

Lesson Plan

Name of the Faculty: Mr. Nitish Munjal (Theory & Practical)

Discipline: Department of Applied Sciences and Humanities

Semester: 2nd

Subject: Engineering Drawing & Graphics (ME-105N)

Lesson Plan Duration: 15 Weeks (From January 2018 to April 2018)

Work Load (Lecture/Practical) per week (in hours): Lectures-01, Practicals-03

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1 st	1 st	Introduction to Engineering Drawing.	1 st	Introduction to Engineering Equipments, Elements of Engineering Drawing, Types of Lines, Various types of projections, First and third angle systems of orthographic projections
2 nd	1 st	Introduction to Projections of points in different quadrants	1 st	Projections of points in different quadrants
3 rd	1 st	Introduction to projection of line	1 st	Projections of straight lines: parallel to one or both reference planes, contained by one or both planes, perpendicular to one of the planes, inclined to one plane but parallel to the other plane
4 th	1 st	Line inclined to both planes	1 st	Projections of straight lines: inclined to both the planes, true length of a line and its inclinations with reference planes, traces of line
5 th	1 st	Introduction to projection of plane	1 st	Projection of planes: Introduction, types of planes, Projection of planes by change of position method only, projection of plane perpendicular to a plane, with axis parallel to both planes
6 th	1 st	Projection of plane inclined cases	1 st	Projection of planes: with axis parallel to one plane and inclined to the other plane
7 th	1 st	Introduction of Projection of Solids	1 st	Projection of Solids: Types of solids, Projections of Polyhedra Solids and Solids of Revolution – in simple positions with axis perpendicular to a plane, with axis parallel to both planes
8 th	1 st	Projection of solid inclined cases	1 st	Projection of Solids: axis parallel to one plane and inclined to the other

9th	1st	Introduction to section of solid	1st	Introduction - section planes - apparent section - true section - sectional view - need for sectional view - cutting plane - cutting plane line. Sectional view of simple solids such as Prism, Cylinders, Pyramids and Cones in simple positions Section plane perpendicular to one plane and parallel to the other
10th	1st	Section of solid inclined cases	1st	section plane perpendicular to one plane and inclined to the other
11th	1st	Development of solid	1st	Development of surface of various simple solids in simple positions such as cubes, cylinders, prisms, pyramids etc
12th	1st	Orthographic view of solids	1st	Three orthographic views of solids
13th	1st	Orthographic view of nut & bolt	1st	Orthographic Views of Nuts & Bolts.
14th	1st	Autocad basics	1st	AUTOCAD basics: Cartesian and Polar Co-ordinate system, Absolute and Relative Co-ordinates systems. Basic Commands: Line, Point, Rectangle, Polygon, Circle, Arc, Ellipse, Polyline
15th	1st	Editing commands used in autocad	1st	Basic editing Commands: Basic Object Selection Methods, Window and Crossing Window Erase, Move, Copy, Offset, Fillet, Chamfer, Trim, Extend, Mirror Display Commands: Zoom, Pan, Redraw, and Regenerate Simple dimensioning and text, simple exercises

Assignments:-

- A1: Projection of points
- A2: Projection of line
- A3: Projection of plane
- A4: Projection of Solid
- A5: Development of solid
- A6: Orthographic view of solid
- A7: Commands used in Auto Cad

Lesson Plan

Name of the Faculty: Mr. VISHANT KUMAR (Theory & Practical)

Discipline: Department of Applied Sciences and Humanities.

Semester: 1st

Subject: Fundamentals Of Computer Programming (CSE-101E), Computer Programming Lab (CSE-103N)

Lesson Plan Duration: 15 Weeks (From January, 2018 to April, 2018)

Work Load (Lecture/ Practical) per week (in hours): Lectures -04hr, Practicals-02hr

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1 st	1 st	Overview of unit 1	1 st	Write a program to find the sum of individual digits of a positive integer.
	2 nd	Unit I: Overview of Computers: Block diagram and its description		
	3 rd	Overview of Computers: Number systems	2 nd	EXERCISE
	4 th	Overview of Computers: Arithmetic of number systems		
2 nd	5 th	Overview of Computers: Computer Hardware: Printers,	3 rd	Write a program to generate the first n terms of the Fibonacci sequence.
	6 th	Overview of Computers: Keyboard and Mouse		
	7 th	Overview of Computers: Storage Devices, Assignment	4 th	EXERCISE
	8 th	Introduction to programming language: Different levels of PL: High Level language, Assignment		
3 rd	9 th	Introduction to programming language: Assembly language	5 th	Write a program to generate all the prime numbers between 1 and n, where n is the input value given by the user.
	10 th	Introduction to programming language: Machine language		
	11 th	Introduction to programming language: Introduction to Compiler, Interpreter, Debugger		
	12 th	Introduction to programming language: Linker, Loader, Assembler, Assignment	6 th	EXERCISE
4 th	13 th	Problem Analysis: Problem solving techniques,	7 th	Write a program to find the roots of a quadratic equation.
	14 th	Problem Analysis: Algorithms		

