



**ADHIYAMAAN COLLEGE OF ENGINEERING, HOSUR**  
(AUTONOMOUS)  
**DEPARTMENT OF MECHANICAL ENGINEERING**



**LESSON PLAN**

Faculty Name : **R. SARATH KUMAR**  
Subject : **FINITE ELEMENT ANALYSIS**  
Academic year : **2019-2020**  
Semester : **VII SEM- B SEC**

Subject Code : **715MET02**  
Total No. of. Hrs : **45**  
Lecture Hrs : **45**  
Tutorial Hrs : **-**

Period	Class Period/ Hour	TOPICS	REMARKS
<b>WEEK-1</b>		<b>UNIT I - FINITE ELEMENT FORMULATION OF BOUNDARY VALUE PROBLEMS</b>	
1	Tuesday 1 <sup>st</sup> hr	Weighted residual methods -general weighted residual statement	Completed
2	Tuesday 3 <sup>rd</sup> hr	weak formulation of the weighted residual statement	Completed
3	Friday 5 <sup>st</sup> hr	piecewise continuous trial functions	Completed
4	Friday 7 <sup>st</sup> hr	Principle of stationary total potential - Rayleigh Ritz method - piecewise continuous trial functions	Completed
<b>WEEK-2</b>			
5	Tuesday 1 <sup>st</sup> hr	Gaussian elimination method	Completed
6	Tuesday 3 <sup>rd</sup> hr	Rayleigh Ritz method - Galerkin method.	Completed
7	Friday 5 <sup>st</sup> hr	<b>UNIT II ONE DIMENSIONAL FINITE ELEMENT ANALYSIS</b>	Completed
8	Friday 7 <sup>st</sup> hr	General form of total potential for 1-D applications - generic form of finite element equations - linear bar element	Completed
<b>WEEK-3</b>			
9	Tuesday 1 <sup>st</sup> hr	Quadratic bar element -nodal approximation - development of shape functions -	Completed
10	Tuesday 3 <sup>rd</sup> hr	Extension to plane truss-	Completed
11	Friday 5 <sup>st</sup> hr	Element matrices and vectors	Completed
12	Friday 7 <sup>st</sup> hr	Development of element equations - assembly -	Completed
<b>WEEK-4</b>			
13	Tuesday 1 <sup>st</sup> hr	Element connectivity	Completed
14	Tuesday 3 <sup>rd</sup> hr	Global equations - solution methods - -	Completed
15	Friday 5 <sup>st</sup> hr	Beam element	Completed
16	Friday 7 <sup>st</sup> hr	Nodal approximation	Completed
<b>WEEK-5</b>			
17	Tuesday 1 <sup>st</sup> hr	Shape functions -	Completed
18	Tuesday 3 <sup>rd</sup> hr	Element matrices and vectors	Completed
19	Friday 5 <sup>st</sup> hr	<b>UNIT III TWO DIMENSIONAL FINITE ELEMENT ANALYSIS</b>	
20	Friday 7 <sup>st</sup> hr	Approximation of geometry and field variable - 3 noded Triangular elements	Completed
<b>WEEK-6</b>			
21	Tuesday 1 <sup>st</sup> hr	Four noded rectangular elements	Completed
22	Tuesday 3 <sup>rd</sup> hr	Higher order elements	Completed
23	Friday 5 <sup>st</sup> hr	Natural coordinates and coordinate transformations - triangular and quadrilateral element	Completed
24	Friday 7 <sup>st</sup> hr	Iso-parametric elements	Completed
<b>WEEK-7</b>			
25	Tuesday 1 <sup>st</sup> hr	Structural mechanics applications in 2-dimensions	Completed
26	Tuesday 3 <sup>rd</sup> hr	Elasticity equations - stress strain relations	Completed

27	Friday 5 <sup>st</sup> hr	Element equations - assembly	Completed
28	Friday 7 <sup>st</sup> hr	Need for quadrature formulæ - transformations to natural coordinates	Completed
<b>WEEK-8</b>			
29	Tuesday 1 <sup>st</sup> hr	Gaussian quadrature -	Completed
30	Tuesday 3 <sup>rd</sup> hr	Example problems in plane stress, plane strain and axisymmetric applications	Completed
<b>UNIT IV DYNAMIC ANALYSIS USING FINITE ELEMENT METHOD</b>			
31	Friday 5 <sup>st</sup> hr	Vibration problems	Completed
32	Friday 7 <sup>st</sup> hr	Equations of motion based on weak form	Completed
<b>WEEK-9</b>			
33	Tuesday 1 <sup>st</sup> hr	Axial vibration of bars - transverse vibration of beams	Completed
34	Tuesday 3 <sup>rd</sup> hr	Consistent mass matrices and lumped mass matrices	Completed
35	Friday 5 <sup>st</sup> hr	Element equations -solution of eigen value problems	Completed
36	Friday 7 <sup>st</sup> hr	Vector iteration methods.	Completed
<b>WEEK-10</b>			
<b>UNIT V APPLICATIONS IN HEAT TRANSFER &amp; FLUID FLOW ANALYSIS</b>			
37	Tuesday 1 <sup>st</sup> hr	Introduction	Completed
38	Tuesday 3 <sup>rd</sup> hr	Basic equation of steady state heat transfer	Completed
39	Friday 5 <sup>st</sup> hr	And fluid flow problems	Completed
40	Friday 7 <sup>st</sup> hr	Steady state heat transfer	Completed
<b>WEEK-11</b>			
41	Tuesday 1 <sup>st</sup> hr	1D finite element formulation	Completed
42	Tuesday 3 <sup>rd</sup> hr	1D heat transfer and fluid flow problems	Completed
43	Friday 5 <sup>st</sup> hr	Scalar variable problems in 2-Dimensions	Completed
44	Friday 7 <sup>st</sup> hr	Problems Solving	Completed
<b>WEEK-12</b>			
45	Tuesday 1 <sup>st</sup> hr	Applications to heat transfer in 2- Dimension.	Completed

Prepared By



(R. SARATH KUMAR)

Approved by



(HOD/MECH)

PROFESSOR & HEAD  
 Department of Mechanical Engineering  
 Adiyamaan College of Engineering (Autonomous)  
 Dr. M.G.R. Nagar, HOSUR - 625 109



