	Lakireddy Balireddy College of Engineering College L.B.Reddy Nagar, Mylavaram , Krishna District, A.P **DEPARTMENT OF AEROSPACE ENGINEERING**			
	LESSON PLAN			
	Subject **:**	**APPLIED MATHEMATICS-III S134**		
	Academic Year :	**2016-17**	Semester :	**III**	**Date: 20-6-16**
	Year :	**II(2015-19)**	Section :	**--**	**To 05-11-16**

SYLLABUS

UNIT – I :Solution of Algebraic and Transcendental Equations and Numerical Integration

Solutions of Algebraic and Transcendental Equations – Regula False Position method and Newtons Raphson Method in one variable.

Numerical Integration – Trapezoidal rule – Simpson's 1/3 Rule –Simpson's 3/8 Rule.

UNIT – II : Interpolation and Finite Differences

Interpolation: Introduction – Finite differences- Forward Differences- Backward Differences- Backward differences –Central differences – Symbolic relations and separation of symbols-Differences of a polynomial- Newton's formulae for interpolation – Lagrange's Interpolation formula.

UNIT – III : Numerical solution of Ordinary Differential Equations

Numerical solution of Ordinary Differential equations, Solution by Taylor's series - Picard's Method of successive Approximations - Euler's Method - Runge- Kutta Methods.

UNIT – IV : Vector Differentiation

Vector Differentiation: Gradient- Directional Derivatives -Divergence – Solenoidal fields- Curl –Irrotation fields-potential surfaces - Laplacian and second order operators and related properties of sums and products

UNIT – V: Vector Integration

Vector Integration - Line integral – work done –area - surface and volume integrals Vector integral theorems: Greens, Stokes and Gauss Divergence Theorems (Without proof) and related problems.

TEXT BOOKS

1. S. S. Sastry, "Introductory Methods of Numerical Analysis". Prentice Hall of India,5th Edition,2005.
2. Dr. B. V. Ramana, "Higher Engineering Mathematics", The McGraw Hill Companies, 1st Edition,2010.

REFERNCES

1. Dr. B.S. Grewal , "Higher Engineering Mathematics", Khanna Publishers, 42ndEdition,2012.
2. Steven .C. Chopra and Ra. P. Canale, "Numerical Methods for Engineers with programming and software application", The McGraw Hill Companies, 4th Edition,2002.
3. M. K. Jain, S. R. K. Iyengar, R.K. Jain, "Numerical Methods for Scientific and Engineering Computation", New Age International Publishers., 5th Edition,2007.

Course Educational Objectives:

In this course student will learn about

- The methodology of interpolation and extrapolation to common problems using different formulae
- The application of Numerical Techniques in Integration; solving the algebraic and transcendental equations.
- Solving Differential equations by using Numerical Methods..
- The concepts of Vector Calculus Vector Differentiation and Conservative Fields.
- The concepts of line integrals, surface and volume integrals , vector integral theorems and their applications

Course outcomes:

At the end of this course student will be able to

- Apply the techniques of numerical interpolation and approximation of functions with ease.
- Perform integration of functions when the actual function is not given and solve algebraic and transcendental equations.

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DEPARTMENT OF AEROSPACE ENGINEERING

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- Solve Ordinary Differential Equations with given initial conditions.
- Apply Integration to find length, area and volume of any given surface.
- Understand the analogy of the Fundamental Theorem of Calculus to Vector Calculus.

S.No	Teaching Learning Process (TLP)	Delivery Methods (DM)	Assessment Methods (AM)
1	Solving Real world problem	Chalk & Talk	Assignments
2	Explaining application before theory	ICT tools	Quiz
3	Solving problems	Group discussions	Tutorials
4	Designing of experiments	Industrial visit	Surprise Tests
5	Problems on environmental, economics, health & safety	Field work	Mid Exams
6	Problems on professional & ethics	Case studies	Model Exam
7	Seminar	Mini Projects	QAs
8	Problems using software000	Numerical treatment	
9	Self study	Design / Exercises	

Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
UNIT –I:						
1.	Introduction class	20-06-16		2	1	1,3, 5,7
2.	Course Objectives and applications	21-06-16		2	1	
3.	Introduction to solution of algebraic and transcendental equations	22-06-16		2	1	
4.	Bisection Method	23-06-16		3	1	
5.	Problems on bisection method	25-06-16		3	1,9	
6.	Method of False Position	27-06-16		3	1,9	
7.	Problems on False Position method.	29-06-16		3	1,9	
8.	Newton-Raphson Method	30-06-16		3	1,9	
9.	Problems on Newton-Raphson Method	02-07-16		2	1,9	
10.	TUTORIAL -1	04-07-16		3	9	
11.	Numerical Integration	05-07-16		3	1,9	
12.	Trapezoidal Rule-Problems	07-07-16		2,3	1,9	
13.	Trapezoidal Rule-Problems	11-07-16		,3	1,9	
14.	Simpson's 1/3 Rule -problems	12-07-16		2,3	1,9	
15.	Simpson's 1/3 Rule -problems	13-07-16		3	1,9	
16.	Simpson's 3/8 Rule -problems	14-07-16		2,3	1,9	
17.	Simpson's 3/8 Rule -problems	16-07-16		3	1,9	
18.	TUTORIAL-2	18-07-16		3	9	

