

Lesson Planning for the semester started w.e.f....15th January 2018

Name of Institute : Aravali College Of Engineering and Management
 Name of teacher with designation : Shalini Srivastava(Assistant Professor)
 Semester : 4th
 Department : Applied Science & Humanities
 Subject : Mathematics-III(MATH-201F)

Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
January		Section-A: Fourier Series And Fourier Transform:		
	Lecture 1	Euler's formulae, conditions for a Fourier expansion		
	Lecture 2	Functions having points of discontinuity, Change of interval		
	Lecture 3	Fourier expansion of odd Periodic functions		
	Lecture 4	Fourier expansion of Even Periodic functions		
	Lecture 5	Typical wave form:- Fourier expansion of square wave, rectangular wave, saw-toothed wave		
	Lecture 6	Typical Wave form continued:- saw-toothed wave, half and full rectified wave		
	Lecture 7	Half-range Series:- half range sine and cosine series.		
	Lecture 8	Fourier Integral, Fourier Transform		
	Lecture 9	Shifting theorem (both on time and frequency axes)		
	Lecture 10	Fourier transforms of derivatives, Fourier transforms of integrals		
	Lecture 11	Convolution theorem, Fourier transform of Dirac-delta function.		
Lecture 12	Assignments and Doubts session		Class Test 1	
Feb-March		Section-B: Function Of Complex Variable		
	Lecture 13	Functions of Complex Variable : Definition, Exponential function, Trigonometric function	Presentation On Application Of Fourier Series	
	Lecture 14	Hyperbolic functions, Logarithmic functions		
	Lecture 15	Limit and Continuity of a function		
	Lecture 16	Limit and Continuity of a function Continued		
	Lecture 17	Differentiability and Analyticity		
	Lecture 18	Introduction of Cauchy-Riemann equations		
	Lecture 19	Necessary and sufficient conditions for a function to be analytic		
	Lecture 20	Polar form of the Cauchy-Riemann equations		
	Lecture 21	Harmonic functions, application to flow problems		
	Lecture 22	Integration of Complex function		
	Lecture 23	Cauchy-Integral theorem and formula		
Lecture 24	Assignments and Doubts session			
March-April		Section-C: Power Series and Probability Distribution		
	Lecture 25	Power series, radius and circle of convergence		
	Lecture 26	Taylor's and Maclaurin's Series		
	Lecture 27	Laurent's series		
	Lecture 28	Zeroes and singularities of complex functions, Residues		
	Lecture 29	Evaluation of real integrals using residues (around unit and semi circle only).		
Lecture 30	Probability Distributions:- Addition and Multiplication theorem			

	Lecture 31	Probability Distributions Continued:- Conditional probability , Bayes theorem and its applications		
	Lecture 32	Random Variable and Continuous Variable, Pdf and Pmf function		
	Lecture 33	Properties and application of Binomial, Poisson distribution, Normal Distribution		
	Lecture 34	Properties and application of Binomial, Poisson distribution, Normal Distribution		
	Lecture 35	Assignments and Doubts session		Class Test 2
April	Section-D: Hypothesis Testing and Linear Programming Problem			
	Lecture 36	Introduction Of Hypothesis Testing and their application with significance	Presentation On Function Of Complex variable and Linear Programming	
	Lecture 37	Testing Of Hypothesis and their significance		
	Lecture 38	Test of signification for large sample and small sample		
	Lecture 39	F-test, T-test and Z-test (only application)		
	Lecture 40	Chi-Square for Goodness of fit test		
	Lecture 41	Introduction Of Linear Programming, Formulation of the problem		
	Lecture 42	Linear Programming continued: Graphical Method		
	Lecture 43	Canonical and Standard forms of linear Programming Problem		
	Lecture 44	Simplex Method and their working procedure		
	Lecture 45	Simplex Method and their working procedure Continued		
	Lecture 46	Duality Concept in Linear Programming Problem		
	Lecture 47	Dual Simplex method in Linear Programming Problem		
Lecture 48	Assignments and Doubts session.			