**ADHIYAMAAN COLLEGE OF ENGINEERING**  
(AUTONOMOUS)  
**DEPARTMENT OF MECHANICAL ENGINEERING**



**LESSON PLAN**

Faculty Name : N. SHYAAM SUNDHAR  
Subject : Thermal Engineering  
Academic year : 2019-2020  
Year/Semester : II/ IV- C Sec

Subject Code : 415MET03  
Total no of Hrs : 05  
Lecture Hrs. : 05

SL NO	CLASS PERIOD/HOUR	TOPICS	REMARKS
<b>WEEK:1</b>		<b>UNIT I- GAS POWER CYCLES</b>	
1	Monday 6 <sup>th</sup>	Air standard cycles- Assumptions - Otto Cycle	Completed
2	Wednesday 1 <sup>st</sup>	Otto Cycle- Problems	Completed
3	Wednesday 6 <sup>th</sup>	Diesel Cycle - Problems	Completed
4	Friday 2 <sup>nd</sup>	Dual Cycle- Problems	Completed
5	Friday 4 <sup>th</sup>	Calculation of Mean Effective Pressure Problems	Completed
<b>WEEK-2</b>			
6	Monday 6 <sup>th</sup>	Brayton Cycle, Problems	Completed
7	Wednesday 1 <sup>st</sup>	Calculation of Mean Effective Pressure	Completed
8	Wednesday 6 <sup>th</sup>	Air Standard Efficiency, Problems	Completed
9	Friday 2 <sup>nd</sup>	Problems	Completed
10	Friday 4 <sup>th</sup>	Problems	Completed
<b>WEEK-3</b>			
11	Monday 6 <sup>th</sup>	Problems	Completed
12	Wednesday 1 <sup>st</sup>	Theoretical PV Diagram of 2S Engine	Completed
13	Wednesday 6 <sup>th</sup>	Actual PV Diagram of 2S Engine	Completed
14	Friday 2 <sup>nd</sup>	Theoretical PV Diagram of 4S Engine	Completed
15	Friday 4 <sup>th</sup>	Actual PV Diagram of 4S Engine	Completed
<b>WEEK-4</b>		<b>UNIT II- INTERNAL COMBUSTION ENGINES</b>	
16	Monday 6 <sup>th</sup>	Introduction, Classification, Components and their function	Completed
17	Wednesday 1 <sup>st</sup>	Valve timing diagram	Completed
18	Wednesday 6 <sup>th</sup>	Port timing diagram	Completed
19	Friday 2 <sup>nd</sup>	Comparison of two stroke and four stroke engines,	Completed
20	Friday 4 <sup>th</sup>	Carburettor system	Completed
<b>WEEK-5</b>			
21	Monday 6 <sup>th</sup>	Diesel Pump and Injector system	Completed
22	Wednesday 1 <sup>st</sup>	Performance calculation	Completed
23	Wednesday 6 <sup>th</sup>	Comparison of petrol and diesel engine	Completed
24	Friday 2 <sup>nd</sup>	Problems	Completed
25	Friday 4 <sup>th</sup>	Problems	Completed
<b>WEEK-6</b>			
26	Monday 6 <sup>th</sup>	Problems	Completed
27	Wednesday 1 <sup>st</sup>	Lubrication system	Completed
28	Wednesday 6 <sup>th</sup>	Cooling system	Completed
29	Friday 2 <sup>nd</sup>	Battery and Magneto Ignition System	Completed
30	Friday 4 <sup>th</sup>	Exhaust gas analysis- pollution control norms	Completed
<b>WEEK-7</b>		<b>UNIT III- STEAM NOZZLES AND TURBINES</b>	
31	Monday 6 <sup>th</sup>	Flow of Steam through Nozzles	Completed
32	Wednesday 1 <sup>st</sup>	Shapes of Nozzles	Completed
33	Wednesday 6 <sup>th</sup>	Effect of friction	Completed
34	Friday 2 <sup>nd</sup>	Critical pressure ratio	Completed
35	Friday 4 <sup>th</sup>	Supersaturated flow	Completed
<b>WEEK-8</b>			
36	Monday 6 <sup>th</sup>	Problems	Completed

37	Wednesday 1 <sup>st</sup>	Problems	Completed
38	Wednesday 6 <sup>th</sup>	Problems	Completed
39	Friday 2 <sup>nd</sup>	Problems	Completed
40	Friday 4 <sup>th</sup>	Steam Turbines - Impulse and Reaction principles	Completed
<b>WEEK-9</b>			
41	Monday 6 <sup>th</sup>	Compounding, velocity diagram for simple turbines	Completed
42	Wednesday 1 <sup>st</sup>	Velocity diagram for multi-stage turbines, Problems	Completed
43	Wednesday 6 <sup>th</sup>	Problems	Completed
44	Friday 2 <sup>nd</sup>	Problems	Completed
45	Friday 4 <sup>th</sup>	Problems	Completed
<b>WEEK-10</b>			
<b>UNIT IV- AIR COMPRESSOR</b>			
46	Monday 6 <sup>th</sup>	Classification and working principle of various types of compressors	Completed
47	Wednesday 1 <sup>st</sup>	Work of compression with and without clearance volume	Completed
48	Wednesday 6 <sup>th</sup>	Volumetric efficiency, Isothermal efficiency, Problems	Completed
49	Friday 2 <sup>nd</sup>	Problems	Completed
50	Friday 4 <sup>th</sup>	Problems	Completed
<b>WEEK-11</b>			
51	Monday 6 <sup>th</sup>	Problems	Completed
52	Wednesday 1 <sup>st</sup>	Problems	Completed
53	Wednesday 6 <sup>th</sup>	Multistage air compressor and inter cooling, Work of multistage air compressor	Completed
54	Friday 2 <sup>nd</sup>	Problems	Completed
55	Friday 4 <sup>th</sup>	Problems	Completed
<b>WEEK-12</b>			
56	Monday 6 <sup>th</sup>	Problems	Completed
57	Wednesday 1 <sup>st</sup>	Rotary compressor	Completed
58	Wednesday 6 <sup>th</sup>	Centrifugal compressor	Completed
59	Friday 2 <sup>nd</sup>	Axial flow compressor	Completed
60	Friday 4 <sup>th</sup>	Roots blower	Completed
<b>WEEK-13</b>			
<b>UNIT V- REFRIGERATION SYSTEMS</b>			
61	Monday 6 <sup>th</sup>	Refrigerants	Completed
62	Wednesday 1 <sup>st</sup>	Vapour compression refrigeration cycle	Completed
63	Wednesday 6 <sup>th</sup>	Vapour compression refrigeration cycle	Completed
64	Friday 2 <sup>nd</sup>	use of P-h chart	Completed
65	Friday 4 <sup>th</sup>	effect of super heat, sub cooling	Completed
<b>WEEK-14</b>			
66	Monday 6 <sup>th</sup>	effect of super heat, sub cooling	Completed
67	Wednesday 1 <sup>st</sup>	Problems	Completed
68	Wednesday 6 <sup>th</sup>	Performance calculations	Completed
69	Friday 2 <sup>nd</sup>	Problems	Completed
70	Friday 4 <sup>th</sup>	Problems	Completed
<b>WEEK-15</b>			
71	Monday 6 <sup>th</sup>	Problems	Completed
72	Wednesday 1 <sup>st</sup>	Problems	Completed
73	Wednesday 6 <sup>th</sup>	Working principle of vapour absorption system	Completed
74	Friday 2 <sup>nd</sup>	Ammonia -Water, Lithium bromide water systems (Description only)	Completed
75	Friday 4 <sup>th</sup>	Comparison between vapour compression and absorption systems	Completed

