



G. H. Raisoni College of Engineering

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Department of First Year Engineering

Subject Wise Teaching Plan

Session: 2017-18

Course Title: Differential Calculus (Course Code: BAML101)

Teaching Plan

Lecture No.	Topic to be Covered
1	Discussion of Course Objective, Outcomes of M-I Syllabus
2	Matrices-I: Inverse of matrix by adjoint method. Solution of simultaneous equations by adjoint method.
3	Rank of matrix
4	Consistency of system of equations.
5	Consistency of system of equations.
6	TAE : 1 Chart Basic Formulae of Mathematics handwritten
7	Linear dependence.
8	Linear & orthogonal transformations.
9	Inverse of matrix by partitioning method.
10	Tutorial-1
11	Matrices-II : Characteristics equation.
12	Eigen values & Eigen vectors.
13	Reduction to diagonal form
14	Cayley Hamilton theorem (statement & verification).
15	Tutorial-2
16	TAE7: –Term work on MATLAB (Demonstration)
17	TAE7: –Term work on MATLAB ((Activity by students)

18	Sylvester's theorem
19	Association of matrices with linear differential equations of second order with a constant coefficients
20	Tutorial-3
21	TAE2: Online Objective Test
22	Sequence and Series: Convergence, Divergence and Oscillation of sequence
23	Infinite series, Geometric series , Convergence of series ,
24	Tests of convergence of series : Cauchy's integral test,
25	Comparison Test,
26	Ratio Test.
27	More problems TAE 3 –Home Assignment 1(Matrices-I, Matrices-II, Sequence and Series)
28	Differential Calculus: Successive differentiation.
29	Taylor's and Maclaurin series for one variable.
30	Tutorial-4
31	Taylor's and Maclaurin series for one variable.
32	Indeterminate forms
33	Indeterminate forms
34	Indeterminate forms
35	Tutorial-5
36	Curvature and radius of curvature
37	Curvature and radius of curvature
38	Centre of curvature.
39	Circle of curvature.
40	Tutorial-6
41	Partial Differentiation:
42	Functions of several variables

43	First and higher order derivatives,
44	First and higher order derivatives,
45	Tutorial-7
46	Euler's theorem
47	TAE5: Self Study/ Topic Review/ PPT/Video Lecture/ NPTL
48	Chain rules
49	Chain rules
50	Tutorial-8
51	Total differential coefficient
52	Total differential coefficient
53	Partial Differentiation (Jacobian): Jacobian
54	Jacobian
55	Tutorial-9 and TAE –Home Assignment2 (Differential Calculus, Partial Differentiation, Partial Differentiation (Jacobian))
56	Taylor's and Maclaurin series for function of two variables
57	Maxima and minima of function of two variables
58	Maxima and minima of function of two variables
59	Lagrange's method of undetermined multipliers.
60	Tutorial-10

S. R. Pidurkar

Subject Coordinator

Dr. B. P. Butey

Dean, First Year

Course Title: Integral Calculus (Course Code: BAML110)**Teaching Plan:**

Lecture No.	Topic to be Covered
1	Discussion of Course Objective, Outcomes of M-II Syllabus
2	Integral Calculus: Beta and Gamma function
3	Beta and Gamma function
4	Differentiation under integral sign
5	TAE 1: POSTER (On Cartesian and Polar Curves)
6	Tracing of curves (Cartesian and polar curves),
7	Quadrature
8	Volumes and Surface of solids of revolutions (Cartesian, polar and parametric forms).
9	Specific applications
10	Tutorial: 1
11	Multiple Integral: Introduction, Elementary double integrals,
12	Change of variables
13	Change of order of integration (Cartesian and polar),
14	Applications to mass,
15	Tutorial: 2
16	Applications to area, (Cartesian and polar)
17	Applications to volume (Cartesian and polar)
18	Applications to center of gravity (Cartesian and polar)
19	Elementary triple integrals,
20	Tutorial: 3
21	Specific applications for respective branch.
22	Differential Equations: First order first degree differential equations