				EXERCISE
	15 th	Problem Analysis: Flowchart representation	8 th	
	16 th	Unit 1 Test		
5 th	17 th	Overview of Unit II	9 th	Write a function to generate Pascal's triangle.
	18 th	Overview of Unit C: Elements of C		
	19 th	Overview of Unit C: Data types	10 th	EXERCISE
	20 th	Overview of Unit C: Storage classes in C		
6 th	21 st	Overview of Unit C: Operators: Arithmetic, relational	11 th	Write a function to construct a pyramid of numbers.
	22 nd	Overview of Unit C: logical, bitwise		
	23 rd	Overview of Unit C: unary, assignment, Assignment	12 th	EXERCISE
	24 th	Overview of Unit C: conditional operators		
7 th	25 th	Overview of Unit C: precedence & associativity of operators.	13 th	Write a C functions to find both the largest and smallest number of an array of integers.
	26 th	Input/output: Unformatted I/O function in C, Assignment		
	27 th	Input/output: formatted I/O function in C	14 th	EXERCISE
	28 th	Control statements: if statement, switch statement		
8 th	29 th	Control statements: Repetition: for, while, Assignment	15 th	Write a program for addition of Two Matrices
	30 th	Control statements: do-while loop		
	31 st	Control statements: break, continue, goto statements.	16 th	EXERCISE
	32 nd	Unit II test		
9 th	33 rd	Overview of Unit III	17 th	Write a program for Matrix multiplication by checking compatibility
	34 th	Arrays: Definition, types		
	35 th	Arrays: Processing an array.		
	36 th	Arrays: String handling	18 th	EXERCISE
10 th	37 th	Functions: Definition, prototype.	19 th	Write a program To find the factorial of a given integer.
	38 th	Functions: parameters passing techniques , Assignment		
	39 th	Functions: parameters passing techniques .	20 th	EXERCISE
	40 th	Functions: recursion, built-in functions		
11 th	41 st	Functions: passing arrays to functions	21 st	Write a program to explores the use of

	42 nd	Functions: returning arrays from functions		structures, union and other user defined variables
	43 rd	Unit III test	22 nd	EXERCISE
	44 th	Overview of Unit IV		
12 th	45 th	Pointers: Declaration	23 rd	Write a program to print the element of array using pointers
	46 th	Pointers: operations on pointers		
	47 th	Pointers: pointers and arrays	24 th	EXERCISE
	48 th	Pointers: dynamic memory allocation, Assignment		
13 th	49 th	Pointers: pointers and functions	25 th	Write a program to implement call by reference
	50 th	Pointers: pointers and strings		
	51 st	Structure & Union: Definition, processing, Assignment	26 th	EXERCISE
	52 nd	Structure & Union: Structure and pointers, Assignment		
14 th	53 rd	Structure & Union: passing structures to functions	27 th	Write a program to print the elements of a structure using pointers
	54 th	Structure & Union: use of union.		
	55 th	Data files: Opening and closing a file	28 th	EXERCISE
	56 th	Data files: I/O operations on files.		
15 th	57 th	Unit 4 Test	29 th	Write a program to concatenate two strings
	58 th	Problem Discussion & Revision		
	59 th	Problem Discussion & Revision	30 th	EXERCISE
	60 th	Problem Discussion & Revision		

Lesson Plan

Name of the Faculty: Mr. Ashutosh Dixit (Theory & Practical)

Discipline: Department of Applied Sciences and Humanities

Semester: 2nd

Subject: Applied Chemistry (AS-103N), Applied Chemistry Lab (AS-109N)

Lesson Plan Duration: 15 Weeks (From January 2018 to April 2018)

Work Load (Lecture/Practical) per week (in hours): Lectures-04, Practicals-02

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1 st	1 st	Zeroth Law of Thermodynamics	1 st	Determination of temporary and permanent hardness by EDTA method
	2 nd	First Law of Thermodynamics		
	3 rd	Second Law of Thermodynamics		
	4 th	Concept of entropy (for reversible and irreversible process, of ideal gases, of phase transition)		
2 nd	5 th	Third Law of Thermodynamics	2 nd	Determination of Ca ²⁺ and Mg ²⁺ hardness of water using EDTA method
	6 th	Free energy		
	7 th	Work function		
	8 th	Gibb's Helmholtz equation		
3 rd	9 th	Numericals	3 rd	To determine the alkalinity of given water sample
	10 th	Clausius-Clayperon equation		
	11 th	Numericals		
	12 th	Phase rule, Terminology and derivation of Gibbsphase rule		
4 th	13 th	Terminology and derivation of Gibbsphase rule	4 th	Determination of Dissolved Oxygen (DO) in given water sample
	14 th	Phase diagrams of water system, sulphur system		
	15 th	Phase diagrams of (Pb-Ag) system, (Zn-Mg) system and (Na-K) system		
	16 th	A1		
5 th	17 th	Hardness of water and its determination by EDTA	5 th	To determine the flash point and fire point of an oil by Pensky-Marten flash point apparatus.
	18 th	Numericals		
	19 th	Alkalinity and its determination		
	20 th	Numericals		
6 th	21 st	Scale and sludge formation (composition, properties and methods of prevention)	6 th	Determination of viscosity of lubricant by Red Wood Viscometer (No. 1 and No. 2)
	22 nd	Scale and sludge formation (composition, properties and methods of prevention)		
	23 rd	Water softening by ion exchange process		
	24 th	Desalination (reverse osmosis, electrodialysis)		