Prepared By



(N. SHYAAM SUNDHAR)

Approved by



(HOD/ MECH)

**PROFESSOR & HEAD**  
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# ADHIYAMAAN COLLEGE OF ENGINEERING

(Autonomous)

Dr. M.G.R.Nagar – Hosur 635109

Department of Mechanical Engineering



## LESSON PLAN

Faculty Name : GARIMA ARYA

Academic year : 2019-2020

Subject : ADVANCED MANUFACTURING PROCESSES Total no of Hrs : 45

Subject Code : 515MEE06

Semester : V Sem D Sec

SL.NO	CLASS HOURS	TOPICS	REMARKS
<b>WEEK:1</b>			
1	Tuesday 1st	Introduction to unconventional machining process	completed
2	Thursday 1st	classification and brief overview	completed
3	Friday 5th	Abrasive Jet Machining – Process	completed
4	Friday 7th	Equipment set up	completed
<b>WEEK:2</b>			
1	Tuesday 1st	MRR, Limitations, advantages	completed
2	Thursday 1st	Process Parameters, Application	completed
3	Friday 5th	Nozzle Distance, Accuracy	completed
4	Friday 7th	Material application, Limitations	completed
<b>WEEK:3</b>			
1	Tuesday 1st	Water Jet Machining -process	completed
2	Thursday 1st	Equipment set up	completed
3	Friday 5th	MRR, Limitations, advantages	completed
4	Friday 7th	Process Parameters, Application	completed
<b>WEEK:4</b>			
1	Tuesday 1st	Ultrasonic Machining -process	completed
2	Thursday 1st	Equipment set up	completed
3	Friday 5th	MRR, Limitations, advantages	completed
4	Friday 7th	Process Parameters, Application	Completed
<b>WEEK:5</b>			
1	Tuesday 1st	Electric Discharge Machining (EDM)-Process	completed
2	Thursday 1st	Working Principles, Equipment Set-up	completed
3	Friday 5th	MRR, Limitations, Advantages	completed
4	Friday 7th	Process Parameters, Applications	completed
<b>WEEK:6</b>			
1	Tuesday 1st	Electrode/Tool, Power Circuits, Tool wear	completed
2	Thursday 1st	Dielectric-Flushing	completed
3	Friday 5th	Wire Cut EDM, Applications	completed
4	Friday 7th	Latest Developments in EDM	completed
<b>WEEK:7</b>			
1	Tuesday 1st	Chemical Machining-Working Principles	completed
2	Thursday 1st	MRR, Limitations, applications	completed
3	Friday 5th	Process parameters	completed
4	Friday 7th	Etchant-Mask ant-Techniques of applying mask ants.	completed
<b>WEEK:8</b>			
1	Tuesday 1st	Electro-Chemical machining, Working principles	completed
2	Thursday 1st	Equipments, MRR, Electrical circuits	completed
3	Friday 5th	Process parameters	completed
4	Friday 7th	ECG and ECH applications	completed

WEEK:9			
1	Tuesday 1st	Laser Beam machining, Working principle,	completed
2	Thursday 1st	MRR, Applications	completed
3	Friday 5th	Process parameters	completed
4	Friday 7th	Limitations, accuracy	completed
WEEK:10			
1	Tuesday 1st	Plasma Arc machining, Working principle,	completed
2	Thursday 1st	MRR, Applications	completed
3	Friday 5th	Process parameters	completed
4	Friday 7th	Limitations, accuracy	completed
WEEK:11			
1	Tuesday 1st	Electron Beam machining, Working principle,	completed
2	Thursday 1st	MRR, Applications	completed
3	Friday 5th	Process parameters	completed
4	Friday 7th	Limitations, accuracy	completed
WEEK:12			
1	Tuesday 1st	Beam Control Techniques in all the three processes.	completed
2	Thursday 1st	Latest Developments in UCM	completed
3	Friday 5th	Latest Applications	completed
4	Friday 7th	Summary and Discussion	completed

Prepared By

(GARIMA ARYA)

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 ELECTRICAL AND ELECTRONICS ENGINEERING**