23	Linear Differential Equations
24	Reducible to linear
25	Tutorial: 4
26	Exact differential equations
27	Higher order linear differential equations with constant coefficients
28	Higher order linear differential equations with constant coefficients
29	Method of variation of parameters
30	Tutorial-5 / TAE 3: Home Assignment 1 (Integral Calculus, Multiple Integral, Differentials)
31	Higher order linear differential equations with constant coefficients
32	Higher order linear differential equations with constant coefficients
33	method of variation of parameters
34	Differential Equations (Applications): Cauchy's homogeneous differential equations.
35	Tutorial-6
36	Legendre differential equations
37	Simultaneous differential equations
38	Special types of differential equations
39	Application of differential equations to electric circuits, Kinematics and vibrations (only up to second order).
40	Tutorial-7
41	TAE2: Online objective Test
42	Application of differential equations to electric circuits, Kinematics and vibrations (only up to second order).
43	TAE 7: MATLAB on Differential Equations , Simulink (Demonstration)
44	TAE 7:Term work on MATLAB (Activity by students)
45	Tutorial-8
46	Vector Calculus: Scalar triple product. Vector triple product,

	Differentiation of vectors
47	Gradient of scalar point function,
48	Directional derivatives
49	Divergence and Curl of vector point function
50	Tutorial-9
51	Solenoidal motion and irrotational motion.
52	TAE5: Self Study/ Topic Review/ PPT/Video Lecture/ NPTL
53	Vector Calculus (Integration):Vector integration , line surface
54	Volume integrals
55	Tutorial-10 , TAE 3: Home Assignment 2 (Differential Equations (Applications), Vector Differentiation, Vector Integration)
56	Stoke's theorem (without proof)
57	Gauss divergence theorem,
58	Green's theorem in plane
59	Green's identities and their simple applications
60	Specific applications for respective branch.

S.R.Pidurkar

Subject Coordinator

Dr. B. P. Butey

Dean, First Year

Course Title: Applied Physics (Course Code: BPHL102)

Teaching Plan:

Lecture No.	Topic to be covered
	ELECTRON BALLISTICS
1	Motion of charges in uniform parallel electric field, energy equation
2	Motion of charges in uniform electric field perpendicular and at an angle θ
3	Tutorial 1
4	Motion of charges in uniform parallel magnetic field and concept of constant energy, Motion of charges in uniform perpendicular magnetic field
5	Tutorial 2
6	Motion of charges in uniform magnetic field at an angle θ
7	Tutorial 3
8	Motion of charges in crossed fields, Electron optics : Bethe's law
9	Electrostatic lens
10	Cathode Ray Tube
11	Block diagram of CRO, Working of each block of CRO
12	Applications of CRO (TAE-3:- Home Assignment)
13	Tutorial 4
	LASER
14	Laser characteristics and Applications
15	Three Quantum Process : Absorption, spontaneous and stimulated emission of radiation
16	Population inversion, metastable state, active medium
17	Pumping and pumping schemes: Three and four level scheme
18	Optical resonator: working
19	Ruby laser : Construction and working

20	He-Ne Laser: Construction and working, applications of laser
21	Expressions for coherence length and coherence time (TAE- Article review)
22	Tutorial7
	WAVE OPTICS
23	Reflection, refraction, concept of division of amplitude, Interference in parallel thin films
24	Interference in non-uniform thin films: wedge shape and Newton's rings
25	Application of interference : Anti reflection coating, surface testing
26	Tutorial 5
27	Brewster's law, Malus law, optics axis, double reflection in Quartz prism
28	Quarter and half wave plate, Polarization and its types
29	Production and detection of linear, circular and elliptical polarizations (TAE-1- Quiz/ Aptitude test/ Extempore)
30	Application of polarization
31	Tutorial 6
	QUANTUM MECHANICS
32	Compton Effect ; concept, equations for conservation of momentum and energy, Compton shift equation, significance
33	Wave particle duality, De Broglie Hypothesis
34	De Broglie model of an atom justification for Bohr's postulate
35	Davisson and Germer Expt, wavelength calculations by Bragg's law and de broglie concept
36	Tutorial 8
37	Phase velocity, Group Velocity ,Concept of Wave Packet Heisenberg's Uncertainty Principle with significance
38	Heisenberg's Uncertainty Principle with significance
39	Wave Function and its probability interpretation [TAE-5 Seminar/PPT (Applications of Polarization, Interference, Laser, Semiconductor)]
40	Tutorial 9

