

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

Name of Institute : Aravali College of Engg, and Management

Name of teacher with designation : Ms. Anju
Department : Mechanical Engineering

Subject: Basics of Mechanical Engineering ME-101C

Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
January	1	Basic Concepts of Thermodynamics		Assignment 1
January	2	Thermodynamics Terms		
January	3	Thermodynamic Equilibrium, State, Path, Process and Cycle		
January	4	Zeroth Law of Thermodynamics, Energy		
January	5	Work and Heat		
January	6	First law of Thermodynamics		
February	7	Constructional details of I.C. Engines		Assignment 2
February	8	classification of I.C. Engines	Demonstration of Engine	
February	9	Terminology of Engine		
February	10	Working of Petrol Engine/4 stroke		
February	11	cycles of Petrol and Diesel Engine		
February	12	Concept of Machine		
February	13	Velocity ratio and Mechanical Advantage		
February	14	Laws of Machine		
February	15	Efficiency of Simple Machine		
march	16	Reversibility concept		
march	17	Wheel and axle concept		
march	18	Double and Triple start worm and worm wheel		
march	19	Simple and compound screw jacks		
march	20	Differential pulley block		Assignment 4
march	21	Concept & types of Stresses and Strains	working of different machines	
march	22	Stress strain Diagram		
march	23	Hooks law, Elasticity concept		
march	24	lathe Machine		
march	25	Shaper and Milling		
April	26	Different manufacturing process		
April	27	Primary shaping processes		
April	28	finishing processes		
April	29	metal cutting processes		
April	30	Joining process		
April	31	Revision		
April	32	Revision		

Name of teacher with designation		: Charu Srivastava, AP		
Department		: Electronics & Communication Engineering		
Subject / Sem		: Elements of Electronics Engineering EC-101C		
Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
January	1	Introduction of Subject , Digital Electronics -No. systems		
	2	Binary, Decimal, Octal and Hexadecimal number systems conversions		
	3	Conversions		
	4	Boolean Algebra, De Morgan's theorem,		
	5	logic gates (AND, OR, NOT, NAND, NOR, XOR, XNOR), Combinational and sequential circuits		
	6	Introduction to flip-flops (S-R & J-K).		Assignment 1
	7	Semiconductor Physics :- Basic Concepts : Band Theory of solids, classification of conductors, insulators & semiconductors, Intrinsic Semiconductor		
February	8	Extrinsic Semiconductor		
	9	Concept of PN junction, PN junction under open circuit, Forward bias pn junction, Reverse bias pn junction		
	10	Zener diode -Diode circuits		
	11	Rectifiers (bridge type only), filters		
	12	Clippers		
	13	Clampers		
	14	BJT construction, operation,		
	15	Characteristics (CB configuration) and uses		
	16	Characteristics (CE and CC configurations) and uses		
	17	JFET construction, operation (CS configuration)		
	18	JFET characteristics (CS configuration) and uses		
March	19			Test 1
	20	MOSFET construction, operation (CS configuration)		
	21	MOSFET characteristics (CS configuration)		
	22	MOSFET uses		
	23	Seven segment display : Common anode & Comon cathode connections & applications		
	24	LED DISPLAY : Construction, Working, Advantages, Disadvantages and Applications.		

		LCD DISPLAY: Types of liquid crystals; Types of LCD display:- Dynamic scattering and field effect type; Construction, Working, Advantages, Disadvantages and applications.		Assignmnet 2
	25			
	26		Presentation 1	
	27	Communication System: Block diagram of a basic communication system , frequency spectrum		
	28	Need for modulation - methods of modulation		
	29	Principles of AM, FM		
April	30	PM , pulse analog		
	31	Pulse digital modulation		
	32	AM / FM transmitters		
	33	AM / FM transmitters receivers (block diagram description only)		
	34	Electronics Instruments Cathode Ray Oscilloscope (CRO)	Presentation 2	
	35	Function/Signal Generator		
	36	Role, importance and applications of general-purpose test instruments like Multimeter Digital & Analog		