**LESSON PLAN**

**Faculty name: Mrs. M.Sukanya**

**Semester: IV**

**Department: BE-EEE**

**Subject : Neural Networks and Fuzzy Systems**

**Subject code: 418EEE07**

Sl.No	Day	Class Period/ Hour	Topic	Remarks
Week : 1			<b>UNIT – I INTRODUCTION TO NEURAL NETWORKS</b>	
1	Monday	3	Introduction to Neural Networks.	completed
2	Monday	4	Biological Neural Networks.	completed
3	Wednesday	1	Comparison between Neural networks and Biological Neural Networks.	completed
4	Wednesday	2	Fundamental concepts, weights, biases and thresholds.	completed
Week : 2				
1	Monday	3	Fundamental concepts, weights, biases and thresholds.	completed
2	Monday	4	Linear capability.	completed
3	Wednesday	1	Common activation functions.	completed
4	Wednesday	2	Learning rules and Learning methods of NN.	completed
Week : 3				
1	Monday	3	Supervised Learning algorithms.	completed
2	Monday	4	Un-Supervised Learning algorithms.	completed
3	Wednesday	1	Single Layer, Multilayer Feed forward network.	completed
4	Wednesday	2	Recurrent network.	completed
Week : 4			<b>UNIT - II NEURAL NETWORKS ARCHITECTURES AND ALGORITHMS</b>	
1	Monday	3	Mcculloh Pitts neuron.	completed
2	Monday	4	Hebbnet.	completed
3	Wednesday	1	Perceptron.	completed
4	Wednesday	2	Perceptron.	completed
Week : 5				
1	Monday	3	Adaline.	completed
2	Monday	4	Hopfield net.	completed
3	Wednesday	1	Maxnet.	completed
4	Wednesday	2	Mexican Hat.	completed
Week : 6				
1	Monday	3	Hamming net.	completed
2	Monday	4	Kohonen self-organizing map.	completed
3	Wednesday	1	Adaptive resonance theory.	completed
4	Wednesday	2	Back propagation neural network.	completed
Week : 7			<b>UNIT – III FUZZY SETS AND RELATIONS</b>	
1	Monday	3	Crisp set.	completed
2	Monday	4	Vagueness.	completed
3	Wednesday	1	Uncertainty and imprecision.	completed
4	Wednesday	2	Fuzzy set.	completed

<b>Week : 8</b>				
1	Monday	3	Fuzzy operators.	
2	Monday	4	Properties.	Completed
3	Wednesday	1	Crisp versus fuzzy sets.	Completed
4	Wednesday	2	Representation of fuzzy sets.	Completed
<b>Week : 9</b>				
1	Monday	3	Membership functions, fuzzy complements, union.	
2	Monday	4	Interaction combination of operators.	Completed
3	Wednesday	1	Crisp and fuzzy relations.	Completed
4	Wednesday	2	Compositions of fuzzy relations.	Completed
<b>Week : 10</b>				
			<b>UNIT - IV CONCEPTS OF FUZZY LOGIC</b>	
1	Monday	3	Fuzzy Systems.	
2	Monday	4	Fuzzification.	Completed
3	Wednesday	1	Membership value assignment.	Completed
4	Wednesday	2	Membership value assignment.	Completed
<b>Week : 11</b>				
1	Monday	3	Development of rule base and decision making system.	
2	Monday	4	Development of rule base and decision making system.	Completed
3	Wednesday	1	Defuzzification to crisp sets.	Completed
4	Wednesday	2	Defuzzification to crisp sets.	Completed
<b>Week : 12</b>				
1	Monday	3	Defuzzification methods.	
2	Monday	4	Fuzzy Structure of Fuzzy logic controllers.	Completed
3	Wednesday	1	Comparison of Fuzzy and Neural Systems.	Completed
4	Wednesday	2	Comparison of Fuzzy and Neural Systems.	Completed
<b>Week : 13</b>				
			<b>UNIT - V APPLICATIONS OF NEURAL NETWORKS AND FUZZY SYSTEMS</b>	
1	Monday	3	Cognitron and Neocognitron Architecture.	
2	Monday	4	Training Algorithm and application- Fuzzy associative memories.	Completed
3	Wednesday	1	Training Algorithm and application- Fuzzy associative memories.	Completed
4	Wednesday	2	Fuzzy and neural function estimators.	Completed
<b>Week : 14</b>				
1	Monday	3	Fuzzy associative memories system Architecture.	
2	Monday	4	Adaptive neuro.	Completed
3	Wednesday	1	Adaptive Fuzzy.	Completed
4	Wednesday	2	Adaptive Neuro-Fuzzy interface systems.	Completed
<b>Week : 15</b>				
1	Monday	3	Neuro Controller.	
2	Monday	4	Fuzzy logic Controller.	Completed
3	Wednesday	1	Revision.	Completed
4	Wednesday	2	Revision.	Completed

Prepared by:

Mrs.M.Sukanya, AP /EEE

Approved by: HOD

Signature of the staff

M. S. S.





**ADHIYAMAAN COLLEGE OF ENGINEERING**

(AUTONOMOUS)

Dr.M.G.R.Nagar – Hosur 635130

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**LESSON PLAN**

Faculty Name: **B TAMILSELVI**

Subject: **CONTROL SYSTEMS**

Subject Code: **418EET02**

Semester: **IV/EEE**

Sl.No	Class Period / Hour	Topic	Remarks
<b>WEEK : 1</b>		<b>UNIT – I – CONTROL SYSTEM MODELING</b>	
Tuesday	6	Basic Elements of Control System	Completed
wednesday	1,3	Open loop and Closed loop systems	Completed
Fri	4	Differential equation	Completed
sat	5	Transfer function, Mechanical Translational System	Completed
<b>WEEK : 2</b>			
Tuesday	6	Problem	Completed
wednesday	1,3	Mechanical Rotational System	Completed
Fri	4	Problem	Completed
sat	5	Modeling of Electric systems, Problem	Completed
<b>WEEK : 3</b>			
Tuesday	6	Block diagram reduction Techniques	Completed
wednesday	1,3	Problem	Completed
Fri	4	Signal flow graph	Completed
sat	5	Problem	Completed
<b>WEEK : 4</b>		<b>UNIT – II – TIME RESPONSE ANALYSIS</b>	
Tuesday	6	Time response analysis-Introduction	Completed
wednesday	1,3	First Order Systems	Completed
Fri	4	Step Response analysis of undamped second order systems	Completed
sat	5	Step Response analysis of under, critically damped second order systems	Completed
<b>WEEK : 5</b>			
Tuesday	6	Step Response analysis of over damped second order systems	Completed
wednesday	1,3	Problems	Completed
Fri	4	Time domain specifications	Completed
sat	5	Impulse Response analysis of undamped & under damped systems	Completed
<b>WEEK : 6</b>			
Tuesday	6	Impulse Response analysis of critically damped & over damped systems	Completed
wednesday	1,3	Steady state errors and error constants	Completed
Fri	4	Problems	Completed
sat	5	P, PI, PD and PID Compensation, Analysis using MATLAB	Completed
<b>WEEK: 7</b>		<b>UNIT – III – FREQUENCY RESPONSE ANALYSIS</b>	
Tuesday	6	Frequency Response-Introduction	Completed
wednesday	1,3	Frequency domain specifications	Completed
Fri	4	Bode Plot-factors and procedure	Completed
sat	5	Problem solving on Bode Plot	Completed