41	Schrödinger's Wave equations: time dependent and time independent from time dependent
42	Infinite potential well, Eigen values and Eigen function,
43	Finite potential well: Tunneling, Quantum confinement
44	Tutorial 10 (TAE-2 Surprise test/ Numerical test/ Derivation test)
	SEMICONDUCTORS
45	Formation of energy bands in solids, Classification of solids into insulators, semiconductors and conductors
46	Fermi function and Fermi energy level,
47	intrinsic semiconductor
48	Energy band diagrams of silicon and germanium, band diagrams of carbon (diamond)
49	Tutorial-11
50	Extrinsic semiconductor, dependence of Fermi energy on temperature
51	Dependence of Fermi energy on doping concentration, derivation of law of mass action
52	Current conduction in semiconductor
53	Hall effect : concept, derivation of hall coefficient, Applications
54	Tutorial-12
55	p-n junction diode, diode rectifier equation
56	Zener diode, Avalanche and Zener break down mechanisms, LED
	ADVANCED TRENDS
57	Advanced trends in physics
58	Advanced trends in physics
59	Revision
60	Revision

Dr. V D Raut

Subject Coordinator

Dr B P Butey

Dean, FYBE

Course Title: Applied Chemistry (Course Section: BCHL103)**Teaching Plan:**

Lecture No.	Topic to be Covered
1	Water technology- Introduction
2	Purification of domestic water: screening, sedimentation coagulation
3	Purification of domestic water: Filtration, Sterilization
4	Concept of Hardness Scale of hardness units of hardness
5	Tutorial-1: Calculations of hardness
6	Softening Methods–Cold lime soda –Principle reactions process
7	Hot lime soda- Advantage over cold lime soda process, reactions process
8	Zeolite Process: Principle Process, limitation
9	Ion -Exchange Method: Principle Process, Advantages
10	Tutorial-2: Numerical on Zeolite
11	Boiler Trouble: Caustic Embrittlement, Boiler corrosion, Scale & Sludge Formation
12	Lime-Soda numerical - TAE- III
13	Internal Treatment Methods(Carbonate & Phosphate conditioning)
14	Internal Treatment Methods (Calgon & Colloidal conditioning)
15	Tutorial-3 : Lime-Soda numerical
16	Lime-Soda numerical: Purity Factor & Cost
17	Lubricants-Introduction & Mechanism: Hydrodynamic lubrication
18	Mechanism of lubrication: Boundary & Extreme-pressure lubrication
19	Types of Lubricants: Solid Lubricant: Ex. Graphite
20	Tutorial-4: Lime-Soda numerical: Raw Water & Treated Water
21	Semisolid Lubricants- Preparation & Properties of Greases
22	Emulsion & Synthetic lubricant
23	Properties of lubricant: Viscosity & V.I ,Cloud Point & Pour point
24	Properties of lubricant: Flash & Fire point, Aniline point
25	Tutorial-5: Lime-Soda numerical (Combine)