7 th	25 th	Desalination (reverse osmosis, electrodialysis)	7 th	To determine the strength of HCl solution by titrating it with NaOH solution conductometrically
	26 th	Green Chemistry: Definition and concept		
	27 th	Twelve principles of green chemistry		
	28 th	Twelve principles of green chemistry		
8 th	29 th	Twelve principles of green chemistry	8 th	To determine the total iron content (Fe ²⁺ and Fe ³⁺) in an iron ore by internal/self/external indicator method
	30 th	Alternate solvents – ionic liquids		
	31 st	Super critical fluid (SCF) system		
	32 nd	Derivatised and immobilised solvent materials		
9 th	33 rd	A2	9 th	To determine the coefficient of viscosity of a liquid by Ostwald viscometer
	34 th	Dry corrosion		
	35 th	Wet corrosion		
	36 th	Electrochemical theory of corrosion		
10 th	37 th	Pitting	10 th	To determine the strength of strong acid by titrating it with strong base using pH meter
	38 th	Water-line		
	39 th	Differential aeration and stress corrosion		
	40 th	Factors affecting corrosion		
11 th	41 st	Preventive measures (proper design and material selection, cathodic and anodic protection)	11 th	To determine the surface tension of a given liquid by means of stalagmometer by drop number method
	42 nd	Preventive measures (proper design and material selection, cathodic and anodic protection)		
	43 rd	Mechanism of thin and thick layer lubrication		
	44 th	Mechanism of thin and thick layer lubrication		
12 th	45 th	Classification of lubricants and important properties of lubricants (viscosity index, flash and fire point, saponification number, pour point, iodine number)	12 th	Revision
	46 th	Classification of lubricants and important properties of lubricants (viscosity index, flash and fire point, saponification number, pour point, iodine number)		
	47 th	Classification of lubricants and important properties of lubricants (viscosity index, flash and fire point, saponification number, pour point, iodine number)		
	48 th	Greases as lubricants: consistency and drop point test		
13 th	49 th	Greases as lubricants: consistency and drop point test	13 th	Revision
	50 th	A3		
	51 st	Ceramics (brief introduction of clays, silica, feldspar, porcelain and Vitreous Enamels)		
	52 nd	Ceramics (brief introduction of clays, silica, feldspar, porcelain and Vitreous		

		Enamels)		
14th	53rd	Cement (introduction, raw materials, manufacture of portland cement, analysis of cement)	14th	Revision
	54th	Cement (introduction, raw materials, manufacture of portland cement, analysis of cement)		
	55th	Cement (introduction, raw materials, manufacture of portland cement, analysis of cement)		
	56th	Nanoscale materials (introduction, properties of nanomaterials, brief discussion of nanocrystals and clusters, fullerenes, carbon nanotubes, dendrimers, nanowires, nanocomposites)		
15th	57th	Nanoscale materials (introduction, properties of nanomaterials, brief discussion of nanocrystals and clusters, fullerenes, carbon nanotubes, dendrimers, nanowires, nanocomposites)	15th	Revision
	58th	Nanoscale materials (introduction, properties of nanomaterials, brief discussion of nanocrystals and clusters, fullerenes, carbon nanotubes, dendrimers, nanowires, nanocomposites)		
	59th	Nanoscale materials (introduction, properties of nanomaterials, brief discussion of nanocrystals and clusters, fullerenes, carbon nanotubes, dendrimers, nanowires, nanocomposites)		
	60th	A4		

A1: Phase rule

A2: Green chemistry

A3: Properties of lubricant

A4: Nanoscale materials

Lesson Plan

Name of the Faculty: Mr. Ashutosh Dixit (Theory)

Discipline: Department of Applied Sciences and Humanities

Semester: 2nd

Subject: Fundamentals of Biotechnology (BT-101N)

Lesson Plan Duration: 15 Weeks (From January 2018 to April 2018)

Work Load (Lecture/Practical) per week (in hours): Lectures-03, Practicals-00

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1 st	1 st	Concept and definition of Biology		
	2 nd	Characteristic features of living organisms		
	3 rd	Cell ultra-structure and functions of cell organelles like nucleus, mitochondria, chloroplast, ribosomes and endoplasmic reticulum		
2 nd	4 th	Cell ultra-structure and functions of cell organelles like nucleus, mitochondria, chloroplast, ribosomes and endoplasmic reticulum		
	5 th	Difference between prokaryotic and eukaryotic cell		
	6 th	Difference between animal and plant cell		
3 rd	7 th	Introduction to Biomolecules: Definition		
	8 th	General classification and important functions of carbohydrates, lipids, proteins, nucleic acids (DNA& RNA: Structure and forms)		
	9 th	General classification and important functions of carbohydrates, lipids, proteins, nucleic acids (DNA& RNA: Structure and forms)		
4 th	10 th	Vitamins, hormones and enzymes		
	11 th	Vitamins, hormones and enzymes		
	12 th	A1		
5 th	13 th	Cell division- Mitosis and its utility to living systems		
	14 th	Meiosis and its genetic significance		
	15 th	Gene: Concept, location, definition and structure		
6 th	16 th	Gene: Concept, location, definition and		

