduction with internal heat generation	Completed
11	Wednesday 5 th hr	Critical radius of insulation	Completed
12	Wednesday 7 th hr	Extended surfaces and problems in fins	Completed
WEEK:4			
13	Monday 3 rd hr	Unsteady state heat conduction, lumped system analysis	Completed
14	Wednesday 3 rd hr	Semi-infinite and infinite solids, use of heisler charts	Completed
UNIT II – CONVECTION			
15	Wednesday 5 th hr	Introduction to convection fundamentals	Completed
16	Wednesday 7 th hr	Velocity and thermal boundary layer	Completed
WEEK:5			
17	Monday 3 rd hr	Types of convection , Dimensional applied to forced and free convection	Completed
18	Wednesday 3 rd hr	Dimensionless numbers and their physical significance, forced convection	Completed
19	Wednesday 5 th hr	External flow, flow over plates	Completed
20	Wednesday 7 th hr	External flow , cylinders and spheres	Completed
WEEK:6			
21	Monday 3 rd hr	Internal flow , laminar and turbulent flow	Completed
22	Wednesday 3 rd hr	Combined laminar and turbulent flow , flow over bank of tubes	Completed
23	Wednesday 5 th hr	Free convection, flow over vertical plate , horizontal plate	Completed
24	Wednesday 7 th hr	Flow over inclined plate	Completed
WEEK:7			
25	Monday 3 rd hr	Flow over cylinders and spheres	Completed
UNIT III – PHASE CHANGE HEAT TRANSFER AND HEAT EXCHANGERS			
26	Wednesday 3 rd hr	Boiling heat transfer, pool boiling	Completed
27	Wednesday 5 th hr	Boiling curve, flow boiling	Completed
28	Wednesday 7 th hr	Nusselt 's theory of condensation	Completed

WEEK:8			
29	Monday 3 rd hr	Condensation heat transfer, film condensation	Completed
30	Wednesday 3 rd hr	Heat transfer correlations in boiling and condensation	Completed
31	Wednesday 5 th hr	Types of heat exchangers	Completed
32	Wednesday 7 th hr	Overall heat transfer co-efficient	Completed
WEEK:9			
33	Monday 3 rd hr	Fouling factors	Completed
34	Wednesday 3 rd hr	Analysis of heat exchangers	Completed
35	Wednesday 5 th hr	LMTD and e-NTU method of Analysis of heat exchangers	Completed
36	Wednesday 7 th hr	Problems in LMTD and NTU method	Completed
WEEK:10			
UNIT IV – RADIATION			
37	Monday 3 rd hr	Introduction to radiation	Completed
38	Wednesday 3 rd hr	Absorptivity, reflectivity and transmissivity	Completed
39	Wednesday 5 th hr	Black, white and grey body	Completed
40	Wednesday 7 th hr	Emissive power and emissivity	Completed
WEEK:11			
41	Monday 3 rd hr	Laws of radiation, Planck, Stefan- Boltzmann, Wein's displacement	Completed
42	Wednesday 3 rd hr	Kirchhoff law and lambert cosine law	Completed
WEEK:12			
43	Wednesday 5 th hr	Radiation exchange between black bodies, shape factor	Completed
WEEK:13			
44	Monday 3 rd hr	Heat exchange between non-black bodies	Completed
45	Wednesday 3 rd hr	Infinite parallel planes and infinite long concentric cylinders	Completed
46	Wednesday 5 th hr	Radiation shield	Completed
47	Wednesday 7 th hr	Problems in radiation shield	Completed
WEEK:14			
48	Monday 3 rd hr	Heat exchange between two grey surfaces	Completed
49	Wednesday 3 rd hr	Electrical analogy	Completed
50	Wednesday 5 th hr	Introduction to gas radiation	Completed
UNIT V – MASS TRANSFER			
51	Wednesday 7 th hr	Basic concepts in mass transfer	Completed
WEEK:15			
52	Monday 3 rd hr	Diffusion mass transfer	Completed
53	Wednesday 3 rd hr	Problems in diffusion mass transfer	Completed
54	Wednesday 5 th hr	Fick' Law of diffusion	Completed
55	Wednesday 7 th hr	Problems in Fick' Law of diffusion	Completed
WEEK:16			
56	Monday 3 rd hr	Steady state molecular diffusion	Completed
57	Wednesday 3 rd hr	Convective mass transfer	Completed
58	Wednesday 5 th hr	Problems in convective mass transfer	Completed
WEEK:17			
59	Monday 3 rd hr	Momentum ,heat and mass transfer analogy	Completed
60	Wednesday 3 rd hr	Convective mass transfer correlations	Completed
61	Wednesday 5 th hr	Revision classes	Completed
62	Wednesday 7 th hr	Revision classes	Completed

Prepared By

(M. JAMES SELVAKUMAR)

Approved by

(HOD/MECH)