26	Criteria for selection of lubricant
27	Corrosion: Introduction, Theories of Corrosion, Atmospheric and Electrochemical Corrosion.
28	Differential aeration theory of corrosion & Factors Affecting Corrosion
29	Types of corrosion by PPT & Protection against Corrosion-Design & Material selection
30	Tutorial-6: Viscosity Index & Acid Value
31	Protection of Corrosion: Cathodic and Anodic protection
32	Advanced trends in Applied Chemistry: Ceramic materials
33	Types: Traditional & Advance
34	Properties of Ceramic Materials
35	Tutorial-7: Numerical' on Bomb Calorimeter
36	Applications of Ceramic Materials
37	Fuels & Combustion: Calorific value: GCV & NCV
38	Determination of calorific value by Bomb calorimeter
39	Determination of calorific value by Boys calorimeter TAE- VII
40	Tutorial-8 : Numerical on Boys Calorimeter
41	Significance of ultimate analysis, Pulverized Coal and Storage of Coal
42	Liquid fuel & fractional Distillation of Crude oil
43	Cracking: Fluid bed catalytic Cracking
44	Synthesis of Synthetic gasoline: Fischer-Tropsch Process
45	Tutorial-9: Combustion calculation
46	Knocking in Internal Combustion Engine
47	Alternative Fuels: LPG, CNG, Biodiesel, Gasohol, Aviation fuel
48	Introduction to combustion calculation
49	Battery Technology: Reversible and Irreversible batteries
50	Tutorial-10 : Combustion calculation
51	Construction & working of Dry Cell and Lead-Acid Battery, Lithium ion Battery
52	Construction & working of Ni & Cd
53	Environmental Chemistry: Environmental Chemistry

54	Green Chemistry
55	Tutorial-11: Combustion calculation
56	Carbon credit
57	Revision
58	Revision
59	Revision
60	Revision

Dr. R. R. Shrivastava
Subject Coordinator

Dr. B. P. Butey
Dean First Year

Course Title: Basic of Computing (Course Code: BITL104)**Teaching Plan:**

Lecture No.	Headings	Topic to be covered
1	Operating System	Introduction, Windows, Linux
2		Linux basic commands
3		Linux basic commands
4		Computer Networks: Introduction, Peer to peer connection
5		TAE-7 Mind Maps
6	C Fundamentals	Algorithm, Flowchart, Program development steps,
7		Basic structures of C language C tokens. Data types, Declaration of variables.
8		Assigning values, Arithmetic, Relational and logical operators.
9		Increment and Decrement operators. Control operators.
10		Expressions, Evaluation. I/O operations. If Else statement
11		SWITCH case statements.
12		WHILE, DO-WHILE
13		TAE-2 Code Execution Programming Examples under linux
14	Arrays, string & structure	One and Two Dimensional Arrays, Initialization, String variables,
15		Declaration, Reading, Writing, String handling functions,
16		User defined functions
17		Recursion, Preprocessor, Structure definition. Unions,
18		Initializing, Assigning values
19		Passing of structure as arguments,
20		storage classes.
21		TAE-1 Quiz/Activities
22	Enumerated Data	Enumerated data types, Renaming data types with type

	types	def()
23		Type casting
24		Bit wise operators
25	Pointers	Declaration and initializing pointers,
26		Pointer based expressions, Arrays, Strings.
27		goto and structures, C program examples.
28		TAE-3 Home Assignments
29	Functions	Functions with variable number of arguments
30		Dynamic memory allocation. Programming Examples.
31		pointer to pointer, Pointers to functions
32		Functions Returning pointers,
33	File management	File management in C,
34		Opening and closing
35		I/O operations on files.
36		Programming Examples TAE 5-PPT

Prof. N S Raote

Subject Coordinator

Dr. B P Butey

Dean First Year

Course Title: Basic Electronics (Course Code: BECL105)

Teaching Plan:

Lecture no.	Topic to be covered
1	Introduction of BJT and transistor action
2	BJT configuration CB, CE and CC mode with normal biasing
3	I/p O/p characteristics of transistor, DC load line and numerical
4	Single stage CE amplifier, i/p & o/p impedance
5	Practical amplifier biasing, RC coupled single stage CE amplifier,
6	Freq. response curve and band width
7	BJT as a switch, Revision on complete unit
8	Problems
9	Revision for BJT & its applications
10	Introduction to logic gates and their truth tables
11	Logic families: RTL logic for AND, OR, NOT gates
12	TTL logic for NAND gate, Properties of logic gates,
13	Boolean Algebra, Boolean Identities, D Morgan's Laws, Simplification of logical expressions
14	Implementation of expressions with basic gates and universal gates,
15	Sum of products & Product of Sums
16	Implementation of SOP on Karnaugh Map and solving techniques
17	Karnaugh Map continued, Quine Macklousky method
18	Number system Binary, Gray, Octal, Hex & ASCII codes,
19	Arithmetic Circuits-Adders, Subtractors, (Half & Full), revision on unit
20	Problems
21	Revision for Digital Electronics Fundamentals
22	Combinational circuits : Parallel adder, Fast adders (carry look ahead)
23	Multiplexers, Demultiplexers,