		structure		
	17th	Introduction to replication, transcription, translation		
	18th	Mutations, Genetic disorders		
7th	19th	Genetics of blood groups		
	20th	Diabetes type I & II		
	21st	Brief introduction to morphology and pathogenicity of bacteria beneficial and harmful for human beings		
8th	22nd	Brief introduction to morphology and pathogenicity of fungi beneficial and harmful for human beings		
	23rd	Brief introduction to morphology and pathogenicity of virus beneficial and harmful for human beings		
	24th	Brief introduction to morphology and pathogenicity of protozoa beneficial and harmful for human beings		
9th	25th	A2		
	26th	Concepts of Genetic Engineering: Definition; Tools used in recombinant DNA Technology		
	27th	Plasmids as nature's interlopers		
10th	28th	Restriction enzymes as nature's pinking-shears		
	29th	Vectors as gene transfer vehicles		
	30th	Production and significance of transgenic plants and animals		
11th	31st	Basic concept of genetically modified organisms		
	32nd	A3		
	33rd	Definition of biotechnology		
12th	34th	Applications of Biotechnology in Agriculture		
	35th	Applications of Biotechnology in Medicine		
	36th	Applications of Biotechnology in Environment		
13th	37th	Applications of Biotechnology in Industry		
	38th	Applications of Biotechnology in Forensic Science		
	39th	Role of biology in Information Technology (Bioinformatics)		
14th	40th	Role of biology in Nanotechnology (Nanobiotechnology)		
	41st	Role of biology in Micro-electromechanical systems (Bio-MEMS)		
	42nd	Role of biology in Sensors (Biosensors)		

15 th	43 rd	Ethical issues related to Biotechnology		
	44 th	A4		
	45 th	Revision		

A1: Biomolecules

A2: Role of immune system in health and disease

A3: Concepts of Genetic Engineering

A4: Role of biology in allied fields

Lesson Plan

Name of the Faculty: Miss kirti (Theory)

Discipline: Department of Applied Sciences and Humanities

Semester: 2nd

Subject: Applied mathematics-II (AS-105N)

Lesson Plan Duration: 15 Weeks (From January 2018 to April 2018)

Work Load (Lecture) per week (in hours): Lectures-05

Week	Theory	
	Lecture day	Topic (including assignment/test)
1 st	1 st	Introduction to theory of equations
	2 nd	Formation of equations
	3 rd	Relation between roots and coefficients
	4 th	Practice of exercise
	5 th	Reciprocal equations
2 nd	6 th	Transformation of equations
	7 th	Practice of exercise
	8 th	A1
	9 th	TEST
	10 th	Beta functions
3 rd	11 th	Gamma functions
	12 th	Practice of exercise
	13 th	Evaluation of integrals by Leibnitz's rule
	14 th	Differentiation under integral sign
	15 th	Practice of exercise
4 th	16 th	A2
	17 th	TEST
	18 th	Laplace transform(basic concepts)
	19 th	Existence condition of laplace
	20 th	Transform of elementary functions
5 th	21 th	Properties of laplace transform
	22 th	Practice of exercise
	23 th	Transform of derivatives and integrals
	24 th	Multiplication and division property of laplace transform
	25 th	Evaluation of integral by laplace transform
6 th	26 th	A3
	27 th	TEST
	28 th	Inverse laplace
	29 th	Convolution theorem
	30 th	Unit step function and shifting property
7 th	31 th	Dirac delta function

	32 th	Practice of exercise
	33 th	Application of linear differential equations
	34 th	Simultaneous linear differential equations with constant coefficients
	35 th	Practice of exercise
8 th	36 th	A4
	37 th	TEST
	38 th	Exact differential equations and equation reducible to exact differential equation
	39 th	Application of differential equation of first order and first degree to simple electric circuits
	40 th	Newton's law of cooling
9 th	41 th	A5
	42 th	TEST
	43 th	Linear differential equations of second order and higher order
	44 th	Complete solution of differential equations
	45 th	Particular solution of differential equations
10 th	46 th	Practice of exercise
	47 th	Method of variation of parameter
	48 th	Method of undetermined coefficients to find P.I
	49 th	Cauchy and Legendre's linear equations
	50 th	Simultaneous linear equations with constant coefficients
11 th	51 th	A6
	52 th	TEST
	53 th	Introduction to vector calculus
	54 th	Scalar and vector point function
	55 th	Gradient of scalar field
12 th	56 th	Directional derivatives
	57 th	Divergence of vector
	58 th	Curl of vector
	59 th	Practice of exercise
	60 th	Physical interpretation of vector field
13 th	61 th	Line integral
	62 th	Surface integral
	63 th	Volume integral
	64 th	REVISION
	65 th	TEST
14 th	66 th	Green's theorem in a plane
	67 th	Application of Green's theorem
	68 th	Practice of Green's theorem
	69 th	Stoke's theorem
	70 th	Application of Stoke's theorem
15 th	71 th	Practice of Stoke's theorem
	72 th	Gauss divergence theorem
	73 th	Applications of Gauss divergence theorem

	74th	Practice on gauss divergence
	75th	A7

A1: Theory of equations

A2: Beta and gamma functions

A3: Inverse laplace transform

A4: Applications of linear differential equations

A5: Newton's law

A6: Divergence and curl of functions

Lesson Plan

Name of the Faculty: Dr. Parmjeet Kaur (Theory & Practical)

Discipline: Department of Applied Sciences and Humanities

Semester: 2nd

Subject: Applied Physics-II (AS-102N)

Lesson Plan Duration: 15 Weeks (From January 2018 to April 2018)