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Year :	**II(2015-19)**	Section :	**--**	**To 05-11-16**

19.	Assignment & Quiz	19-07-16		9	9	
	UNIT II					
20.	Introduction to Interpolation	20-07-16		3	1	
21.	Finite Differences	21-07-16		3	1	
22.	Forward, & Backward Differences	23-07-16		3	1	
23.	Symbolic Relations and separation of symbols	25-07-16		3	1	
24.	TUTORIAL-3	26-07-16		3	9	
25.	Newton's forward formulae for interpolation	27-07-16		3	1,9	1,3, 5,7
26.	Newton's backward formulae for interpolation	28-07-16		3	1,9	
27.	Lagrange's interpolation formula	30-07-16		3	1,9	
28.	Lagrange's interpolation formula-problems	01-08-16		3	1,9	
29.	Gauss Interpolation formula	02-08-16		2,3	1,9	
30.	Gauss Interpolation formula-problems	03-08-16		3	1,9	
31.	TUTORIAL-4	04-08-16		2,3	9	
32.	Assignment & Quiz	06-08-16		9	9	
33.	MID- 1	08-08-16				
34.	MID- 1	09-08-16				
35.	MID -1	10-08-16				
36.	MID- 1	11-08-16				
	UNIT-III					
37.	Numerical Solution of ODE	16-08-16		2	1,9	
38.	Solution of ODE by Taylor's series	17-08-16		2,3	1	
39.	Solution of ODE by Taylor's series	18-08-16		3	9	
40.	Problems on Taylor's series	20-08-16		2,3	1	
41.	Picard's Method of successive Approximation	22-08-16		2,3	1	
42.	Picard's Method of successive Approximation	23-08-16		3	1,9	
43.	Euler's Method	24-08-16		3	1,9	
44.	Modified Euler's Method	27-08-16		3	1,9	
45.	Problems on Euler's methods	29-08-16		2,3	1,9	1,3, 5,7
46.	TUTORIAL-5	30-08-16		3	1,9	
47.	Runge-Kutta Method	31-08-16		2	1	
48.	Problems on Runge-Kutta Method	01-09-16		2	1,9	
49.	TUTORIAL-6	03-09-16		3	9	
50.	Assignment & Quiz	06-09-16		9	9	
	UNIT-IV					
51.	Vector Differentiation	07-09-16		2	1	
52.	Gradient of a scalar point function	08-09-16		3	1,9	
53.	Gradient of a scalar point function	13-09-16		3	1,9	
54.	Directional Derivatives	14-09-16		2,3	1	
55.	Directional Derivatives	15-09-16		3	1,9	
56.	Problems on Directional Derivatives	17-09-16		2,3	9	
57.	TUTORIAL-7	19-09-16		3	9	
58.	Divergence	20-09-16		2,3	1,9	
59.	Problems on Divergence	21-09-16		2,3	1,9	

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DEPARTMENT OF AEROSPACE ENGINEERING

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Subject :	**APPLIED MATHEMATICS-III S134**			
Academic Year :	**2016-17**	Semester :	**III**	**Date: 20-6-16**
Year :	**II(2015-19)**	Section :	**--**	**To 05-11-16**

60.	Curl of a vector	22-09-16		3	9	
61.	Curl of a vector, problems	24-09-16		2,3	1,9	
62.	Laplacian and second order operators	26-09-16		2,3	1,9	1,3, 5,7
63.	Laplacian and second order operators	27-09-16		2,3	1,9	
64.	Properties	28-09-16		2	1,9	
65.	Vector Identities	29-09-16		2,3	9	
66.	Vector Identities	01-10-16		2,3	1,9	
67.	TUTORIAL-8	03-10-16		3	9	
68.	Assignment & Quiz	04-10-16		2	9	
	UNIT- V					
69.	Vector Integration	05-10-16		2	1	
70.	Line Integral	06-10-16		2	1	
71.	Line Integral	17-10-16		3	9	
72.	Work done Area	18-10-16		2,3	1,9	
73.	Surface Integral	19-10-16		2,3	1	
74.	Volume Integral	20-10-16		3	1,9	
75.	TUTORIAL-9	22-10-16		3	9	1,3, 5,7
76.	Applications on Gauss divergence Theorem	24-10-16		3	1,9	
77.	Applications on Gauss divergence Theorem	25-10-16		2,3	9	
78.	Applications on Green's Theorem	26-10-16		2,3	1,9	
79.	Applications on Green's Theorem	27-10-16		3	1,9	
80.	Applications on Stokes' Theorem	29-10-16		3	1,9	
81.	TUTORIAL-10	31-10-16		3	9	
82.	Assignment & Quiz	01-11-16		9	9	
83.	Revision	02-11-16		2,3	1,9	
84.	MID- 2	03-11-16				
85.	MID -2	05-11-16				
Total number of classes required to complete the syllabus :75						
Total number of classes available as per Schedule :79						

Assessment Summary:

Assessment Task	Weight age (Marks)	CO1	CO2	CO3	CO4	CO5	CO6
Assignments	05						
Quizzes							
Tutorials							