WEEK : 8			
Tuesday	6	Polar Plot- procedure	Completed
wednesday	1,3	Problem solving on Polar Plot	Completed
Fri	4	Problem solving on Polar Plot	Completed
sat	5	Nyquist Plot, Constant M and N Circles	Completed
WEEK : 9			
Tuesday	6	Nichol's Chart - Use of Nichol's Chart in Control System Analysis	Completed
wednesday	1,3	Lead Compensators- Problem	Completed
Fri	4	Lag Compensators- Problem	Completed
sat	5	Lead Lag Compensators- Problem, Analysis using MATLAB	Completed
WEEK : 10		<b>UNIT – IV – STABILITY ANALYSIS</b>	
Tuesday	6	Stability- Introduction	Completed
wednesday	1,3	Routh-Hurwitz Criterion- Introduction	Completed
Fri	4	Problems solving on Routh-Hurwitz Criterion	Completed
sat	5	Problems solving on Routh-Hurwitz Criterion, Construction of Root Locus	Completed
WEEK : 11			
Tuesday	6	Problems solving on Root Locus Technique	Completed
wednesday	1,3	Problems solving on Root Locus Technique	Completed
Fri	4	Dominant Poles	Completed
sat	5	Application of Root Locus Diagram, Nyquist Stability Criterion	Completed
WEEK : 12			
Tuesday	6	Nyquist Stability Criterion-Problem	Completed
wednesday	1,3	Problem	Completed
Fri	4	Relative Stability	Completed
sat	5	Analysis using MATLAB	Completed
WEEK : 13		<b>UNIT – V – STATE VARIABLE ANALYSIS</b>	
Tuesday	6	State Variable- Introduction	Completed
wednesday	1,3	State space representation of Continuous Time systems	Completed
Fri	4	Problem solving on State space representation	Completed
sat	5	State equations & Solutions of the state equations	Completed
WEEK : 14			
Tuesday	6	Transfer function from State Variable Representation	Completed
wednesday	1,3	Problem solving on Transfer function from State Variable Representation	Completed
Fri	4	Problem solving on Transfer function from State Variable Representation	Completed
sat	5	State transition matrix and problem	Completed
WEEK : 15			
Tuesday	6	Concepts of Controllability-Problem	Completed
wednesday	1,3	Concepts of Observability	Completed
Fri	4	Concepts of Observability- Problem	Completed
sat	5	Analysis using MATLAB	Completed

Prepared by: <b>B.TAMILSELVI, AP /EEE</b>	Approved by: HOD/EEE	Revision No.				Date:
						25-11-2019

  
 Signature of the Staff



Academic Year: 2019 – 2020

Faculty Name : Sakthi Vinodha.P.P  
Subject Code : 418BTT03

Subject : Stoichiometric and Process Calculations  
Semester : IV

Sl. No	Class Period / Hour	Topic	Remarks
<b>WEEK :1</b>			
1	Mon-3 <sup>rd</sup>	<b>UNIT I Basic Principles of Material balances and Energy Balances – Introduction</b>	Completed Daku
2	Tue-1 <sup>st</sup>	Importance of material balance and energy balance in process industry	
3	Tue-3 <sup>rd</sup>	Dimensions, Units, Conversion factors and their uses	
4	Fri-1 <sup>st</sup>	Dimensions, Units, Conversion factors and their uses	
<b>WEEK :2</b>			
1	Wed-2 <sup>nd</sup>	Applied mathematics for experimental curve fitting	Completed Daku
2	Thur-1 <sup>st</sup>	Applied mathematics for experimental curve fitting	
3	Thur-7 <sup>th</sup>	Numerical differentiation	
4	Sat- 4 <sup>th</sup>	Revision	
<b>WEEK :3</b>			
1	Wed-2 <sup>nd</sup>	Numerical differentiation	Completed Daku
2	Thur-1 <sup>st</sup>	Numerical Integration	
3	Thur-7 <sup>th</sup>	Numerical Integration	
4	Sat- 4 <sup>th</sup>	Revision	
<b>WEEK :4</b>			
1	Wed-2 <sup>nd</sup>	<b>UNIT II Material Balances – Introduction</b>	Completed Daku
2	Thur-1 <sup>st</sup>	Basic concepts involved in material balance calculations	
3	Thur-7 <sup>th</sup>	Overall balances	
4	Sat- 4 <sup>th</sup>	Component balances	
<b>WEEK :5</b>			
1	Wed-2 <sup>nd</sup>	Material balances without chemical reaction	Completed Daku
2	Thur-1 <sup>st</sup>	Material balances with chemical reactions	
3	Thur-7 <sup>th</sup>	Stoichiometric equation, stoichiometric coefficient	
4	Sat- 4 <sup>th</sup>	Stoichiometric ratio, stoichiometric proportion	
<b>WEEK :6</b>			
1	Wed-2 <sup>nd</sup>	Degrees of freedom	Completed Daku
2	Thur-1 <sup>st</sup>	Recycle ratio calculations, purge ratio calculations	
3	Thur-7 <sup>th</sup>	Humidity calculations	
4	Sat- 4 <sup>th</sup>	Revision	

Sl. No	Class Period / Hour	Topic	Remarks
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**WEEK :7**

1	Wed-2 <sup>nd</sup>	<b>Unit III Energy Balances - Introduction</b>	
2	Thur-1 <sup>st</sup>	Overall and component balances	
3	Thur-7 <sup>th</sup>	Overall and component balances	
4	Sat- 4 <sup>th</sup>	Calculation of heat capacity, specific heat capacity	

**WEEK :8**

1	Wed-2 <sup>nd</sup>	Partial pressure-calculations	
2	Thur-1 <sup>st</sup>	Partial pressure-calculations	
3	Thur-7 <sup>th</sup>	Latent heats – calculations	
4	Sat- 4 <sup>th</sup>	Energy balances - calculations	