Work Load (Lecture) per week (in hours): Lectures-04 Practical-02

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1 st	1 st	Crystalline and Amorphous solids	1 st	To find the value of e/m for electrons by Helical method
	2 nd	Crystal Structure: lattice translation vector		
	3 rd	Symmetry operations		
	4 th	Space lattice, basis		
2 nd	5 th	Unit cell and Primitive cell	2 nd	To find the ionization potential of Argon/Mercury using a thyratron tube.
	6 th	Fundamental types of lattices		
	7 th	Two-dimensional Bravais lattices		
	8 th	Three dimensional Bravais lattices		
3 rd	9 th	Simple Cubic (SC)	3 rd	To study the variation of magnetic field with distance and to find the radius of coil by Stewart and Gee's apparatus.
	10 th	Body Centred Cubic (BCC)		
	11 th	Face Centred Cubic (FCC)		
	12 th	Hexagonal Close Packed (HCP) structure		
4 th	13 th	Sodium Chloride, Cesium Chloride	4 th	To find the value of Planck's constant by using photoelectric cell
	14 th	Diamond, Cubic Zinc Sulfide		
	15 th	Miller Indices		
	16 th	Numericals		
5 th	17 th	Bonding in Solids, Point defects in crystals	5 th	To study the V-I characteristics of a p-n diode.
	18 th	Schottky defect		
	19 th	Frenkel defect		
	20 th	Need and origin of Quantum concept, Wave-particle duality		
6 th	21 st	Phase velocity	6 th	To find the band gap of intrinsic semiconductor using four probe method.
	22 nd	Group velocity		
	23 rd	Relation between phase and group velocity		
	24 th	A1		
7 th	25 th	Uncertainty Principle and Applications	7 th	To find the flashing and quenching potential of Argon and to find the capacitance of unknown capacitor.
	26 th	Schrodinger's wave equation: time-dependent		
	27 th	Schrodinger's wave equation: time-independent		
	28 th	Physical Significance of wave function		

8 th	29 th	A2	8 th	To study the characteristics of (Cu-Fe, Cu-Constantan) thermocouple
	30 th	Classical free electron theory: electrical conductivity in metals		
	31 st	Thermal conductivity in metals		
	32 nd	Wiedemann-Franz law		
9 th	33 rd	Success and drawbacks of free electron theory	9 th	To study V-I characteristics of solar cell
	34 th	Quantum free electron theory: wave function, eigen values		
	35 th	Fermi-Dirac distribution function		
	36 th	Density of states		
10 th	37 th	Fermi energy and its importance	10 th	To find the value of Hall Coefficient of semiconductor.
	38 th	Thermionic Emission (qualitative).		
	39 th	A3		
	40 th	Bloch theorem		
11 th	41 st	Kronig-Penney Model (qualitative)	11 st	Revision
	42 nd	E versus k diagram		
	43 rd	Brillouin Zones		
	44 th	Concept of effective mass of electron		
12 th	45 th	Energy levels and energy bands	12 th	Revision
	46 th	Distinction between metals, insulators and semiconductors		
	47 th	Hall effect and its applications		
	48 th	A4		
13 th	49 th	Superconductivity: Introduction	13 th	Revision
	50 th	General features of Superconductors		
	51 st	Meissner effect		
	52 nd	Types of superconductors		
14 th	53 rd	Elements of BCS theory	14 th	Revision
	54 th	London equations, applications of superconductivity		
	55 th	A5		
	56 th	Nanomaterials: Introduction		
15 th	57 th	Synthesis of nanomaterials: Top-down and Bottom-up approach	15 th	Revision
	58 th	Sol-Gel and Ball Milling methods		
	59 th	Applications of nanomaterials		
	60 th	A6		

A1: Miller indices and point defects in crystal

A2: Schrodinger time dependent and time independent

A3: Fermi- Dirac distribution function

A4: Hall Effect and its applications

A5: Meissner effect, London equations

A6: Synthesis of nanomaterials.

Lesson Plan

Name of the Faculty: GEETANJALI PAPREJA (Theory)

Discipline: Department of Applied Sciences and Humanities

Semester: 2nd

Subject: Technical communication (HS-101N)

Lesson Plan Duration: 15 Weeks (From January 2018 to April 2018)

Work Load (Lecture) per week (in hours): Lectures-04

Week	Theory	
	Lecture day	Topic (including assignment/test)
1 st	1 st	Meaning and Nature of Communication
	2 nd	General and Technical , Miscommunication
	3 rd	Role and Importance
	4 th	Process of communication, Noise
2 nd	5 th	Introduction of types of communication
	6 th	Verbal communication- oral
	7 th	Oral communication
	8 th	Written Communication
3 rd	9 th	Written Communication
	10 th	Review of Verbal, Difference between oral and written
	11 th	Introduction of Non- Verbal Communication
	12 th	Kinesics, Proxemics
4 th	13 th	Chronemics, Haptics, Paralanguage, Physical context, Symbols and Signs
	14 th	Barriers to Communication- Semantic , Psychological
	15 th	Personal, Physical and Mechanical
	16 th	Overcoming Strategies
5 th	17 th	Review of Communication
	18 th	A1
	19 th	Listening and Types of Listening
	20 th	Barriers and Traits
6 th	21 st	Improvement Techniques
	22 nd	Speaking Skills and Principles
	23 rd	Speaking Skills
	24 th	Speaking Skills
7 th	25 th	Paralanguage
	26 th	Reading
	27 th	Reading
	28 th	Reading
8 th	29 th	SQ3R
	30 th	Writing