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Surprise Tests	--						
Mid Exams	20						
Model Exams	--						
End Exam	75						
Attendance							
Total	100						

CO-PO Mapping:

Pos / COs	a	b	c	d	e	f	g	h	i	j	k
CO1											
CO2											
CO3											
CO4											
CO5											

1 = Slightly (low) 2 = Moderate (medium) 3-Substantially(High)

Mapping Course Outcomes with Programme Outcomes:

Course Code	Unit	Course Outcomes							Programme Outcomes										
		1	2	3	4	5	6		a	b	c	d	e	f	g	h	i	j	k
S-134	I																		
	II																		
	III																		
	IV																		
	V																		

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	D. Vijay Kumar			
Sign with Date				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (Autonomous)
Department of Aerospace Engineering

Lesson plan

Course Name: Thermodynamics S408
SEM: III

Course: B.Tech **Department: ASE**

Sl. No.	Tentative Date	Topics to be covered	Actual Date	No. of classes	Content Delivery Methods
UNIT I - BASIC CONCEPTS AND DEFINITIONS					
1	21-06-16	**Basic Concepts and Definitions:** Introduction		1	DM1
2	22-06-16	Macroscopic and Microscopic View Point, Continuum		1	DM1/DM2
3	23-06-16	System, Control Volume, Properties of System		1	DM1
4	24-06-16	State and Equilibrium, Thermodynamic Equilibrium		1	DM1
5	25-06-16	**Tutorial - I**		1	DM2
6	28-06-16	Process- Quasi static process-Cycle		1	DM1/DM2
7	29-06-16	Temperature -Temperature scales		1	DM1
8	30-06-16	Zeroth law of Thermodynamics, energy-forms of energy, heat, work		1	DM1
9	01-07-16	Mechanical forms of work		1	DM1
10	02-07-16	**Tutorial - II**		1	DM2
11	05-07-16	Moving boundary of system, Thermodynamic definition of work		1	DM1
12	07-07-16	Moving Boundary work		1	DM4
13	08-07-16	Work done in various non-flow process		1	DM1
14	12-07-16	Problems on Displacement Work		1	DM1/DM2
16	13-07-16	**Tutorial - III**		1	DM2
16	14-07-16	Path and point function		1	DM1
UNIT II - FIRST LAW OF THERMODYNAMICS & FIRST LAW ANALYSIS OF CONTROL VOLUME					
17	15-07-16	**First Law of Thermodynamics**: introduction		1	DM2
18	16-07-16	Energy change of system		1	DM1
19	19-07-16	First Law Analysis of closed system		1	DM1
20	20-07-16	Moving boundary work, Polytropic process		1	DM1
21	21-07-16	**Tutorial - IV**		1	DM2
22	22-07-16	Energy balance		1	DM1
23	23-07-16	Internal energy, specific heat, Enthalpy, PMM-I		1	DM1
24	26-07-16	**First law analysis of control volume**-Conservation of mass		1	DM1/DM2
25	27-07-16	Conservation of energy principle-flow work		1	DM1
26	28-07-16	**Tutorial - V**		1	DM2
27	29-07-16	Total energy of flowing fluid, the steady flow process		1	DM1
28	30-07-16	Steady flow energy equation		1	DM1/DM2
29	02-08-16	Steady flow engineering devices-		1	DM1
30	03-08-16	Nozzle, diffuser ,Turbine, compressor		1	DM1
31	04-08-16	**Revision**		1	DM1/DM2
32	05-08-16	**Revision**		1	DM1

33	06-08-16	**Revision**		1	DM2
Unit III- SECOND LAW OF THERMODYNAMICS AND ENTROPY					
34	16-08-16	**Second law of thermodynamics** :Introduction		1	DM2
35	17-08-16	Thermal energy reservoirs, heat engines		1	DM1/DM2
36	18-08-16	Kelvin-Planks, clausius statement of second law of thermodynamics		1	DM1
37	19-08-16	Refrigerator, heat pumps		1	DM1
38	20-08-16	**Tutorial - VI**		1	DM1
39	23-08-16	Equivalence of kelvin-plank and clausius statements		1	DM1/DM2
40	24-08-16	Perpetual motion machines, reversible and irreversible process		1	DM1
41	26-08-16	Carnot cycle, carnot principles		1	DM4
42	27-08-16	**Entropy**: Introduction, clausius inequality, property diagrams		1	DM1
43	30-08-16	**Tutorial - VII**		1	DM1/DM2
44	31-08-16	Discussion continued on property diagrams		1	DM1
45	01-09-16	Max well Relation, entropy change for ideal gases		1	DM1
46	03-09-16	Isentropic relations for ideal gases		1	DM1
47	06-09-16	Principle of increase of entropy			
48	07-09-16	Third Law of Thermodynamics			
UNIT IV - NON REACTIVE GAS MIXTURES AND PROPERTIES OF PURE SUBSTANCES					
49	08-09-16	**Non reactive gas mixtures**-Introduction,		1	DM1/DM2
50	09-09-16	composition of gas mixture		1	DM1/DM2
51	13-09-16	Mass fraction, mole fraction, Daltons law of additive pressures		1	DM1
52	14-09-16	Amagards law of additive volumes		1	DM1
53	15-09-16	**Tutorial - VIII**		1	DM1/DM2
54	16-09-16	Ideal gas mixture		1	DM1
55	17-09-16	**Pure substance**: Introduction,		1	DM2
56	20-09-16	phase of pure substance		1	DM1
57	21-09-16	Phase change processes, property diagrams		1	DM1/DM2
58	22-09-16	P-V-T surface, property tables		1	DM1
59	23-09-16	**Tutorial - IX**		1	DM1
60	24-09-16	h-s Diagram or Mollier Diagram for pure Substance		1	DM1
UNIT V - GAS, VAPOUR POWER CYCLES AND REFRIGERATION CYCLES					
61	27-09-16	**Gas power cycles**-Introduction,		1	DM1
62	28-09-16	Analysis of power cycles- Carnot		1	DM1
63	29-09-16	Analysis of Otto		1	DM1/DM2
64	30-09-16	Analysis of Diesel		1	DM1
65	01-10-16	**Tutorial - X**		1	DM2
66	04-10-16	Analysis of Dual		1	DM1
67	05-10-16	Analysis of Stirling, Atkinson cycle		1	DM1/DM2
68	06-10-16	Analysis of Ericsson, Lenior and Brayton		1	DM1
69	07-10-16	**Vapour power cycles**: Analysis of Carnot vapor cycle, Simple Rankine cycle		1	DM1
70	08-10-16	**Tutorial - XI**		1	DM2