Name of teacher with designation		Ms. Aasha (Assistant Professor)		
Department		Electronics & Communication Engineering		
Subject		Basics of Electrical Engineering (EE-101-C)		
Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
January	1	Introduction to subject, DC circuits:Ohm's Law and Kirchoff's Laws	Through Presentation on Various Topics	Assignment based on Topic Covered
	2	Analysis of series and parallel circuits excited by independent voltage sources		
	3	Analysis of series-parallel circuits excited by independent voltage sources; Power and energy		
	4	<i>Electromagnetism:</i> - Faradays Laws, Lenz's Law, Fleming's Rules		
	5	Statically and Dynamically induced EMF, Concepts of self-inductance, mutual inductance		
	6	coefficient of coupling , Energy stored in magnetic fields		
	7	Hysteresis and Eddy current losses, Network Theorems: Superpositiontheorem		
	8	Thevenin'stheorem, Norton'stheorem		
	9	Reciprocitytheorem, Compensationtheorem		
	10	Maximum Power transfertheorem		
February	11	Tellegan'stheorem	Through Numerical Practice on Various Topics	Class Test
	12	Millman's theorem; Application of theorems to dc and ac circuits		
	13	AC Circuits: <i>Single Phase A.C. Circuits:</i> -Generation of sinusoidal voltage		
	14	definition of average value, root mean square value, form factor and peak factor of sinusoidal voltage and current;		
	15	phasor representation of alternating quantities		
	16	Analysis with phasor diagrams of R, L, C, RL, RC and RLC circuits		
	17	Analysis with phasor diagrams of RC and RLC circuits		
	18	Real power, reactive power, apparent power and power factor		
	19	series, parallel and series- parallel circuits		
20	Series and Parallel resonance			
March	21	selectivity, bandwidth and Q factor; earthing	Through Revision on all Topics	Sessional-I & Assignment based on Topic Covered
	22	<i>Three Phase A.C. Circuits:</i> - Necessity and Advantages of three phase systems, Generation of three phase power		
	23	definition of Phase sequence, balanced supply and balanced load; Relationship between line and phase values of balanced star and delta connections		
	24	Power in balanced three phase circuits, measurement of power by two wattmeter method.		
	25	Electrical Machines:		
APRIL	26	<i>Transformers:</i> - Principle of operation and construction of single phase transformers (core and shell types)	Through Numerical Practice on Various Topics	Sessional-II
	27	EMF equation, losses, efficiency and voltage regulation		
	28	Principle of operation of an Auto Transformer, Applications		
	29	<i>Synchronous Generators:</i> - Principle of operation and constructional features, Application		
	30	<i>DC Machines:</i> - Principle of Operation and constructional features, Classification and Applications.		

31	Three Phase Induction Motor: - Principle of Rotating Magnetic Field, Principle of Operation of 3-Ph Induction Motor
32	Starting Methods and Applications of Three Phase Induction Motors