**WEEK :9**

1	Wed-2 <sup>nd</sup>	Heat of mixing	
2	Thur-1 <sup>st</sup>	Sensible heat calculations	
3	Thur-7 <sup>th</sup>	Vapour pressure calculations	
4	Sat- 4 <sup>th</sup>	Revision	

**WEEK :10**

1	Wed-2 <sup>nd</sup>	<b>Unit IV Fluid Mechanics – Introduction</b>	
2	Thur-1 <sup>st</sup>	Fluid – properties	
3	Thur-7 <sup>th</sup>	Fluid flow phenomena	
4	Sat- 4 <sup>th</sup>	Compressible fluids	

**WEEK :11**

1	Wed-2 <sup>nd</sup>	Incompressible fluids	
2	Thur-1 <sup>st</sup>	Newtonian and Non Newtonian Fluids	
3	Thur-7 <sup>th</sup>	Fluid statics for compressible fluids- applications in chemical engineering	
4	Sat- 4 <sup>th</sup>	Fluid statics for incompressible fluids- applications in chemical engineering	

**WEEK :12**

1	Wed-2 <sup>nd</sup>	Fluid pressure drop calculations	
2	Thur-1 <sup>st</sup>	Fluid pressure drop calculations	
3	Thur-7 <sup>th</sup>	Pressure measuring devices	
4	Sat- 4 <sup>th</sup>	Revision	

**WEEK :13**

1	Wed-2 <sup>nd</sup>	<b>Unit V Flow Through Packings and Fluidization – Introduction</b>	
2	Thur-1 <sup>st</sup>	Flow Measurement-Orifice Meter	
3	Thur-7 <sup>th</sup>	Venturimeter	
4	Sat- 4 <sup>th</sup>	Pitot tube	





Academic Year: 2019 – 2020

Faculty Name : Sakthi Vinodha.P.P  
Subject Code : 418BTT06

Subject : Environmental Biotechnology  
Semester : IV

Sl. No	Class Period / Hour	Topic	Remarks
<b>WEEK :1</b>			
1	Mon-3 <sup>rd</sup>	<b>UNIT I Biogeochemical Role of Soil Microorganisms – Introduction</b>	Completed Dalu
2	Tue-1 <sup>st</sup>	Microbial flora of soil	
3	Tue-3 <sup>rd</sup>	Interactions among soil microorganisms	
4	Fri-1 <sup>st</sup>	Interactions among soil microorganisms	
<b>WEEK :2</b>			
1	Wed-2 <sup>nd</sup>	Nitrogen cycle	Completed Dalu
2	Thur-1 <sup>st</sup>	Carbon cycle	
3	Thur-7 <sup>th</sup>	Sulfur cycle	
4	Sat- 4 <sup>th</sup>	Phosphorous cycle	
<b>WEEK :3</b>			
1	Wed-2 <sup>nd</sup>	Revision	Completed Dalu
2	Thur-1 <sup>st</sup>	<b>UNIT II Biodegradation – Introduction</b>	
3	Thur-7 <sup>th</sup>	Aerobic degradation of recalcitrant organic compounds by microorganisms	
4	Sat- 4 <sup>th</sup>	Growth associated degradation of aliphatic	
<b>WEEK :4</b>			
1	Wed-2 <sup>nd</sup>	Diversity of aromatic compounds	Completed Dalu
2	Thur-1 <sup>st</sup>	Co-metabolic degradation of organopollutants	
3	Thur-7 <sup>th</sup>	Co-metabolic degradation of organopollutants	
4	Sat- 4 <sup>th</sup>	Degradative capacities of fungi	
<b>WEEK :5</b>			
1	Wed-2 <sup>nd</sup>	Anaerobic degradation of organic compounds	Completed Dalu
2	Thur-1 <sup>st</sup>	Degradation of hydrocarbons	
3	Thur-7 <sup>th</sup>	Degradation of alkyl compounds	
4	Sat- 4 <sup>th</sup>	Degradation of ketones	
<b>WEEK :6</b>			
1	Wed-2 <sup>nd</sup>	Aromatic compounds – Halogenated organics	Completed Dalu
2	Thur-1 <sup>st</sup>	Sulfonates	
3	Thur-7 <sup>th</sup>	Nitroorganics	
4	Sat- 4 <sup>th</sup>	Revision	

Sl. No	Class Period / Hour	Topic	Remarks
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**WEEK :7**

1	Wed-2 <sup>nd</sup>	<b>Unit III Bioremediation Technologies - Introduction</b>	
2	Thur-1 <sup>st</sup>	Remediation technologies	
3	Thur-7 <sup>th</sup>	Remediation technologies - Bioventing	
4	Sat- 4 <sup>th</sup>	Remediation technologies – Biosparging	

**WEEK :8**

1	Wed-2 <sup>nd</sup>	Remediation technologies – Bioslurping	
2	Thur-1 <sup>st</sup>	Phytoremediation	
3	Thur-7 <sup>th</sup>	Biodesulphurization of coal and oil	
4	Sat- 4 <sup>th</sup>	Microbial transformation of heavy metals	

**WEEK :9**

1	Wed-2 <sup>nd</sup>	Bioleaching	
2	Thur-1 <sup>st</sup>	Bioaccumulation	
3	Thur-7 <sup>th</sup>	Biosorption and bioprecipitation of heavy metals	
4	Sat- 4 <sup>th</sup>	Revision	

**WEEK :10**

1	Wed-2 <sup>nd</sup>	<b>Unit IV Eco-Friendly Bioproducts From Renewable Sources – Introduction</b>	
2	Thur-1 <sup>st</sup>	Fundamentals of composting process	
3	Thur-7 <sup>th</sup>	Composting technologies	
4	Sat- 4 <sup>th</sup>	Composting systems	

**WEEK :11**

1	Wed-2 <sup>nd</sup>	Compost quality	
2	Thur-1 <sup>st</sup>	Biofertilizers	
3	Thur-7 <sup>th</sup>	Biopesticides	
4	Sat- 4 <sup>th</sup>	Scientific aspects and prospects of biofuel production	