	31st	Writing
	32nd	Writing
9th	33rd	Review
	34th	A2
	35th	Group discussion
	36th	Group discussion
10th	37th	Group discussion
	38th	Oral presentation
	39th	Oral presentation
	40th	Oral presentation
11th	41st	Job interview
	42nd	Job interview
	43rd	Review
	44th	A3
12th	45th	Technical letters
	46th	Technical letters
	47th	Review
	48th	A4
13th	49th	Job application and resume
	50th	Job application and resume
	51st	Job application and resume
	52nd	Review
14th	53rd	A5
	54th	Technical articles
	55th	Technical articles
	56th	Review
15th	57th	A6
	58th	Test
	59th	Test
	60th	Test

A1: Detailed note on Communication

A2: SQ3R Technique

A3: Interview Skills

A4: Write a letter to a candidate for appearing in an interview for the post of ‘Training Officer’

A5: Prepare your own resume in the prescribed format

A6: Article on any current topic

Lesson Plan

Name of the Faculty: Mr. Nitish Munjal (Theory & Practical)

Discipline: Department of Applied Sciences and Humanities

Semester: 2nd

Subject: Manufacturing Technology & Processes (ME-101N), Engineering Workshop (ME-107N)

Lesson Plan Duration: 15 Weeks (From January 2018 to April 2018)

Work Load (Lecture/Practical) per week (in hours): Lectures-04, Practicals-03

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1 st	1 st	Introduction of Subject	1 st	Workplace Layout, Safety Rules, Introduction to all shops.
	2 nd	Introduction to Manufacturing Processes		
	3 rd	Classification of Manufacturing Processes		
	4 th	Industrial Safety, Types of Accidents		
2 nd	5 th	Causes and Common Sources of Accidents	2 nd	To study different types of measuring tools used in metrology and determine least counts of vernier calipers, micrometers and vernier height gauges.
	6 th	Methods of Safety, First Aid.		
	7 th	REVISION		
	8 th	TEST		
3 rd	9 th	General Properties and Applications of Engineering Materials	3 rd	To study different types of machine tools (lathe, shape, milling, drilling machines)
	10 th	Mild Steel, Medium Carbon Steel, High Carbon Steel		
	11 th	High Speed Steel and Cast Iron		
	12 th	REVISION		
4 th	13 th	TEST	4 th	To prepare a job on a lathe involving facing, outside turning, taper turning, step turning, radius making and parting-off.
	14 th	Introduction to Casting Processes		
	15 th	Basic Steps in Casting Process		
	16 th	Pattern, Types of Patterns		
5 th	17 th	Pattern Allowances, Risers, Runners, Gates	5 th	To study different types of fitting tools and marking tools used in fitting practice.
	18 th	Moulding Sand and its composition		
	19 th	Sand Preparation, Molding Methods		
	20 th	REVISION		
6 th	21 st	TEST	6 th	To prepare lay out on a metal sheet by making and prepare rectangular tray, pipe shaped components
	22 nd	Core Sands and Core Making		
	23 rd	Assembly, Mold Assembly, Melting and Pouring, Fettling		
	24 th	Cupola Furnace.		

7 th	25 th	Casting Defects and Remedies	7 th	To prepare joints for welding suitable for butt welding and lap welding.
	26 th	REVISION		
	27 th	TEST		
	28 th	Introduction to Recrystallization & Difference between Hot & Cold Working		
8 th	29 th	Sheet Metal Operations, Measuring, Layout Marking, Shearing, Punching, Blanking, Piercing, Forming, Bending and Joining, Advantages and Limitations	8 th	To study various types of carpentry tools and prepare simple types of at least two wooden joints.
	30 th	Introduction to Hot Working, Principles of Hot Working Processes, Forging		
	31 st	Rolling		
	32 nd	Extrusion, Wire Drawing		
9 th	33 rd	REVISION	9 th	To prepare mold and core assembly, to put metal in the mold and fettle the casting.
	34 th	TEST		
	35 th	Plant Layout: Objectives of Layout		
	36 th	Types of Plant Layout and their Advantages		
10 th	37 th	REVISION	10 th	To study Cupola Furnace in Detail.
	38 th	TEST		
	39 th	Introduction to Machine Tools: Specifications and Uses of commonly used Machine Tools in a Workshop such as Lathe		
	40 th	Specifications and Uses of commonly used Machine Tools in a Workshop Milling, Drilling		
11 th	41 st	Introduction to Metal Cutting. Nomenclature of a Single Points Cutting Tool	11 th	To Explain different types of welding which is common in use.
	42 nd	Tool Wear. Mechanics of Chips Formations		
	43 rd	Type of Chips , Use of Coolants in machining.		
	44 th	REVISION		
12 th	45 th	TEST	12 th	REVISION
	46 th	Introduction to Welding, Classification of Welding Processes		
	47 th	Gas Welding: Oxy-Acetylene Welding		
	48 th	Resistance Welding; Spot and Seam Welding		
13 th	49 th	Arc Welding: Metal Arc, TIG & MIG Welding	13 th	REVISION
	50 th	Welding Defects and Remedies		
	51 st	Soldering & Brazing		
	52 nd	REVISION		

14 th	53 rd	TEST	14 th	REVISION
	54 th	P1		
	55 th	P2		
	56 th	P3		
15 th	57 th	P4	15 th	REVISION
	58 th	P5		
	59 th	P6		
	60 th	P7		

Assignments:-

A1: Manufacturing Processes & its classifications.

A2: Basic Process of Casting, Types of Pattern.

A3: Cupola Furnance.

A4: Casting defects and its remedies.

A5: Hot Working Processes.

A6: Plant Layout and its classification.