Name of teacher with designation	: Ashok Madaan, Assistant Professor			
Department	: Computer Science & Engineering			
Subject:	: FCPC CE-101C			
Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
January		Unit-1 An Overview of Computer System and Operating Systems:		
January		1 Fundamentals: Hardware organization of a computer, CPU, Input Devices,		
January		2 Output Devices, Memories, Registers, Ports.		
January		3 Different Number Systems:-Decimal Number System, Binary Number System		
January		4 Octal Number System, Hexadecimal Number System, and their inter-conversion		
January		5 Operating System Basics: Introduction to Operating system, Functions of an		
February		6 Operating Systems, Classification Of Operating Systems		TEST
February		Unit-2 Basic Introduction to Programming Languages:		
February		7 Machine Language, Assembly Languages, High level Languages,		
February		8 Types of high level languages, Compiler, Interpreter , Assembler, Loader, Linker		
February		9 Relationship between Compiler, Loader and Linker.		Assignment
February		10 Flowcharts.		
February		Unit-3 Basic Introduction to Computer Networks:		
February		11 LAN, MAN, WAN , Introduction to internet and protocols		
February		12 OSI Reference model		
February		13 TCP/IP reference model,		
February		14 Network connecting devices		
February		15 Hypertext documents, HTTP, DNS , Network Security		
February		Unit-4: An Overview of C: Basic and Derived Data Types:		
February		16 Constants, Variables and Data types,		
March		17 operators and Expressions		
March		18 Managing I/O operations		
March		19 Decision Making		
March		20 Branching and looping		
March		21 Derived Data Types like Arrays		
March		22 Strings		
March		23 Structure and Union in C:		TEST
March		24 Defining structure, declaring variables,		
March		25 Accessing structure members , structure initialization,		
March		26 copying and comparing structures variables , Operations on individual members		
April		27 Array of structure, structure with structure, unions		
April		Unit-5 Pointers in C:		Assignment
April		28 Introduction, Understanding Pointers, Accessing the address of a variable, Declaring Pointer Variables , Initialization of pointer variables		
April		29 Pointer Expressions, Pointer Increments and Scale Factors		
April		30 Pointers and Arrays Pointer and Character Strings		
April		31 Pointers as Function Arguments, Pointers to Functions		
April		Unit-6 File Management in C:		
April		32 Defining and opening file, closing file , I/O operations on files		
April		33 Error handling during I/O operations		

Name of teacher with designation	: Mrs. Himanshi Gupta, Assistant Professor			
Department	: Department of Applied Sciences and Humanities			
Subject:	Interactive English HAS 109C			
Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
		UNIT 1 Literature		
Jan		1 Shakespeare's Macbeth (Story Adaptation Of Play)		
Jan		2 Shakespeare's Macbeth (Story Adaptation Of Play)		
Jan		3 Shakespeare's Macbeth (Story Adaptation Of Play)		
Jan		4 Romantic Poetry- 'The Chimney Sweeper' By Blake		
Jan		5 Romantic Poetry- 'The Chimney Sweeper' By Blake		
Jan		6 'To Autumn' By John Keats		
Jan		7 'The Rainbow' By William Wordsworth		
Jan		8 'Ozymandias' By PB Shelley		
Jan		9 'The Rime Of The Ancient Mariner' (Text Of 1834) –Part-I By Samuel Coleridge		

Jan	10	'The Rime Of The Ancient Mariner' (Text Of 1834) Part-II By Samuel Coleridge	2days GROUP DISCUSSION COMPETITION	Assi
Feb	11	Historical Context Of Romantic Poetry-French Revolution And Industrial Revolution		
Feb	12	Historical Context Of Romantic Poetry-French Revolution And Industrial Revolution		
Feb		UNIT 2 Functional English		
Feb	13	Report Writing- Hypothesis-Evidence-Thesis		
Feb	14	Proposals/Feasibility And Progress		
Feb	15	Reports,		
Feb	16	Memo, Letter formats		
Feb	17	Essays, paragraphs		
Feb	18	Applications		
March	19	Description Of Objects, Appliances		
March	20	Description Of Instruments , Products, processes		
March		UNIT 3 Critical thinking and Creative Writing		
March	21	Critical Thinking; Creative Writing Exercises-1		
March	22	Seven Cs Of Writing		
March	23	Story Composition		
March	24	News Reports		
March	25	Feature Writing/Verse Composition		
March	26	Paraphrasing Poems		
March	27	Comprehending Unseen Passages		
March	28	Writing Biographies		
March	29	Art Of Interviewing		
April	30	Book Reviews		
April		UNIT 4 Semantics and Syntax		
April	31	Antonyms & synonyms-1/2/3		
April	32	Homophones		
April	33	Words often confused		
April	34	One word substitutes		
April	35	Word origins		
April	36	Sentence correction/error correction exercises in basic grammar		