71	18-10-16	Refrigeration cycles: Reversed carnot cycle		1	DM1/DM2
72	19-10-16	Bell-Coleman cycle		1	DM1
73	20-10-16	Simple vapor compression cycle		1	DM6
74	21-10-16	Problems on VCRS		1	DM1
75	22-10-16	Problems on VCRS		1	DM1
76	25-10-16	**Advanced Topics**		1	DM6
77	26-10-16	**Advanced Topics**		1	DM6
78	27-10-16	**Advanced Topics**		1	DM6
79	28-10-16	**Advanced Topics**		1	DM6
80	29-10-16	**Revision**		1	DM6
81	01-11-16	**Revision**		1	DM6
82	02-11-16	**Revision**		1	DM6
		Total class	**82**		
		Total number of classes available as per academic calendar	**82**		
		Number of classes required to complete the syllabus	**80**		

NOTE: DELIVERY METHODS (DM):
DM1: Lecture interspersed with discussions/BB
DM2: Tutorial
DM3: Lecture with a quiz
DM4: Assignment/Test
DM5: Demonstration (laboratory, fieldvisit)
DM6: Presentations/PPT

Course Outcomes:

1. Analyze the Concepts of Heat, Work and Energy and Temperature measurement.
2. Apply the First law of Thermodynamics to various thermal systems for analysis.
3. Analyze the irreversibility's of various systems using the second law of thermodynamics.
4. Demonstrate and analyze the different gas mixtures and pure substances.
5. Apply ideal cycle analysis to simple heat engines to estimate various performance parameters.

TEXT BOOK

Fundamentals of Engineering Thermodynamics- Second Edition, E. Rathakrishnan-PHI

REFERENCES

1. Thermodynamics: An Engineering Approach—Cengel, Y.A and Boles, M.A. McGraw-Hill
2. Fundamentals of Classical Thermodynamics – G.J.Van Wylen & Sonntag.TMH
3. Engineering Thermodynamics – P.K.Nag, TMH

PO's Mapping With CO's:

Mapping of Course Outcomes (COs) with Programme Outcomes (POs) TD - S 408																
		Pos											PSO'S			
		a	b	c	d	e	f	g	h	i	j	k	l	1	2	3	4
COs	CO1	1	2	1	2					1	1	1	1	1	1	1	1
	CO2	1	1	1	2					1	2	1	1	1	1	1	1
	CO3	1	1	1	1					1	1	1	1	1	1	1	1
	CO4	1	1	1	2					2	1	2	1	1	1	1	1
	CO5	1	2	1	2					2	2	3	1	1	1	1	1

Signature			
	Name of the Faculty	**Name of Course Co-ordinator**	**HOD**
	I. Dakshina Murthy		Dr.P.Lovaraju

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (Autonomous)
Department of Aerospace Engineering