A7: Welding & its types:- Gas Welding, Arc welding, Resistance welding.

Presentations:-

P1: Manufacturing Processes & its classifications.

P2: Basic Process of Casting, Types of Pattern.

P3: Cupola Furnance.

P4: Casting defects and its remedies.

P5: Cold & Hot working operations.

P6: Plant Layout and its classification, Tool Nomenclature.

P7: Welding & its types:- Gas Welding, Arc welding, Resistance welding.

NAME OF FACULTY	:	Mr. Sonu							
DISCIPLINE	:	1st year							
SEMESTER	:	2nd							
SUBJECT	:	Electrical technology fundamentals							
LESSON PLAN DURATION	:	15 WEEKS (FROM JANUARY , 2018 TO APRIL, 2018)							
WORK LOAD (LECTURE/PRACTICAL)PER WEEK (IN HOURS) :					4 LECTURE, 3 PRACTICAL				
WEEK	THEORY				PRACTICAL				
	Lecture Day	Topic (Including Assignment/Test)			Practical Day	Topic			
1st	1st	Ohm's Law, junction & node			1st	To verify KVL and KCL.			
	2ND								
	3RD	circuit elements classification: Linear & nonlinear, active & passive, lumped & distributed, unilateral & bilateral with examples							
	4TH								
2nd	1st	KVL, KCL			2nd	To verify Superposition theorem on a linear circuit with at least one voltage & one current source.			
	2ND	Loop analysis of resistive circuit in the context of dc voltages & currents							
	3RD								
	4TH	Node-voltage analysis of resistive scircuit in the context of dc voltages & currents							
3rd	1st	Star-Delta transformation for set of pure resistors			3rd	To verify Thevenin's Theorem on a linear circuit with at least one voltage & one current source			
	2ND								
	3RD	Relevant D.C. circuit analytical problems for quantitative analysis.							
	4TH	Network Theorems: Superposition							
4th	1st	Thevenin's and Norton's theorems all in the context of dc voltage and current sources acting in a resistive network			4th	To verify Norton's Theorem on a linear circuit with at least one voltage & one current source			
	2ND								
	3RD	maximum power transfer theorem							
	4TH	Relevant D.C. circuit analytical problems for quantitative analysis.							
5th	1st	unit 1st test			5th	To study frequency response of a series R-L-C circuit on CRO and determine resonant frequency & Q-factor for various Values of R, L, and C			
	2ND	AC Fundamentals: Mathematical representation of various wave functions							
	3RD	Sinusoidal periodic signal, instantaneous & peak values,							
	4TH	polar & rectangular form representation of impedances & phasor quantities. impedances & phasor quantities.							
6th	1st	Addition & subtraction of two or more phasor sinusoidal quantities using component resolution method.			6th	To study frequency response of a parallel R-L-C circuit on CRO and			
	2ND								

	3RD	RMS & average values of various waveforms including clipped,		determine resonant frequency & Q - Factor for various values of R, L, and C.
	4TH	clamped, half wave rectified & full wave rectified sinusoidal periodic waveforms etc		
7th	1st	Generation of alternating emf (dynamo).	7th	To perform O.C. and S.C. tests on a single phase transformer
	2ND	Relevant analytical problems for quantitative analysis.		
	3RD	A.C. Circuits: Behavior of various components fed by A.C. source		
	4TH			
8th	1st	(steady state response of pure R, pure L, pure C, RL, RC	8th	To perform direct load test on a single phase transformer and plot efficiency v/s load characteristic
	2ND	RLC series with waveforms of instantaneous voltage		
	3RD	AC Fundamentals: Mathematical representation of various wave functions		
	4TH			
9th	1st	current & power on simultaneous real axis scale and corresponding phasor diagrams)	9th	To perform speed control of DC shunt motor
	2ND	P.F. active, reactive & apparent power		
	3RD	Frequency response of Series & Parallel RLC circuit including resonance		
	4TH	Q factor, cut-off frequency & bandwidth		
10th	1st	Relevant A.C. circuit analytical problems solutions using 'j-omega' operator method.	10th	To perform starting & reversal of direction of a three phase induction motor
	2ND			
	3RD	unit 2nd test		
	4TH	Balanced Three Phase Systems: Necessity & advantage of three phase system		
11th	1st	mode of generation of 3 phase supply. Phase and line voltages & currents, power	11th	Measurement of power in a 3 phase balanced system by two watt meter method
	2ND	Measurement of 3-phase power by two wattmeter method for various types of star & delta connected balanced resistive		
	3RD	inductive & capacitive loads including phasor diagrams at various power factors.		
	4TH	Phase sequence significance. Relevant problems for quantitative analysis.		
12th	1st	Laws of EMI, statically & dynamically induced emf, self & mutual induction	12th	To calibrate a single phase energy meter.
	2ND	dot notation, RH Screw rule, Fleming's RH & LH rules		
	3RD	MMF, Relation between magnetic flux, m.m.f. and reluctance		