24	encoder, decoder,
25	Comparators, Sequential circuits : Flip flops : SR,
26	Clocked SR, D, JK
27	Registers : Shift register, Counters : binary counter, revision on unit
28	Problems
29	Nano Technology(Benefits of Nanotechnology, Memory and Storage)
30	Nano Technology(Benefits of Nanotechnology, Memory and Storage)
31	Revision for Combinational circuits
32	Revision for Combinational circuits
33	Revision for sequential circuits
34	Revision for sequential circuits
35	Revision for Nano Technology(Benefits of Nanotechnology, Memory and Storage)

Prof. T G Deotale

Subject Coordinator

Dr. B P Butey

Dean First Year

Course Title: Basic Electrical (Course Code: BEEL106)**Teaching Plan:**

Lecture No.	Topic to be covered
1.	Introduction to Subject
2.	D.C Circuit elements (Voltage, current, Resistance).
3.	Voltage source, current source (definition & characteristics), Electric Power
4.	Series – parallel connection, Star-delta transformation
5.	Star-delta transformation & Series – parallel numericals
6.	Kirchhoff's Laws, Superposition Theorem, Numericals
7.	Magnetic Circuit, flux, reluctance, Analogy with electric circuit series, parallel
8.	TAE-I
9.	Kirchhoff's Laws for Magnetic Circuit, Numericals on Series parallel ckts
10.	Superposition theorem & series parallel magnetic ckt numericals
11.	A.C. circuit, Periodic functions, RMS value, Avg. value, Definitions
12.	Introduction to Inductor, Capacitor with derivations (Relation between voltage and current)
13.	Impedance in series-parallel, Numericals
14.	Phasor representation for different circuits
15.	Numericals
16.	Principle of generation of 3-phase generation
17.	Impedance numericals
18.	3-phase voltage, Power in balanced in 3-phase ckt., TAE-II
19.	Electric measurement – ammeter & voltmeter, Electrodynamometer type wattmeter
20.	Electrodynamometer type wattmeter
21.	Induction type 1-phase wattmeter, Ext. of ranges
22.	TAE-III
23.	Basic Principle of 1 phase transformer, Types, emf Equation
24.	Ideal transformer, on –load transformer,
25.	Phasor dia. of transformer on load (unity, leading, lagging power factor)
26.	Equivalent ckt. of transformer, Numericals
27.	Numericals

28.	Losses in transformer, Efficiency, Regulation, Numericals
29.	losses, efficiency & regulation of transformer
30.	OC/SC tests and numericals
31.	TAE-V
32.	D.C. machines-Introduction, construction
33.	EMF & torque equation for generator and motor resp.
34.	Classification of D.C. Motor, generator with numericals
35.	EMF & torque equation & numerical for generator and motor
36.	EMF, Voltage, Current relations in generator, motor
37.	Characteristics of D.C. Motor
38.	Starting , speed control of D.C. motor with numericals
39.	Introduction to three phase induction motor, production of Rotating magnetic Field
40.	Construction, working of I.M., Slip,
41.	Torque equation, Slip-torque characteristics,
42.	Torque of I.M.
43.	Power stages in I.M., Numericals
44.	Introduction to single-phase Induction Motor.
45.	Advanced Topic on Energy Storage, revision

Prof. H S Dalvi

Subject Coordinator

Dr. B. P. Butey

Dean First Year

Course Title: Engineering Mechanics (Course Code: BCEL107)

Teaching Plan:

Lecture No.	Topic to be Covered
1	Fundamentals of Statics: Definition of mechanics, Body, Rigid Body, Scalar quantities, Vector quantities, Representation of vector, Fundamental Units, Derived Units, Particle, Mass, Weight, Fundamental principles of mechanics, Newton's law of universal gravitation
2	Equivalent Force System (2-D) : Concept of Force, Unit Newton force, System of force, Principle of transmissibility of force, Resolution and composition of coplanar force system,
3	Resultant, Equilibrant, Law of parallelogram of force, Triangle law, Polygon law, Moment of force, Varignon's theorem,
4	Couple and it's properties, Reduction of system of forces into a force couple system. Numericals on equivalent force involving co-planer force systems acting on body,
5	Numerical on Reduction of Force System into Single Resultant
6	Numericals on reduction of system of forces into a force couple system.
7	Equilibrium of Two Dimensional Force System: Force System: Concept of equilibrium, Principles of equilibrium, Equations of Equilibrium,
8	Exercise Class 1
9	Lami's theorem, Numericals on equilibrium involving co-planer force systems acting on body.
10	Beam: Beam, Simply Supported Beam, Overhanging Beam, Beam reaction, Types of load acting over beam i.e. Concentrated load, Uniformly distribute load (UDL), Uniformly varying load (UVL),
11	Types of support i.e. Simple support, Hinge support, Roller Support,
12	Exercise Class 2

13	Numerical on reaction of beam subjected to combination of loads.
14	Analysis of Truss: Perfect Frame, Imperfect frame, Deficient frame, Redundant frame,
15	Assumptions made in analysis of truss, Method of joints,
16	Exercise Class 3
17	Method of sections, Numericals on forces in the members of a truss
18	Numericals on forces in the members of a truss.
19	Numericals on forces in the members of a truss.
20	Exercise Class 4
21	Spatial Force System (Three Dimensional Force System) : Component of force in a space, Resultant spatial force system,
22	Force multiplier, Cartesian form of representation of vector,
23	Unit vector, Position vector, Displacement Vector, Scalar product or Dot product,
24	Exercise Class 5
25	Vector product or Cross product, Length of common perpendicular between two non intersecting vectors, Shortest distance,
26	Moment of force about point, Moment of force about axis, Moment arm of force about point,
27	Moment arm of force about axis, Resultant moment, Couple,
28	Exercise Class 6
29	Friction: Definition of friction, Types of friction, Angle of repose
30	Coulombs laws of dry friction, Analysis of rigid bodies on rough inclined surfaces, Numericals on friction
31	Numerical on friction
32	Exercise Class 7

33	Properties of Areas : Centroid of plane areas, Moment of Inertia of composite lamina, Radius of gyration,
34	Second moment of area, Parallel axis theorem, theorem,
35	Product of inertia, Perpendicular axis, Polar moment of inertia,
36	Exercise Class 8
37	Moment of inertia & product of inertia about new axes,
38	Principal moment of inertia and principal axis direction by analytical method only.
39	Virtual Work : Virtual Displacement, Definition of virtual work, Principles of virtual work
40	Exercise Class 9
41	Virtual work method applied to beams, frames & mechanisms
42	Numerical On Virtual Work
43	Impulse And Momentum : Linear impulse, Linear momentum, Momentum equation for a particle and a system of particles,
44	Exercise Class 10
45	Direct central impact, Coefficient of restitution. Numerical on impulse & momentum.
46	Numerical on impulse & momentum.
47	Advanced Topic
48	

Prof. S S Solanke

Subject Coordinator

Dr. B. P. Butey

Dean First Year

Course Title: Engineering Graphics (Course Code: BMEL108)

Teaching Plan:

Lecture No.	Topic to be covered
1	Use of various drawing instruments, lines, lettering and ISI standards for drafting. Simple geometrical construction.
2	Theory, techniques, first and third angle projections, multi view drawing from pictorial views. View in orthographic projections. Projection of points.
3	Projection of straight lines inclined to both reference planes.
4	Projection of plane figures such as triangle, quadrilateral, regular polygons circle, Plane inclined to both reference plane.
5	Video lectures (NPTL) on Projections of plane figure, how to draw true shape.
6	Projections of solids such as Prisms with varying position of axes with ground line.
7	Projections of solids such as pyramids with varying position of axes with ground line.
8	Video lecture on Projections of solids such as cone, cylinder with varying position of axes with ground line.
9	Section of solid such as Prisms, pyramids.
10	Video lecture on Section of solid such as cone, cylinder along with development of surfaces (in Practical lab)
11	Introduction to development of surfaces.
12	Conversion of pictorial view of solid to orthographic views.
13	Isometric projections
14	Video lecture on Isometric projections of various machine components
15	Definition of scale, Representative fraction, construction of various scales such as Plain, Diagonal, Comparative, Vernier, and Scale of Chords. Introduction to basic Engineering curves (conic sections)

Dr. S R Karale

Subject Coordinator

Dr. B P Butey

Dean First Year

Course Title: Communication Skill (Course Code: BHUL113)

Teaching Plan:

Lecture No	Topic to be covered
1	Co-Cubes Test on English Usage
2	Co-Cubes Test on English Usage
3	Orientation on Communication
4	Orientation on Communication
5	7 c's of communication, theory with Role play
6	7 c's of communication, theory with Role play
7	Poor listening habits; Traits of a good listener Theory & Role play(Listening Module)
8	Poor listening habits; Traits of a good listener Theory & Role play(Listening Module)
9	Vocab building Activity-Kangaroo Words
10	Vocab building Activity-Kangaroo Words
11	Extempore
12	Extempore
13	Speaking & Listening Clay-Model-Sculptor Activity
14	Speaking & Listening Clay-Model-Sculptor Activity
15	Chinese Whisper- Effective Communication skills
16	Chinese Whisper- Effective Communication skills
17	Word Association- Creative writing
18	Word Association- Creative writing
19	News Article Reading
20	News Article Reading
21	Story telling
22	Story telling

23	Book Review-Submission - Computer based (Typing)
24	Book Review-Submission - Computer based (Typing)
25	Book Review Elocution
26	Book Review Elocution
27	Book Review Elocution
28	Book Review Elocution
29	Presentation Skills
30	Presentation Skills
31	Maroon on the Island (Situational Analysis)- convincing skills
32	Maroon on the Island (Situational Analysis)- convincing skills
33	Aero plane Crash Activity (Situational Analysis)- convincing skills
34	Aero plane Crash Activity (Situational Analysis)- convincing skills
35	Abstract Writing Skills
36	Abstract Writing Skills
37	Essay on Current Topics & Writing professional emails - Computer based (Typing)
38	Essay on Current Topics & Writing professional emails - Computer based (Typing)
39	Essay on Current Topics & Writing professional emails - Computer based (Typing)
40	Essay on Current Topics & Writing professional emails - Computer based (Typing)
41	Business Letters – The 7 Cs of Letter Writing, structure of business letters, writing business letters – applications
42	Business Letters – The 7 Cs of Letter Writing, structure of business letters, writing business letters – applications
43	Vocab Diary

44	Vocab Diary
45	Pictorial Analysis (Typing)
46	Pictorial Analysis (Typing)
47	Word Pictionary
48	Word Pictionary
49	Word Pictionary
50	Word Pictionary
51	Panel Discussion(C N A)
52	Panel Discussion(C N A)
53	Voice Versant
54	Voice Versant
55	Voice Versant
56	Voice Versant
57	Revision
58	Revision

Prof. Yasmin Majeed

Subject Coordinator

Dr. B P Butey

Dean First Year

Course Title: Ethics Professional Competency (Course Code: BHUP111)**Teaching Plan:**

Lecture No.	Topic to be covered
1	Orientation & Self Introduction
2	Orientation & Self Introduction
3	Skit on social issues
4	Skit on social issues
5	Pranayam & Meditation
6	Pranayam & Meditation
7	Ethical Goal Setting
8	Ethical Goal Setting
9	Documentary on social values
10	Documentary on social values
11	Group Discussion on Ethical Issues
12	Group Discussion on Ethical Issues
13	SWOT Analysis
14	SWOT Analysis
15	Case Studies related to ethical issues
16	Ethics Research survey for self awareness(TAE) (Dr. Geoffrey Franz Theory - Charleston Campus)
17	Grooming and positive Body Language
18	Grooming and positive Body Language
19	Emotional Intelligence Techniques (Self Awareness and Mindfulness)
20	Emotional Intelligence Techniques (Self Awareness and Mindfulness)
21	Character building- Change Management (Situational Analysis)
22	Character building- Change Management (Situational Analysis)
23	(Social Issues) Aaj ki Adalat