Lesson plan

Course Name: Strength of Materials(S390) **SEM: III**

Course: B.Tech **Department: ASE**

Sl. No.	Tentative Date	Topics to be covered	Actual Date	No. of classes	Content Delivery Methods
Unit I- **SIMPLE STRESSES AND STRAINS**					
1	20-06-16	Introduction to Stress & Strain		1	DM1
2	21-06-16	Types of stresses and strains		1	DM1
3	22-06-16	Stress strain curves for different materials		1	DM1
4	23-06-16	Hooke's law, factor of safety		1	DM1
5	24-06-16	Stresses and strains		1	DM2
6	27-06-16	Stepped bars – uniformly varying sections		1	DM1
7	28-06-16	Principle of super position		1	DM1
8	29-06-16	stresses in composite bars due to axial force		1	DM1
9	30-06-16	stresses in composite bars due to temperature		1	DM1
10	01-07-16	Strain energy due to axial force		1	DM2
11	04-07-16	Strain energy due to axial force		1	DM1
12	05-07-16	stresses due to sudden loads		1	DM1
13	07-07-16	Poisson's ratio, shear stress - shear strain		1	DM1
14	08-07-16	Bulk modulus and volumetric strain		1	DM1
15	11-07-16	Relationship between elastic constants(E and G)		1	DM1
16	12-07-16	Relationship between elastic constants(E and K)		1	DM1
17	13-07-16	Relationship between elastic constants(E,G, and K)		1	DM1
18	14-07-16	Elastic constants		1	DM2
19	15-07-16	Simple Stresses and Strains		1	DM4
Unit II- **SHEAR FORCE AND BENDING MOMENT**					
20	18-07-16	Introduction to Shear force & Bending Moment		1	DM1
21	19-07-16	Types of beams, supports and loads		1	DM1
22	20-07-16	Relationship between loading - shear force and bending moment		1	DM1
23	21-07-16	Shear force and bending moment diagrams for SSB for different loads		1	DM1
24	22-07-16	Simply supported beam		1	DM2
25	25-07-16	SF & BM diagrams for SSB(UDL)		1	DM1
26	26-07-16	Shear force and bending moment diagrams for cantilever beam for different loads		1	DM1
27	27-07-16	SF & BM diagrams for cantilever beam (UDL)		1	DM1
28	28-07-16	SFD & BMD for cantilever beam		1	DM1
29	29-07-16	cantilever beam		1	DM2
30	01-08-16	Shear force and bending moment diagrams for overhanging beam for different loads		1	DM1
31	02-08-16	SF & BM diagrams for overhanging beam(UDL)		1	DM1
32	03-08-16	SFD & BMD for overhanging beam		1	DM1
33	04-08-16	Maximum bending moment and point of contra flexure		1	DM1
34	05-08-16	Shear force and Bending moment		1	DM4

Unit III- **STRESSES IN BEAMS**					
35	16-08-16	Introduction to stresses in beams, Theory of simple bending		1	DM1
36	17-08-16	Derivation of the equation M/I = E/R = f/y		1	DM1
37	18-08-16	Bending equation		1	DM1
38	19-08-16	Bending Stresses		1	DM2
39	22-08-16	Section modulus & Problems		1	DM1
40	23-08-16	Introduction to Torsion, Theory of torsion and assumptions		1	DM1
41	24-08-16	Derivation of the equation T/J = Gθ/L = q/r		1	DM1
42	26-08-16	Torsion		1	DM2
43	29-08-16	Polar modulus & Problems		1	DM1
44	30-08-16	power transmitted by a shaft		1	DM1
45	31-08-16	Stresses in solid circular shafts		1	DM1
46	01-09-16	Torsional stresses		1	DM2
47	02-09-16	Stresses in circular shafts		1	DM1
48	06-09-16	Stresses in hollow circular shafts		1	DM1
49	07-09-16	Problems on shafts		1	DM1
50	08-09-16	Stresses in beams		1	DM4
Unit IV- **ANALYSIS OF STRESSES IN TWO DIMENSIONS & SHEAR STRESSES**					
51	09-09-16	State of stress at a point,		1	DM1
52	13-09-16	Normal & tangential stresses on inclined planes		1	DM1
53	14-09-16	Principal stresses and their planes		1	DM1
54	15-09-16	Problems on Principal stresses and their planes		1	DM1
55	16-09-16	analysis of stresses		1	DM2
56	19-09-16	Introduction to Failure Theories		1	DM1
57	20-09-16	Maximum Stress theory – Maximum Strain theory		1	DM1
58	21-09-16	Maximum Shear Stress Theory –Distortion energy theory – Maximum Strain energy theory		1	DM1
59	22-09-16	Failure Theories		1	DM2
60	23-09-16	Introduction to Shear Stress		1	DM1
61	26-09-16	Shear stress distribution across various beam cross sections like Rectangular c/s.		1	DM1
62	27-09-16	Circular, Triangular cross sections		1	DM1
63	28-09-16	Shear stress distribution of I Sections.		1	DM1
64	29-09-16	Shear stress distribution of T Sections		1	DM1
65	30-09-16	Analysis of stresses in two dimensions		1	DM4
Unit V- **DEFLECTION OF BEAMS & THIN, THICK AND SPHERICAL SHELLS**					
66	03-10-16	Introduction to Deflection of Beams		1	DM1
67	04-10-16	Differential equation of elastic line		1	DM1
68	05-10-16	Deflection in statically determinate beams		1	DM1
69	06-10-16	Deflection in SSB & Cantilever Beams		1	DM1
70	07-10-16	Deflection of beams		1	DM2
71	17-10-16	Macaulay's method for prismatic members		1	DM1
72	18-10-16	Area moment method for stepped beams with concentrated loads.		1	DM1
73	19-10-16	Area moment method		1	DM1
74	20-10-16	Hoop and longitudinal stress		1	DM1
75	21-10-16	Thin cylinders		1	DM1
76	24-10-16	Thin cylinders problems		1	DM2