	4TH	magnetic fringing. Hysteresis & Eddy current losses & their minimization						
13th	1st	Single Phase Transformer (Qualitative analysis only): Principle, construction & emf equation	13th	To study connections & working of fluorescent tube light				
	2ND	Phasor diagram for ideal case and at no load. Winding resistance & leakage reactance						
	3RD	Actual transformer at resistive, inductive & capacitive loads with phasor diagrams.						
	4TH	unit 3 test						
14th	1st	D.C. Machines: Principle, general construction & working						
	2ND	Split ring /Commutator working in DC generator & motor, generated emf equation						
	3RD	Types of DC Machines, speed control of DC Shunt motor						
	4TH	A.C. Machines: 3-phase Induction motor: Concept of rotating magnetic field, principle, types, general construction and working						
15th	1st	Synchronous Generator (alternator): Principle, general construction & working.						
	2ND	Synchronous motor: Principle, general construction & working.						
	3RD	General comparison between alternator & DC generator.						
	4TH	Unit 4 test						

NAME OF FACULTY	:	Ms. Monika Gautam							
DISCIPLINE	:	1st year							
SEMESTER	:	2nd							
SUBJECT	:	Basics of electronics engg.							
LESSON PLAN DURATION	:	15 WEEKS (FROM JANUARY , 2018 TO APRIL, 2018)							
WORK LOAD (LECTURE/PRACTICAL)PER WEEK (IN HOURS) :					4 LECTURE, 2 PRACTICAL				
WEEK	THEORY			PRACTICAL					
	Lecture Day	Topic (Including Assignment/Test)		Practical Day	Topic				
1st	1st	Semiconductor Diodes: Active Components (Current & Voltage Sources)		1st	Identification, Specifications, Testing of R, L, C Components (Colour Codes), Potentiometers, Switches (SPDT, DPDT and DIP), Bread Boards, Diodes, BJTs, JFETs, MOSFETs, Power Transistors, SCRs and LEDs.				
	2ND								
	3RD	Passive Electronic components (Resistors, Capacitors & Inductors)							
	4TH	concept of P-N diode							
2nd	1st	Diode Equivalent Circuits		2nd	Study the operation of Digital Multi Meter, Function / Signal Generator, Regulated Power Supply (RPS), Cathode Ray Oscilloscopes; Amplitude, Phase and Frequency of Sinusoidal Signals on CRO.				
	2ND	Load Line Analysis,							
	3RD	Diode as a Switch							
	4TH	Breakdown Mechanisms							
3rd	1st	Zener Diode: Operation and Applications		3rd	To study & perform the Experimental Verification of V-I characteristics of PN- diode in forward and reverse bias & study of various parameters of diode like threshold voltage and breakdown voltage etc.				
	2ND								
	3RD	Rectifiers: Half Wave							
	4TH	Full Wave Rectifiers,							
4th	1st	Photo Diode and Applications		4th	To study & perform the Experimental Verification of Half-Wave & Full-Wave Rectifier and calculate its ripple factor, efficiency and PIV				
	2ND								
	3RD	unit 1st test							
	4TH	Bipolar Junction Transistor:							
5th	1st	Different Types of Transistors,		5th	To study & perform the Experimental Verification of Zener Diode as a Voltage Regulator and calculate its parameters				
	2ND	basic operation of a transistor							
	3RD	Amplifying Action of BJT							
	4TH	Input and Output Characteristics of Common Base (CB),							
6th	1st	Common Collector (CC) and Common Emitter (CE) Configurations		6th	To study & perform the Experimental Verification of the input and output				
	2ND								

	3RD	Operating Point		characteristics of BJT in common-emitter configuration & calculate all its parameters			
	4TH	Transistor as a switch and amplifier					
7th	1st	Biasing: Fixed Bias, Self Bias	7th	To study & perform the Experimental Verification of Op-Amp as Inverting, NonInverting, Differential amplifier & calculate its Voltage gain.			
	2ND	Voltage Divider Bias					
	3RD	Concept of Feedback in amplifiers.					
	4TH	Advantages of negative feedback. Oscillators					
8th	1st	Oscillators:	8th	To study & perform the Experimental Verification of Summing and Difference amplifier & calculate its Voltage gain			
	2ND	Barkhausen criterion for oscillations					
	3RD	unit 2nd test					
	4TH	Operational Amplifier: Basic Block Diagram					
9th	1st	Equivalent Circuit	9th	To study & perform the Experimental Verification of the I-V characteristics of JFET and MOSFET & calculate all its parameters amplifier & calculate its Voltage gain			
	2ND	Characteristics of Ideal Op-Amp					
	3RD	Concept of Virtual Short					
	4TH	deal Op-Amp vs Practical Op-Amp					
10th	1st	Configurations of Op-Amp: Inverting, Non-Inverting	10th	Simulation of simple electronic circuits and analyzing its input and output waveforms using any of EDA tools			
	2ND						
	3RD	Differential filters,					
	4TH	Parameters of Op-Amp: Bandwidth, Slew Rate					
11th	1st	Gain, CMRR , PSRR, Input offset voltage, Output offset voltage					
	2ND						
	3RD	Op-Amp Applications: Summing and Difference Amplifiers					
	4TH	Integrator					
12th	1st	Differentiator					
	2ND	unit 3rd test					
	3RD	Special Semiconductor Devices					
	4TH	concept of n-MOSFET					
13th	1st	p-MOSFET and C-MOSFET					
	2ND	Operation and I-V Characteristics of enhancement					
	3RD	depletion MOSFET,					
	4TH	DIAC: Characteristics					
14th	1st	Operation and Applications					
	2ND						
	3RD	UJT: Characteristics					
	4TH	Operation and Applications					
15th	1st	TRIAC: Characteristics, Operation and Applications					

	2ND	SCR: Characteristics, Operation and Applications					
	3RD						
	4TH	Unit 4 test					