24	(Social Issues) Aaj ki Adalat
25	Success Saga on Inspirational Icons
26	Success Saga on Inspirational Icons
27	Leadership Skills
28	Leadership Skills

Prof. R Meshkar

Subject Coordinator

Dr. B P Butey

Dean First Year

Course Title: Bio-Systems in Engineering (Course Code: BIDL 101)

Teaching Plan:

Lecture No.	Topic to be covered
1	Human physiology: Introduction
2	Basic of biology & human body structure, general properties of body
3	Nervous system: Central & Peripheral
4	Cardiovascular system
5	Advances in these fields
6	TAE- I : Poster Making
7	Human anatomy
8	Different anatomical structures
9	Skeletal structure
10	Bone structure
11	TAE-2:- Technical Presentation
12	Biomedical Instrumentation
13	Bio-imaging techniques, ECG, Computer aided ECG
14	X-Ray, MRI, CT Scan
15	Blood pressure measurement instrument, spirometry
16	TAE-3:- Bio Medical Instrumentation
17	Telemedicine
18	Introduction to telemedicine, History
19	Types & categories
20	Case studies
21	Benefits, Drawbacks & Future
22	TAE-4:- Case Study & procedures
23	Applications of Biomedical Engineering

24	Biomedical Signal Processing and Modeling
25	BMI, Biomaterials and Prosthetic Devices
26	Biomedical Image Processing

Prof. Sampada Wazalwar

Subject Coordinator

Dr. B P Butey

Dean First Year

Course Title: Workshop Practice (Course Code: BMEP 111)

Teaching Plan: Workshop on 3D Printing

Sr. No.	Topic to be covered
1.	Introduction to Additive Manufacturing - 3 D Printing and Computer aided design Software's – CATIA v5 &Creo Parametric 1.0
2.	2 D Sketching on CATIA v5 &Creo Parametric 1.0 - To prepare 2D geometrical model by using sketcher toolbar, entities and Views
3.	2 D Sketching on CATIA v5 &Creo Parametric 1.0 - To prepare 2D geometrical model using drawing constraint and modifying toolbars.
4.	3D Modeling on CATIA v5 &Creo Parametric 1.0 – To prepare part model using 2 D drawing and with basic extrusion tools. - Conversion of part file to .stl format
5	3D Modeling on CATIA v5 &Creo Parametric 1.0 - To prepare part model using Revolve command - Conversion of part file to .stl format
6	3 D Printing Slicing / Pre-processing - To pre-processed model for 3 D Printing using of Kisslicer/Cura 4.0 Software's
7	3 D Printing Slicing - Development of g.code by using Kisslicer/Cura 4.0 Softwares for 3 D Printing
8	3 D Printing – - Introduction to Fused deposition modeling technique - Introduction to FDM Machine and operating controls.
9	3 D Printing – - Development of prototype using additive manufacturing – 3 D Printing (FDM Based)

Workshop on Computer Hardware, Networking & troubleshooting

Sr. No.	Topic to be covered
1	BIOS/ mother board configuration
2	Assembling of Computer
3	Storage Devices/Types
4	Networking Commands/Networking Setup
5	Connection of PCs in LAN
6	Installation of Device Driver (Peripheral Devices) / OS
7	System protection from viruses, spyware, malware etc.

Workshop on Component Identification &Printed Circuit Board (PCB) fabrication

Sr. No.	Topic to be covered
1	Study of various electronic components, devices and testing the components
2	Layout design, circuit design using Orcad and Graph Paper
3	Steps involved in & PCB design and fabrication of small electronic project