**WEEK :12**

1	Wed-2 <sup>nd</sup>	Bioethanol	
2	Thur-1 <sup>st</sup>	Biohydrogen and biodiesel	
3	Thur-7 <sup>th</sup>	Biogas plant digester	
4	Sat- 4 <sup>th</sup>	Revision	

**WEEK :13**

1	Wed-2 <sup>nd</sup>	<b>Unit V Biological Treatment Of Wastewater – Introduction</b>	
2	Thur-1 <sup>st</sup>	Biological processes for wastewater treatment	
3	Thur-7 <sup>th</sup>	Physical characteristics of wastewater	
4	Sat- 4 <sup>th</sup>	Chemical characteristics of wastewater	

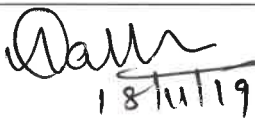

Sl. No	Class Period / Hour	Topic	Remarks
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**WEEK :14**

1	Wed-2 <sup>nd</sup>	Activated sludge process	
2	Thur-1 <sup>st</sup>	Trickling filter	
3	Thur-7 <sup>th</sup>	Rotating biological contactors	
4	Sat- 4 <sup>th</sup>	Fluidized bed reactor	

**WEEK :15**

1	Wed-2 <sup>nd</sup>	Upflow anaerobic sludge blanket reactor (UASB)	
2	Thur-1 <sup>st</sup>	High-rate anaerobic waste water treatment	
3	Thur-7 <sup>th</sup>	Comparison between aerobic and anaerobic processes	
4	Sat- 4 <sup>th</sup>	Revision	

 Sakthi Vinodha.P.P Prepared by: (Staff)	 Dr. N. G. Ramesh Babu Approved by: (HOD)	Revision No:	Date : 18.11.19



**DEPARTMENT OF CHEMICAL ENGINEERING**  
**ADHIYAMAAN COLLEGE OF ENGINEERING, HOSUR - 635109**

**Lesson Plan (2019 – 2020)**

Faculty Name : Mrs. J. LAKSHMIPRIYA

Subject Code : 515CHT03


Subject Name : Heat Transfer

Year / Semester : III – B / V

Sl. No.	Topic to be covered	Hours Planned	Method of Delivery	Date & Period of topic covered	Initials / Remarks
<b>UNIT-I CONDUCTION</b>					
1.	Modes of heat transfer- basic laws of heat transfer	1	Board	17/6/19-3	Jhijp
2.	Fourier's law of heat conduction & One dimensional steady state heat conduction for Flat plate	1	Board	20/6/19-2 21/6/19-4	Jhijp
3.	One dimensional steady state heat conduction for Hollow Cylinder	1	Board	21/6/19-7	Jhijp
4.	One dimensional steady state heat conduction for Hollow Sphere	1	Board	22/6/19-4	Jhijp
5.	Composite Structure for Flat plate & cylinder	1	Board	24/6/19 - 28/3	Jhijp
6.	Composite Structure for sphere	1	Board	27/6/19-2	Jhijp
7.	Heat transfer from extended surfaces and applications	1	Board	28/6/19-4 29/6/19-4	Jhijp
8.	Critical insulation thickness\radius	1	Board	1/7/19-3	Jhijp
9.	Introduction to transient heat conduction	1	Board	4/7/19-2	Jhijp
<b>UNIT-II CONVECTION</b>					
10.	Natural and forced convection	1	Board	5/7/19-4	Jhijp
11.	Application of dimensional analysis for convection	1	Board	5/7/19-7	Jhijp
12.	Dimensionless numbers	1	Board	6/7/19-4	Jhijp
13.	Natural convection through vertical Plate and tubes	1	Board	8/7/19-3 11/7/19-2	Jhijp
14.	Natural convection through horizontal Plate and tubes	1	Board	12/7/19 - 4 & 7	Jhijp
15.	Forced convection through vertical Plate and tubes	1	Board	13/7/19-4	Jhijp

16.	Forced convection through horizontal Plate and tubes	1	Board	15/7/19- <sup>3</sup> <del>4</del> 18/7/19-2	Shuip
17.	Heat transfer using fins	1	Board	19/7/19-4	Shuip
18.	Fin effectiveness	1	Board	19/7/19-7	Shuip
<b>UNIT III RADIATION</b>					
19.	Nature of thermal radiations	1	Board	20/7/19-4	Shuip
20.	Concept of grey body	1	Board	22/7/19-3	Shuip
21.	Concept of Black body	1	Board	25/7/19-2	Shuip
22.	Laws of radiations- Stefan's Boltzmann law	1	Board	26/7/19-4	Shuip
23.	Laws of radiations- Kirchhoff's law	1	Board	26/7/19-7	Shuip 4
24.	Laws of radiations- Planck's law	1	Board	27/7/19-4	Shuip
25.	Radiation exchange between surfaces - Plates	1	Board	29/7/19-3 1/8/19-2	Shuip
26.	Radiation exchange between surfaces - Cylinder	1	Board	2/8/19- 4 @ 7	Shuip
27.	Radiation shield and its applications	1	Board	3/8/19-4 5/8/19-3	Shuip
<b>UNIT IV HEAT TRANSFER WITH PHASE CHANGE</b>					
28.	Introduction to boiling	1	Board	8/8/19-2	Shuip
29.	Introduction to condensation	1	Board	9/8/19-4	Shuip
30.	Vertical Condenser	1	Board	9/8/19-7	Shuip
31.	Horizontal Condenser	1	Board	10/8/19-4	Shuip
32.	Evaporators- Types and application.	1	Board	16/8/19- 4 @ 7	Shuip
33.	Methods of feed In multiple effect evaporators	1	Board	17/8/19-4	Shuip
34.	Calculation of steam consumption	1	Board	19/8/19- 2 @ 4	Shuip
35.	Calculation of steam Economy	1	Board	22/8/19-2	Shuip
36.	Heat transfer area in single effect evaporator	1	Board	22/8/19-6 24/8/19-2	Shuip