Name of teacher with designation : Shalini Srivastava(Assistant Professor) Department : Applied Science & Humanities Subject: : Mathematics-II(HAS-104C)				
Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
Jan-Feb		Section-A: Ordinary Differential Equations and Applications:		
	Lecture 1	Exact differential equations, Equations reducible to exact differential equations		Class test 1
	Lecture 2	2. Exact differential equations, Equations reducible to exact differential equations Continued		
	Lecture 3	3. Applications of differential equations of first order & first degree to simple electric circuits		
	Lecture 4	3. Applications of differential equations of first order & first degree to simple electric circuits continued		
	Lecture 5	4.Newton's law of cooling		
	Lecture 6	5.Heat flow		
	Lecture 7	6.Orthogonal Trajectories		
	Lecture 8	7. Linear D.E. of second & higher order		
	Lecture 9	8. Complete solution, Complementary function and Particular integral		
	Lecture 10	9. Method of variation of parameters to find Particular Integral		
	Lecture 11	10. Cauchy's and Legendre's linear equations		
	Lecture 12	11. Cauchy's and Legendre's linear equations Continued		
	Lecture 13	12. Simultaneous linear equations with constant co-efficients		
Lecture 14	13. Assignments and Doubts session			
Feb-March		Section-B: Laplace transforms of elementary functions and Properties, Existence Conditions		
	Lecture 15	1. Laplace transforms of elementary functions and Properties, Existence Conditions Continued	Presentation On Application of Laplace Transform	
	Lecture 16	2. Transforms of derivatives and Integrals		
	Lecture 17	3. Transforms of derivatives and Integrals continued		
	Lecture 18	4. Multiplication by t^n		
	Lecture 19	5. Division by t		
	Lecture 20	6. Evaluation of Integrals		
	Lecture 21	7. Inverse transforms.		
	Lecture 22	8. Inverse transforms		
Lecture 23	9.Application to linear differential equations			

	Lecture 24	10.Evaluation of Integrals and Their application		
	Lecture 25	11. Proof of Convolution theorem and based question		
	Lecture 26	12. Laplace transforms of unit step function, unit impulse function		
	Lecture 27	13. Laplace transforms of periodic function		
	Lecture 28	14. Assignments and Doubts session		
	Section-C: Partial Differential Equations and Its Applications:			
Feb-March	Lecture 29	1.Formation of partial differential equations		Class test 2
	Lecture 30	2. Formation of partial differential equations Continued		
	Lecture 31	3. Lagrange's linear partial differential equation		
	Lecture 32	4. Lagrange's linear partial differential equation Continued		
	Lecture 33	5. First order non - linear partial differential equations		
	Lecture 34	6. First order non - linear partial differential equations Continued		
	Lecture 35	7. Charpit's method.		
	Lecture 36	8. Method of separation of variables and its applications to wave equation		
	Lecture 37	9. Method of separation of variables and its applications to one dimensional heat equation		
	Lecture 38	10.Method of separation of variables and its applications to two - dimensional heat flow (steady state solutions only)		
	Lecture 39	11. Assignments and Doubts session		
	Section-D: Infinite Series:			
March-April	Lecture 40	1. Introduction of Convergence and Divergence of Infinte Series	Presentation On Partial Differentiation and Infinte Series	
	Lecture 41	2. Comparison test		
	Lecture 42	3. Ratio Test		
	Lecture 43	4. Question Based On Ratio Test		
	Lecture 44	5. Rabbe's test and Logarithm test		
	Lecture 45	6. Rabbe's test and Logarithm Test continued		
	Lecture 46	7. Guass Test		
	Lecture 47	8.Cauchy Integral Test		
	Lecture 48	9. Cauchy's Root Test		
	Lecture 49	10. Introduction of alternating Series.		
	Lecture 50	11. Absolute Convergence of Alternating Series		
	Lecture 51	12. Conditional Convergence Of Alternating Infinte Series		
	Lecture 52	13. Assignments and Doubts session.		