77	25-10-16	thick cylinders		1	DM1
78	26-10-16	Spherical shells, Changes in dimensions and volume		1	DM1
79	27-10-16	Revision		1	DM1
80	28-10-16	Revision		1	DM1
		Total class		80	
		Total number of classes available as per academic calendar		**80**	
		Number of classes required to complete the syllabus		**78**	

NOTE: DELIVERY METHODS (DM):
DM1: Lecture interspersed with discussions/BB
DM2: Tutorial
DM3: Lecture with a quiz
DM4: Assignment/Test
DM5: Demonstration (laboratory, fieldvisit)
DM6: Presentations/PPT

Course Educational Outcomes:

- To understand the stress-strain relations applicable for composite materials
- To analysis behaviour of composite materials at micro and macro level
- To design the multi directional composites
- To design different types of sandwich panels used in aerospace industries
- To apply techniques of fabrication processes to manufacturing composites

TEXT BOOKS:

1. Calcote, L R. "The Analysis of laminated Composite Structures", Von – Noastrand Reinhold Company, New York 1998.
2. Jones, R.M., "Mechanics of Composite Materials", McGraw-Hill, Kogakusha Ltd., Tokyo, 1998, II edition.

REFERENCE BOOKS:

1. Agarwal, B.D., and Broutman, L.J., "Analysis and Performance of Fibre Composites", John Wiley and sons. Inc., New York, 1995.
2. Lubin, G., "Handbook on Advanced Plastics and Fibre Glass", Von Nostrand Reinhold Co., New York, 1989

Signature			
	Name of the Faculty	**Name of Course Co-ordinator**	**HOD**
	S.Indrasena Reddy		Dr.P.Lovaraju

	LESSON PLAN
	Course Code& Course Name: BASIC ELETRICAL ENGINEERING (S143) **SEM:** III **Programme:** B.Tech , II Year **Department:** ASE **Name of Faculty: T.NAGADURGA**

Course Objectives:

The objective of this course is to introduce the electrical circuits, and provide knowledge and skills needed to calculate efficiency of different machines, and also prepare the students to understand the working principles of different electrical and electronic measuring instruments.

Course outcomes:

After completion of the course students will be able to:

CO1. Analyse different types of electrical circuits.
CO2. Identify a suitable dc machine for particular application.
CO3. Use the techniques to measure efficiency and regulation of AC Machines.

CO4. Understand the working of electrical measuring instruments.

Prerequisites:

Electricity, Magnetism,Dynamo

S No.	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
UNIT I: ELECTRICAL CIRCUIT FUNDAMENTALS					
1.	20-6-2016	Electric power system & introduction to syllabus		1	DM1
2.	21-6-16	Basic definitions of Electrical circuits		1	DM1
3.	22-6-16	Types of elements and Examples		1	DM1
4.	23-6-16	Resistive networks(series and parallel)		1	DM1
5.	24-6-16	Ohm's law and Kirchhoff's laws **Tutorial 1**		1	DM2
6.	27-6-16	Problems on Ohm's and Kirchhoff's laws		1	DM1
7.	28-6-16	Inductance and capacitance		1	DM1
8.	29-6-16	Inductive & capacitive networks		1	DM1

S No.	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
		(series and parallel problems)			
9.	30-6-16	Star<->delta transformations		1	DM1
10.	1-7-16	Delta-srtar transformation		1	DM1
11.	4-7-16	Problems on Star<->delta transformations**: Tutorial 2**		1	DM2
12.	5-7-16	Problems on delta-star transformation: **Tutorial 3**		1	DM2
13.	7-7-16	Source Transformation		1	DM1
14.	8-7-16	**Test on Unit -I**		1	DM4
		UNIT II: DC MACHINES			
15.	11-7-16	Basic laws of DC machine		1	DM1
16.	12-7-16	Principle of operation of DC Generator		1	DM1
17.	13-7-16	Construction of DC Generator		1	DM2
18.	14-7-16	Construction of DC Generator		1	DM1
19.	15-7-16	Action of commutator		1	DM1
20.	18-7-16	EMF Equation of DC Generator		**1**	DM1
21.	19-7-16	**Tutorial 4**		**1**	DM2
22.	20-7-16	Types of DC Generators		1	DM1
23.	21-7-16	Losses in DC Machine**:**		1	DM1
24.	22-7-16	**Tutorial 5**		1	DM2
25.	25-7-16	Problems on losses and of dc generators		1	DM1
26.	26-7-16	Magnetization and load Characteristics Of DC Generators		1	DM1
27.	27-7-16	Characteristics of series Generator		1	DM1
28.	28-7-16	Characteristics of shunt Generator		1	DM1
29.	29-7-16	Characteristics of compound Generator**: Tutorial 6**		1	DM2
30.	1-8-16	Principle of operation of DC Motor		1	DM1
31.	2-8-16	Significance of Back EMF &Voltage equation of DC Motor		1	DM1