UNIT V HEAT EXCHANGERS					
37.	Types of Heat exchangers	1	Board	24/8/19-4 6/9/19-4	Jhujja
38.	LMTD & Use of correction temperature factors	1	Board	6/9/19-7 7/9/19-4	Jhujja
39.	Fouling Heat transfer area for shell and tube heat exchanger	1	Board	9/9/19-3 12/9/19-2	Jhujja
40.	Fouling Heat transfer area for double pipe heat exchanger	1	Board	12/9/19-3 13/9/19-4	Jhujja
41.	Heat exchanger Effectiveness	1	Board	13/9/19-7	Jhujja
42.	Heat exchanger NTU	1	Board	14/9/19-4	Jhujja
43.	Wilson plot applications	1	Board	16/9/19-3	Jhujja
44.	Compact heat exchanger	1	Board	19/9/19-2	Jhujja
45.	Compact heat exchanger - Applications	1	Board	20/9/19-4	Jhujja

  
Signature of the faculty

[LAISHMIPRIYA. J]

  
Head of the Department

**ADHIYAMAAN COLLEGE OF ENGINEERING (Autonomous)**  
**Dr. M.G.R Nagar. Hosur-635109**  
 Department of Biomedical Engineering  
 Odd Semester (2019-20)

**Lesson Plan**



Faculty Name: C.SATHISH KUMAR  
 Class: II BME

Subject: Human Anatomy and Physiology  
 Semester: III

Sl. No	Class / Period/ Hour	Topic	Remarks
<b>WEEK:1</b>			
1.	Mon-7	Introduction to Human Anatomy and Physiology	Completed
2.	Tue-1	Introduction to Cellular System	Completed
3.	Fri-3	Cell: Structure and organelles	Completed
4.	Fri-6	Functions of each component in the cell	Completed
5.	Sat-4	Functions of each component in the cell	Completed
<b>WEEK:2</b>			
1.	Mon-7	Cell Extensions	Completed
2.	Tue-1	Cell Extensions	Completed
3.	Fri-3	Cell membrane	Completed
4.	Fri-6	transport across membrane	Completed
5.	Sat-4	transport across membrane	Completed
<b>WEEK:3</b>			
1.	Mon-7	Action potential	Completed
2.	Tue-1	Revision Unit-1	Completed
3.	Fri-3	Introduction to Hematological System.	Completed
4.	Fri-6	Blood composition	Completed
5.	Sat-4	Functions of blood	Completed
<b>WEEK:4</b>			
1.	Mon-7	Functions of blood	Completed
2.	Tue-1	Physical Characteristics and Volume	Completed
3.	Fri-3	Plasma	Completed
4.	Fri-6	Formed Elements -RBC	Completed
5.	Sat-4	WBC types and their functions	Completed
<b>WEEK:5</b>			
1.	Mon-3	Platelets	Completed
2.	Tue-6	Hematopoiesis	Completed
3.	Wed-1	Blood groups	Completed
4.	Thu-7	Revision Unit-2	Completed
5.	Fri-2	Introduction to renal and respiratory system	Completed
<b>WEEK:6</b>			
1.	Mon-3	Structure of Kidney	Completed
2.	Tue-6	Structure of nephron	Completed
3.	Wed-1	Mechanism of Urine formation	Completed
4.	Thu-7	Functional Anatomy of the Respiratory System	Completed
5.	Fri-2	Functional Anatomy of the Respiratory System	Completed

<b>WEEK:7</b>			
1.	Mon-3	Respiratory Physiology -Mechanisms of Breathing	Completed
2.	Tue-6	Oxygen and carbon dioxide transport	Completed
3.	Wed-1	Anatomy of the Heart	Completed
4.	Thu-7	Chambers and Associated Great Vessels	Completed
5.	Fri-2	Revision Unit-3	Completed
<b>WEEK:8</b>			
1.	Mon-3	Organization of the Nervous System	Completed
2.	Tue-6	Nervous Tissue-Structure and Function	Completed
3.	Wed-1	Supporting Cells, Neurons	Completed
4.	Thu-7	Central Nervous System-Functional Anatomy of the Brain	Completed
5.	Fri-2	Central Nervous System-Functional Anatomy of the Brain	Completed
<b>WEEK:9</b>			
1.	Mon-3	Peripheral Nervous System- Structure of a Nerve	Completed
2.	Tue-6	Peripheral Nervous System- Structure of a Nerve	Completed
3.	Wed-1	Autonomic Nervous System	Completed
4.	Thu-7	Autonomic Nervous System	Completed
5.	Fri-2	Thyroid gland	Completed
<b>WEEK:10</b>			
1.	Mon-3	Adrenal gland	Completed
2.	Tue-6	Anatomy of the Eye	Completed
3.	Wed-1	Anatomy of the Ear	Completed
4.	Thu-7	Revision Unit-4	Completed
5.	Fri-2	Structure of Skin	Completed
<b>WEEK:11</b>			
1.	Mon-3	Structure of Bone	Completed
2.	Tue-6	Bone Formation	Completed
3.	Wed-1	Growth of bone and Remodeling	Completed
4.	Thu-7	Joints	Completed
5.	Fri-2	Joints	Completed
<b>WEEK:12</b>			
1.	Mon-3	Anatomy of the Digestive System	Completed
2.	Tue-6	Anatomy of the Digestive System	Completed
3.	Wed-1	Functions of the Digestive System	Completed
4.	Thu-7	Functions of the Digestive System	Completed
5.	Fri-2	Anatomy of male reproductive system	Completed
<b>WEEK:13</b>			
1.	Mon-3	Anatomy of male reproductive system	Completed
2.	Tue-6	Anatomy of female reproductive system	Completed
3.	Wed-1	Anatomy of female reproductive system	Completed
4.	Thu-7	Revision Unit-5	Completed
5.	Fri-2	Revision Unit-4	Completed
<b>WEEK:14</b>			
1.	Mon-3	Revision Unit-3	Completed
2.	Tue-6	Revision Unit-2	Completed

3.	Wed-1		
4.	Thu-7	Revision Unit-1	Completed
5.	Fri-2	Innovative Work	Completed
<b>WEEK:15</b>			
1.	Mon-3	Innovative Work	Completed
2.	Tue-6	Innovative Work	Completed
3.	Wed-1	Innovative Work	Completed
4.	Thu-7	Innovative Work	Completed
5.	Fri-2	Innovative Work	Completed

Prepared By: (Staff)  C.SATHISH KUMAR 	Approved By: (HOD) 	Date:		
		18	06	2019