Name of teacher with designation		Mr Mukesh Chawla, Assistant Professor			
Department		Applied Science and Humanities			
Subject:		Environmental Science HAS 107C			
Month	Class	Topic/Chapter covered	Academic activity	Test/assignment	
		Unit-1			
January		1 Nature, Scope and Importance	Presentation 1	Assignment 1	
		2 Need for Public awareness, Natural Resources			
		3 Role of an Individual in conservation of Natural Resources			
		4 Equitable use of resources for sustainable lifestyles			
	Unit-2				
February		5 Natural resources renewable and non renewable resources			
		6 Forest resources and water resources			
		7 Food and mineral resources			
		8 Energy and land resources			
		9 Role of an individual in conservation of natural resources and equitable use of resources for sustainable lifestyles.			
		Unit-3			
		10 Concept of an ecosystem, structure and function of an ecosystem	Presentation 2	Test 1	
		11 Producers, consumers and decomposers			
		12 Energy flow in the ecosystem, ecological succession			
		13 Food chains, food webs and ecological pyramids			
		14 Forest ecosystem - intro, types, characteristics, features, structure and function			
		15 Grassland ecosystem - intro, types, characteristics, features, structure and function			
		16 Desert ecosystem - intro, types, characteristics, features, structure and function			

		17 Aquatic ecosystem - intro, types, characteristics, features, structure and function		
March		Unit-4		
		18 Biodiversity – Definition, genetic species and ecosystem	Presentation2	
		19 Biogeographical classification of india, value of diversity		
		20 Consumption and productive use, social, ethical aesthetic and option values		
		21 Biodiversity at global, national and local levels		
		22 India as a mega-diversity nation, hot spots of biodiversity and threats to biodiversity		
		23 Habitat loss, poaching of wildlife and man-wildlife conflicts		
		24 Endangered and endemic species of india and conservation of biodiversity		
		Unit-5		
		25 Air and water pollution – causes, effects and control measures	Presentation2(contd)	Test 2
		26 Soil and marine pollution – causes, effects and control measures		
		27 Radio, chemical and nuclear hazards – causes, effects and control measures		
		28 Solid waste management		
		29 Disaster management		
		Unit - 6		
April		30 From Unsustainable and sustainable development, urban related problems to energy	Presentation3	Assignment 2
		31 Water conservation . problems and concerns		
		32 Environmental ethics consumerism and waste products		
		33 Environmental protection act , air act, water act		
		34 Wildlife protection act, forest act, public awareness		
		Unit-7		
		35 Population growth, variation, population explosion environment and human health		
		36 Human rights, value education, women welfare, role of it		
		Unit - 8		
		37 Field work – visit to local area and study of plants, insects, birds, ecosystem.		

Name of teacher with designation : _____				
Department : Applied Science & Humanities Dept				
Subject: Chemistry HAS 105C				
Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
		UNIT-1 (POLYMER AND POLYMERIZATION)		
January	6 lectures	Introduction and classification of polymers		
		classification of polymers		
		Preparation, properties and application of PVC, PE, Teflon		
		Preparation, properties and application of UF, PF, SBR and NBR		
		Effect of structure on properties of polymer, silicones, Biopolymers, Biodegradable polymerization, polymeric composites		
February	7 lectures	UNIT-1 (PHASE RULE)		
		Terminology of gibbs phase rule		
		Derivation of Gibbs phase rule, application of phase rule to one component system,		
		One component system (H ₂ O system)		
		Application of phase rule to two component system, eutectic system		
		Phase diagram of lead silver system		
		congruent melting point, (Zn-Mg) system,		
		Cooling curves	Presentation 1	
February	10 lectures	UNIT-2 (WATER AND ITS TREATMENT PART-I)		
		Hardness, Types of hardness, numericals, units of hardness		
		Detemination of hardness by EDTA method, Numericals of EDTA method		
		Numericals of EDTA method, Alkalinity		
		Numericals based on alkalinity, sludge (formation,disadvantages and prevention)		
		Scale (formation, disadvantages and prevention of scale) boiler corrosion		
		boiler corrosion, Caustic embrittlement, priming and foaming		
		priming and foaming, Softening methods (cold lime-soda process)		
March		Hot lime soda process, zeolite process		
		(Deminerlization process) Ion exchange resin and types of ion exchange resin		
		ion exchange process, mixed bed demineralization,		
				Assignment 1