S No.	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
32.	3-8-16	Losses and efficiency		1	DM1
33.	4-8-16	Problems on DC motors, Necessity of 3-Point starter		1	DM1
34.	5-8-16	**Tutorial 7:Test on Unit –II**		1	DM4
		MID-I			
		UNIT III: AC FUNDAMENTALS & TRANSFORMERS			
35.	16-8-16	Generation of sinusoidal alternating voltage		1	DM1
36.	17-8-16	Important AC Terminology, phase and phase difference		1	DM1
37.	18-8-16	Peak, Average, RMS, Instantaneous, Peak factor, Form factor		1	DM1
38.	19-8-16	Problems on single phase AC circuits		1	DM1
39.	22-8-16	Concept of reactance**:**		1	DM1
40.	23-8-16	**Tutorial 8**		1	DM2
41.	24-8-16	Concept of impedance		1	DM1
42.	26-8-16	Power factor, Real, Reactive, apparent power		1	DM1
43.	29-8-16	Concept of susceptance, Admittance		1	DM1
44.	30-8-16	Principle of operation of Single phase Transformer		1	DM1
45.	31-8-16	Ideal Transformer**:**		1	DM1
46.	1-9-16	**Tutorial 9**		1	DM2
47.	2-9-16	Emf equation of Transformer		1	DM1
48.	6-9-16	Practical transformer		1	DM1
49.	7-9-16	Problems on EMF equation of transformer		1	DM1
50.	8-9-16	Equivalent circuit of transformer		1	DM1
51.	9-9-16	Regulation of transformer		1	DM1
52.	13-9-16	**Tutorial 10**		1	DM2
53.	14-9-16	Open circuit and Short circuit tests		1	DM1
54.	15-9-16	Losses and efficiency		1	DM1

S No.	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
55.	16-9-16	Problems on regulation		1	DM1
56.	19-9-16	**Test on Unit –III**		1	DM4
		UNIT IV: AC MACHINES			
57.	20-9-16	Principle of Operation of alternator**:** **Tutorial 11**		1	DM2
58.	21-9-16	Salient pole type rotor		1	DM1
59.	22-9-16	Non-salient pole type rotor		1	DM1
60.	23-9-16	Principle of operation of alternator on load and under no-load		1	DM1
61.	26-9-16	Determination of voltage regulation by synchronous impedance method		1	DM1
62.	27-9-16	Problems on voltage regulation of alternator**:**		1	DM1
63.	28-9-16	**Tutorial 12**		1	DM2
64.	29-9-16	Principle of Operation of Induction motor		1	DM1
65.	30-9-16	Slip ring and squirrel cage motors		1	DM1
66.	3-10-16	Problems on 3-phase induction motors		1	DM1
67.	4-10-16	Slip-Torque Characteristics of IM		1	DM1
68.	5-10-16	**Tutorial 13**		1	DM2
69.	6-10-16	**Test on Unit –IV**		1	DM4
		UNIT V: ELECTRICAL MEASURIMG INSTRUMENTS			
70.	7-10-16	Classification of Electrical measuring Instruments		1	DM1
71.	17-10-16	Principle of operation and essentials of indicating instruments			DM1
72.	18-10-16	Controlling torque		1	DM1
73.	19-10-16	Deflecting torque		1	DM1
74.	20-10-16	Working and construction of Permanent magnet moving coil instruments**: Tutorial 14**		1	DM2
75.	21-10-16	Extension of range of PMMC instruments		1	DM1
76.	24-10-16	Working and construction of Dynamometer type instruments		1	DM1
77.	25-10-16	Working and construction of attraction type moving iron		1	DM1

S No.	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
		instruments			
78.	26-10-16	Working and construction of repulsion type moving iron instruments		1	DM1
79.	27-10-16	Extending range of MI instruments		1	DM1
80.	28-10-16	**Tutorial 15**		1	DM2
81.	31-10-16	Problems on PMMC and MI instruments		1	DM1
82.	1-11-16	**Test on Unit –V**		1	DM4
83.	2-11-16	**Revision**		1	DM1

NOTE: DELIVERY METHODS:

DM1: Lecture interspersed with discussions/BB

DM2: Tutorial

DM3: Lecture with a quiz

DM4: Assignment/Test

DM5: Demonstration (laboratory, field visit)

DM6: Presentations/PPT

Signature				
	Name of the Faculty	**Name of Course Coordinator**	**Name of Module Co-ordinator**	**HOD**

Head of the Department

Lakireddy Bali Reddy College of Engineering College

L.B.Reddy Nagar, Mylavaram , Krishna District, A.P

DEPARTMENT OF AEROSPACE ENGINEERING

LESSON PLAN

Subject :	**ENVIRONMENTAL STUDIES- S243**			
Academic Year :	**2016-17**	Semester :	**III**	**Date: 20/6/16 to 5/11/16**
Year :	**II**	Section :		

Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
UNIT I: NATURAL RESOURCES						
1	Course Objective, introduction, their applications	21/6/16		2	1	1,3,4,5,7
2	Introduction to syllabus, Def of Environmental studies, Scope & Importance of environmental studies. Need for public awareness.	23/6/16		2	1,3,6	
3	Renewable and non-renewable resources Forest resources	25/6/16		2	1,3,6	
4	Water resources	28/6/16		2	1,3,6	
5	Mineral resources	30/6/16		2	1,3,6	
6	Mineral resources and intro to Food resources	2/7/16		2	1,3,6	
7	Food resources	5/7/16		2	1,3,6	
8	Energy resources	7/7/16		2	1,3,6	
9	**Tutorial -1**	9/7/16		2,7	3,6	
10	**Assignment in UNIT I**	12/7/16		2,7	9	
UNIT II: ECOSYSTEMS AND BIODIVERSITY AND CONSERVATION						
11	Structure and functions of ecosystems	14/7/16		2	1,3,6	
12	Ecological succession, Food chains and Food web	16/7/16		2	1,9	
13	**Assignment in UNIT II**	19/7/16		2	9	
14	Ecological pyramids	21/7/16		2	1,3,6	
15	Bio-Geo chemical cycles	23/7/16		2	1,3,6	
16	**Tutorial-2**	26/7/16		2,7	3,6	
17	Biodiversity definition and levels of measuring biodiversity	28/7/16		2	1,3,6	
18	Bio-geographical classification of India	30/7/16		2	1,3,6	1,3,4,5,7
19	India as mega diversity nation, Values, Hot-spots	2/8/16		2	1,3,6	
20	Threats and conservation of biodiversity	4/8/16		2	1,3,6	
21	**Tutorial-3**	6/816		2,7	3,6	
22	**I MID EXAMINATIONS**	9/8/16			1,9	
23	**I MID EXAMINATIONS**	11/8/16			1	
UNIT-III: ENVIRONMENTAL POLLUTION						

Lakireddy Bali Reddy College of Engineering College

L.B.Reddy Nagar, Mylavaram , Krishna District, A.P

DEPARTMENT OF AEROSPACE ENGINEERING

LESSON PLAN

Subject :	**ENVIRONMENTAL STUDIES- S243**			
Academic Year :	**2016-17**	Semester :	**III**	**Date: 20/6/16 to 5/11/16**
Year :	**II**	Section :		

24	Air pollution	13/8/16		2	1,3,6	
25	Air pollution	23/8/16		2,7	1,3,6	
26	Water pollution	25/8/16		2	1,3,6	
27	Water pollution	27/8/16		2,7	1,3,6	
28	Soil pollution	30/8/16		2	1,3,6	
29	Noise pollution	1/9/16		2	1,3,6	
30	Radioactive pollution	3/9/16		2	1,3,6	1,3,4,5,7
31	Solid waste management	6/9/16		2	1,3,6	
32	Disaster management	8/9/16		2	1,3,6	
33	**Tutorial-4**	**10/9/16**		2,7	3,6	
34	**Assignment in UNIT III**	**13/9/16**		2,7	9	
	UNIT-IV: SOCIAL ISSUES AND ENVIRONMENT					
35	From unsustainable to sustainable development	**15/9/16**		2,7	1,3,6	
36	Environmental and human health	17/9/16		2	1,3,6	
37	Resettlement and rehabilitation	20/9/16		2	1,3,6	
38	**Tutorial-5**	22/9/16		2,7	3,6	
39	Climate change: Global warming & Acid rains	24/9/16		2	1,3,6	
40	Ozone depletion & Nuclear accidents and holocaust	27/9/16		2	1,3,6	
41	Consumerism and waste products	29/9/16		2	1,3,6	
42	**Tutorial -6**	1/10/16		2,7	3,6	
	UNIT-V: HUMAN POPULATION AND ENVIRONMENT					1,3,4,5,7
43	Population growth and variations among nations, population explosion	4/10/16		2	1,3,6	
44	Family welfare programs	6/10/16		2	1,3,6	
45	**Tutorial-7**	8/10/16		2	3,6	
46	Human rights and value education, HIV/AIDS	18/10/16		2	1,3,6	

Lakireddy Bali Reddy College of Engineering College

L.B.Reddy Nagar, Mylavaram , Krishna District, A.P

DEPARTMENT OF AEROSPACE ENGINEERING

LESSON PLAN

Subject **:**	**ENVIRONMENTAL STUDIES- S243**			
Academic Year :	**2016-17**	Semester :	**III**	**Date: 20/6/16 to 5/11/16**
Year :	**II**	Section :		

47	**Assignment in UNIT IV & V**	20/10/16	3	9	4	1,3,4,5,7
48	Women and child welfare programs	22/10/16		2	1,3,6	
49	Role of IT in Environmental management and human health	23/10/16		2	1,3,6	
50	**Tutorial-8**	27/10/16		2,7	3,6	
51	**Revision**	29/10/16		9	1	
52	**Revision**	1/11/16		9	1	
53	**II MID EXAMINATIONS**	4//11/16			5	

Signature of faculty Signature of Course Coordinator Signature of HOD

S. No.	Teaching Learning Process (TLP)	Delivery Methods (DM)	Assessment Methods (AM)
1	Solving Real world problem	Chalk & Talk	Assignments
2	Explaining application before theory	ICT tools	Quiz
3	Solving problems	Group discussions	Tutorials
4	Designing of experiments	Industrial visit	Surprise Tests
5	Problems on environmental, economics, health & safety	Field work	Mid Exams
6	Problems on professional & ethics	Case studies	Model Exam
7	Seminar	Mini Projects	END Exams
8	Problems using software	Numerical treatment	
9	Self study	Design / Exercises	