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Name of Institute : A.C.E.M FARIDABAD
Name of teacher with designa : SAURAV KUMAR ASS.PRO
Department :MECHANICAL
Subject :FLUID MACHINE
Semester :4th

Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
		SECTION A		
JANUARY	1	introduction of fluid.Concept of fluid and flow		
		ideal and real fluids, continuum concept, and properties of fluids.		
	2	Pascal's law, hydrostatic equation.		
	3	hydrostatic forces on plane and curved surfaces.		
	4	relative equilibrium, Problems.		
	5	Eulerian and Lagrangian description of fluid flow.		
		types of flows, flow rate and continuity equation.		
	6	differential equation of continuity in cylindrical and polar coordinates.		
7	Stream and potential functions, flow net, Problems.			
8	vorticity and circulation.			
	Problems.			

FEB		SECTION B		
	9	Concept of system and control volume, Euler's equation.		
	10	Bernoulli's equation, venturimeter		
	11	orifices, orificemeter, mouthpieces, kinetic and momentum		
	12	Impulse momentum relationship and its applications, Compressible Fluid Flow: Introduction, continuity momentum		
	13	Problems.		
	14	Compressible Fluid Flow: Introduction		
	15	continuity momentum and energy equation.		
		SECTION C		
MARCH	16	Viscous Flow: Flow regimes		
	17	Reynolds's number		
	18	uni-directional flow between stationary and moving parallel plates		
	19	Problems.		
	20	Flow Through Pipes		
	21	Major and minor losses in pipes,		
	22	series and parallel connection of pipes		
	23	branched pipes		
	24	equivalent pipe,		
25	power transmission through pipes			
26	Problems.			
		SECTION D		
APRIL	27	Boundary Layer Flow: Boundary layer concept		
	28	displacement, momentum and energy		
	29	von-karman momentum integral equation		
	30	laminar and turbulent boundary layer		
	31	Turbulent Flow: Shear stress in turbulent flow,		
	32	Prandtl mixing length hypothesis		
	33	velocity distribution in pipes		
	34	Problems		

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Name of Institute :Aravali College of Engg. and Management
Name of teacher with designa :Mr.Yuvraj
Semester 4th
Subject :KOM
Department :ME (4th)

Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
January	1	Introduction: Mechanism and machiness	Mechanism Demonstration s	Assignment 1
January	2	Kinematics links,kinematics pairs,kinematics chains,Degree of freedom, Grubler's rule		
January	3	Kinematics inversion, Equivalent linkages		
January	4	Four link planar mechanisms		
January	5	Steering mechanisms, Pantograph		
January	6	Kinematics Analysis of Plane Mechanisms displacement analysis, velocity diagram		
February	7	Velocity determination, relative velocity method	Gear Train Demo	Test 1
February	8	Instantaneous center of velocity, Kennedy's theorem		
February	9	Graphical methods of velocity and acceleration analysis		
February	10	Cams: Classification of cams and followers, disc cam nomenclature		
February	11	Construction of displacement, velocity and acceleration diagrams for different types of follower motions, analysis of follower motions		
February	12	Determination of basic dimension, synthesis of cam profile by graphical metho	Gear Train Demo	Assignment 2
February	13	Cams with specified contours		
February	14	Gears: Fundamental law of gearing		
February	15	Interference and undercutting, center distance variation		
February	16	Path of contact, arc of contact, Nonstandard gear teeth		
February	17	Gear Trains: Synthesis of simple, compound and reverted gear trains		
February	18	Analysis of epicyclic gear trains		
March	19	Function generation, path generation		
March	20	Freudenstein's equation	Friction	
March	21	Two and three position synthesis of four bar mechanisms by graphical methods		
March	22	Two and three position synthesis of four bar and slider crank mechanisms by a		

March	23	Precision positions, structural error, Chebychev spacing, transmission angle	Friction Concept	Assignment 3
March	24	Friction: Types of friction, Laws of friction		
March	25	Motion along inclined plane, Screw threads, Efficiency on inclined plane		
March	26	Friction in journal bearing		
March	27	Belts and pulleys: Open and cross belt drive, Velocity ratio, Slip, Material for belts		
March	28	Length of belts, Ratio of tension, Centrifugal tension	Pulleys Experiment	Test 2
March	29	Power transmitted by ropes, Initial tension, Creep		
March	30	Chain drives, Chain length, Classification of chains		
April	31	Power transmitted by belts		
April	32	Crowning of pulleys, Law of belting, Types of pulleys		
April	33	Numericals		
April	34	Numericals		
April	35	Numericals		

(Signature of the teacher concerned with date)

Lesson Planning for the semester started w.e.f

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Name of Institute : Aravali College of Engg. and Management
Name of teacher with designa : Mr. Ombir Singh
Semester : 4th
Subject : Manufacturing Technology -1
Department : ME (4th)

Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
January	1	Introduction, basic tool geometry, single point tool nomenclatures	ppt	Assignment 1
January	2	Chips type and their characteristics, mechanism of chips formation	ppt	
January	3	Theoretical and experimental determination of shear angle, orthogonal and oblique cutting	ppt	
January	4	Metal cutting theories, relationship of velocity, forces and power consumption	ppt	
January	5	Cutting speed, feed, and depth of cut		
January	6	Coolant, temperature profile in cutting	Tool Geometry	Test 1
February	7	Tool life relationship, Taylor's equation of tool life		
February	8	Representation of Systems or Processes		
February	9	Tool material and mechanism		
February	10	Introduction, elements of machining cost		
February	11	Tooling economics, machining, Economics and optimization		
February	12	Geometry of twist, drills and power calculation in drills		
February	13	Introduction, metal flow condition, theories of plasticity	ppt	Assignment 2
February	14	Conditions of plane strains, frictions, conditions in metal cutting	ppt	
February	15	Wire drawing, theory of forging, rolling theory, no slip angle, forward slip	ppt	
February	16	Types of tools, principles of location, locating and clamping devices	ppt	
February	17	Jigs, bushes, drilling jigs, milling and turning fixtures	ppt	
February	18	economics of jigs and fixtures	ppt	
March	19	Measurement linear and angular simple measuring instruments	ppt	
March	20	Sine bar, auto collimator, Comparator-mechanical	ppt	
March	21	Surface finish and its measurements	Machining Exercise	Assignment 3
March	22	Factor influencing surface and evaluation of surface finish		
March	23	Operation and devices of basic machine tools		
March	24	Indexing in milling operation		
March	25	Working principles of capstan and turret lathe		
March	26	Basic steps in casting processes, Pattern, types of patterns and allowances, Sand casting: sand properties constituents and preparation	ppt	Test 2
March	27	Mould and core making assembly	ppt	
March	28	Furnace and cupola, metal pouring and fettling, Casting treatment inspection		
March	29	classification of welding processes	Welding Practice	
March	30	Gas welding: oxy-acetylene welding		
April	31	TIG & MIG welding, submerged arc welding		
April	32	Welding defect and remedies		
April	33	Basic principle of hot and cold working processes		
April	34	Rolling, extrusion, forging, Drawing, wire drawing	ppt	
April	35	Sheet metal, Layout making, shearing	ppt	
April	36	Punching, blanking, piercing, Forming, bending, joining	ppt	

(Signature of the teacher concerned with date)

Lesson Planning for the semester started w.e.f jan-april 2018

Name of Institute Aravali institute of engineering and management
Name of teacher with designation Ms. Pooja (Assistant professor)
Semester 4th
Subject SOM-1
Department Mechanical

Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
JAN	1	Introduction of subject, Concept & types of Stresses and strains, numericals	tensile test on UTM	ppt
JAN	2	strain in simple and compound bars under axial loading, numerical		ppt
JAN	3	stress strain diagrams, Hooks law, numericals		ppt
JAN	4	elastic constants & their relationships, numericals		ppt
JAN	5	temperature stress & strain in simple & compound bars under axial loading, numericals	stress analysis of machine parts with the help of software	assignment 1
JAN	6	Concept of surface and volumetric strains, numericals		assignment 1
JAN	7	principle stresses & strains and principal- planes, numericals		assignment 1
JAN	8	Mohr's circle of stresses, Numerical		assignment 1
JAN	9	Introduction of SF & BM		assignment 1
JAN	10	SF & BM diagrams for cantilevers, simply supported beams with or without over-hang, Numericals	beam analysis	assignment2
JAN	11	uniformly distributed loads over whole span or a part of it, Numericals		assignment2
JAN	12	calculation of maximum BM & SF and the point of contra-flexure under concentrated loads, Numericals		assignment2
JAN	13	calculation of maximum BM & SF and the point of contra-flexure under uniformly distributed loads over whole span or a part of it, Numericals		assignment2
JAN	14	calculation of maximum BM & SF and the point of contra-flexure under combination of concentrated loads and uniformly distributed loads, Numericals		assignment2
JAN	15	calculation of maximum BM & SF and the point of contra-flexure under application of moments, relation between the rate of loading, Numericals		assignment2
JAN	16	Torsion of thin circular tube, Numericals	study of torsion testing machine	ppt
FEB	17	Solid and hollow circular shafts, tapered shaft, Numericals		ppt
FEB	18	stepped shaft & composite circular shafts, Numericals		ppt
FEB	19	combined bending and torsion, equivalent torque, effect of end thrust. Numerical.		ppt
FEB	20	Numerical.		ppt
FEB	21	Bending stresses in beams with derivation & application to beams of circular section Numericals	bending tests on UTM.	ppt
FEB	22	Bending stresses in beams with rectangular sections, Numerical		assignment3
FEB	23	Bending stresses in beams with I,T and channel sections Numerical		assignment 3
FEB	24	composite beams, shear stresses in beams with combined bending, torsion & axial loading of beams. Numerical.		assignment 3
FEB	25	axial loading of beams. Numerical.		assignment 3
FEB	26	Column under axial load, concept of instability and buckling	Strut and column study	ppt
MAR	27	slenderness ratio, derivation of Euler's formulae for the elastic buckling load		ppt
MAR	28	Rankine, Gordom's formulae Johnson's empirical formula for axial loading columns and their applications		ppt
MAR	29	eccentric compression of a short strut of rectangular & circular sections, Numerical		ppt
MAR	30	Relationship between bending moment, slope & deflection	study of bridge	visit of industry
MAR	31	Mohr's theorem, moment area method	finding the deflections of structures	assignment 4
APR	32	Method of integration, Macaulay's method		assignment 4
APR	33	calculations for slope and deflection of cantilevers	structure study	assignment5
APR	34	calculations for slope and deflection of simply supported beams with or without overhang under concentrated load,		assignment5
APR	35	calculations for slope and deflection of simply supported beams with Uniformly distributed loads or combination of concentrated and uniformly distributed loads		assignment5
APR	36	SF & BM calculations & diagrams for fixed beams under concentrated loads		assignment 6
APR	37	SF & BM calculations & diagrams for fixed beams under uniformly distributed load		assignment 6

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Name of Institute :Aravali College of Engg. and Management
Name of teacher with designation :Mr.Parveen Kumar

Semester :4th
 Subject :SPG
 Department :ME (4th)

Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
January	1	Introduction: Components of Steam Power System, Carnot Cycle	ppt	Assignment 1
January	2	Rankine Cycle, Modified Rankine Cycle	ppt	
January	3	P-V , H-S and T-S diagram for Rankine and Modified Rankine Cycle	ppt	
January	4	Mollier's diagram, use of steam table	ppt	
January	5	Steam Generators: Purpose, Classification of boilers	Boiler demonstration	
January	6	Fire tube and water tube boilers		
February	7	Mountings and accessories		
February	8	Babcock Wilcox boilers, draught		
February	9	Design of natural draught chimney, artificial draught		
February	10	Steam Nozzles: Function of steam nozzles		
February	11	Steady state energy equation, continuity equation		
February	12	Nozzle efficiency, critical pressure ratio for max. Discharge, Design of steam nozzle		ppt
February	13	Steam Engine: Working of steam engine		ppt
February	14	Single acting and double acting steam engine		ppt
February	15	Compounding of steam engine, ideal and actual indicator diagram	ppt	Assignment 2
February	16	Mechanical efficiency, thermal efficiency of steam engine	ppt	
February	17	Steam Turbine: Classification of steam turbine	ppt	
February	18	Compounding of impulse turbine, velocity diagram	ppt	
March	19	Efficiency of a single stage impulse turbine	ppt	
March	20	Reaction turbine, working principle	ppt	Assignment 3
March	21	efficiency, condition for max. Efficiency	Steam condenser Demo	
March	22	Governing of steam turbines		
March	23	Binary vapour cycle		
March	24	Steam Condensers: Classification of condensers		
March	25	Sources of air leakage in condensers		
March	26	Condenser efficiency, air pumps	ppt	
March	27	vacuum efficiency	ppt	
March	28	Cooling water calculation	ppt	Test 2
March	29	Regenerative feed heating cycle	Exhaust Analysis	
March	30	Numericals		
April	31	Numericals		
April	32	Fuel and Combustion: Classification of fuels – solid, liquid and gaseous fuels		
April	33	Calorific values of fuels	ppt	
April	34	Stoichiometric air fuel ratio		
April	35	Excess air requirement		
April	36	Analysis of exhaust gases	ppt	