March		UNIT-3 (CORROSION AND ITS PREVENTION)		
	6 lectures	Introduction, types of corrosion, mechanism of dry corrosion		
		types of corrosion, mechanism of wet corrosion,		
		galvanic corrosion, conc.cell corrosion, stress corrosion		
		Factors affecting corrosion		
		Preventive methods (cathodic&anodic protection),		
		Soil corrosion, microbiological corrosion,		Assignment 2
		UNIT-3 (LUBRICATION AND LUBRICANTS)		
April		Introduction of lubrication, Mechanism of lubrication		
		Classification of lubrication		
		solid lubricants(MoS ₂ , graphite),		
		Additives for lubricants, Viscosity and Viscosity determination,		
		viscosity index, Flah and fire point		
		Cloud and pour point, Saponification no.		
		Acid no, iodine value, aniline point,		
April		UNIT-4 (FUELS)		
		Definition and characteristics of a good fuel,		
		Classification of fuel, Calorific value		
		Definition and determination of calorific value of a fuel with the help of bomb calorimeter,		
		Proximate analysis of a fuel and its importance		
		Ultimate analysis of a fuel and its importance		
		Merits and demerits of gaseous fuel over other varieties of fuel, Composition properties and uses of Water gas		
		Composition properties and uses of Oil gas and Biogas		Test
		Composition properties and uses of LPG and CNG		

Name of teacher with designation : Dr.Poonam Gupta and Mr. Mukesh Chawla(AP)				
Department : ASH				
Subject: Physics II HAS 102C				
Month	Class	Topic/Chapter covered	Academic activity	Test/assignment
		Crystal Structure (Unit - 1)		
January	7 lectures	Space lattice, unit cell and translation vectors	Presentation 1	
		Miller indices, simple crystal structure(NaCl and Diamond)		
		X-ray diffraction methods, Laues treatment to Braggs law		
		Powder method		
		Point defects		
		Schottky defects, Frenkel defects		
		Quantum Physics (Unit - 1)		
February	9 lectures	Difficulties with Classical Physics, Simple concepts of Quantum Mechanics		
		Black Body Radiation,		
		Planck Constant		
		Phase Velocity & Group Velocity		
		Schrodinger Wave Equations		
		Particle in One dimensional Box		
		Quantum Statistics		
	Fermi Dirac Statistics and Bose-Einstein statistics			
		distribution function		
		Free Electron Theory (Unit II)		
February	6 lectures	Free Electron Theory & Its Limitations		Assignment 1
		Drude's Theory of Conduction		
		Quantum Theory of free electrons		
		Fermi Level, Density of states		
		Fermi Dirac Distribution Function		
		Richardson's Equation		
		Nanomaterials and Applications(Unit II)		
March	6 lectures	Feature of Nano-System		
		synthesis of nanoparticles		
		techniques- ball milling, sputtering		
		plasma synthesis		
		properties of nanoparticles-mechanical, optical		
		magnetic and electronic properties		
		introduction to carbon nanotubes		
		Band Theory Of Solids (Unit III)		
March	7 lectures	Origin Of energy Bands		Assignment 2
		KP Model		
		E-K Diagrams		
		Brillouin Zones		
		Effective mass & Holes		
		Metals, semiconductor & Insulators		
		Fermi Energy		
	Hall Effect			
		Photoconductivity & Photovoltaics (Unit III)		
April	4 lectures	Photo Conductivity		
		Effects of Traps		
		application of photoconductivity		
		Photo-Voltaic Cell, Solar Cell		
		MAGNETIC PROPERTIES OF SOLIDS (UNIT-IV)		

April	5 lectures	Atomic Magnetic Moments		
		Diamagnetism		
		Para Magnetism		
		Curie – Weiss law		
		Ferro magnetism		
		Domains Hypothesis		
		Superconductivity(UNIT-IV)		
April	4 lectures	Introduction (Experimental survey)		Test
		Meissner effect		
		London equations		
		Hard and Soft superconductors		
		Elements of BCS Theory		
		Applications of superconductors		