BS1101 ENGINEERING MATHEMATICS - I

Teaching Scheme:	Examination Scheme:
Lectures: 3 Hrs/Week	In-Semester : 50 Marks
Tutorial: 1 Hr/Week	End-Semester: 50 Marks
Credits: 4	

Course Objectives:

Mathematics is a necessary path to scientific knowledge which opens new perspective of mental activity. Our aim is to provide sound knowledge of engineering mathematics to make the students think mathematically and strengthen their thinking power to analyze and solve engineering problems in their respective areas.

Course Outcomes:

1. Solve the system of Linear equations by using the matrix method and apply it to check Linear Dependence, Independence of the vectors.
2. Calculate eigen values, eigen vectors and apply it to diagonalize a matrix.
3. Analyze roots of algebraic equations by applying De Moivre's theorem and analyze the function of complex numbers .
4. Compute power series expansions by using higher order derivatives.
5. Calculate partial derivatives and use to analyze maxima, minima of a given function.

Unit – I: Matrices **(07)**

Matrices, Rank of the matrix, Echelon Form, Normal form, Inverse of the matrix,System of Linear Equations, Linear Dependence and Independence, Linear

Transformations, Rotation and Translation Matrices.

Unit – II: Applications of matrices **(06)**

Eigen Values, Eigen Vectors , Cayley Hamilton Theorem , Diagonalization and applications in finding powers of matrix.

Unit–III: Complex numbers and its applications **(08)**

Argand diagrams, De moivre's theorem and its applications, Hyperbolic Functions, Separation of real and imaginary parts of functions of complex numbers, Inverse Hyperbolic Functions, Logarithm of Complex Numbers.

Unit – IV: Differential calculus **(05)**

Successive Differentiation, Method of finding nth order derivative of functions, Leibnitz theorem, Taylor's series, Maclaurin's Series.

Unit – V: Partial Differentiation **(07)**

Partial Differentiation, chain rule, composite functions, Euler's theorem on homogeneous functions,Total derivatives .

Unit – VI: Jacobian and its applications **(08)**

Jacobian, Chain rule, Partial derivatives using Jacobian, Errors and Approximations, Maxima and Minima of functions of two variables, Lagrange's method of undetermined multipliers.

Text Books:

1. B.S. Grewal, **'Higher engineering Mathematics'**, *Khanna publishers, Delhi(*40th edition),(2008).
2. B. V. Ramana, **'Higher Engineering Mathematics ',** *Tata McGraw Hill Publications* (2007)
3. Erwin Kreyszig ,**'Advanced Engineering Mathematics'** *Wiley Eastern Ltd.*(8th Student Edition)(2004).

Reference Books:

1. C.R.Wylie, L.C. Barrette, **'Advanced Engineering Mathematics',** *McGraw Hill Publi-*

*cations, New Delhi.(*6th edition)(2003)
2. Peter V. O'neil,'**Advanced Engineering Mathematics'** ,Thomson Brooks / Cole, *Singapore (*5th edition) (2007).

BS1102 PHYSICS – I

Teaching Scheme

Lectures: 2 Hrs per week

Tutorial: 1 Hr per week

Credits: 3

Examination Scheme:

In-Semester : 50 Marks

End-Semester: 50 Marks

Course Objective:

1. To introduce undergraduate students Of engineering to the principles, notions, basic physical ideas, mathematical relations and applications of Classical Physics, specifically pertaining to the theories of Electromagnetic Radiation, Optics, Special Relativity
2. To point out some of the contexts in which Classical Physics fails to account for certain experimental observation thereby requiring Quantum Physics to take over

Course Outcomes:

By taking this course, the learner will be able to –

1: **Use** the laws of Electrostatics and Electromagnetic Radiation to determine the electric field dueto static and dynamic charge distributions.
2: Apply the laws of physical optics in situations involving interference, diffraction and polarization patterns.
3: Justify the use of the principles of special relativity in situations involving elementary particles.
4: Judge the relevance of quantum mechanical principles and methods in finding out interferometric behavior and allowed energy states of particles with arbitrary spins.

Unit – I: Electromagnetic Radiation and Interference: (4)

Expression for the electric field beyond Coulomb's law; The dipole radiator; Physics of interference – Two dipole radiator

Unit – II: Diffraction and Polarization: (4)

The resultant amplitude due to *n* equal oscillators; Diffraction Grating; The electric vector of light; Birefringence; Polarisers

Unit – III: Capacitance and Dielectrics: (4)

Electrostatic energy; Capacitance of a Parallel-Plate Capacitor; The dielectric constant; The polarization vector

Unit – IV: Special Relativity: (4)

The Lorentz transformation; Slowing of clocks; Contraction of length; Relativistic energy

Unit – V: Quantum Behaviour – I: Particles and Waves: (4)

Experiments with bullets, waves and electrons; The uncertainty principle

Unit – VI: Quantum Behaviour – I: The Magnetism of Matter: (4)

The Precession of atomic magnets; Angular momentum in Quantum Mechanics; The magnetic energy of atoms; Quantized magnetic states

Text Book:

R. P. Feynman, R. B. Leighton and M. Sands, **'The Feynman Lectures on Physics'**, *Pearson Education* (2006)

Reference Books:

1. J. Walker, D. Halliday, R, Resnick, **'Principles of Physics'**, Wiley *Student Edition* (10th Edition)

2. H. Young and Roger Freedman, **'University Physics'**, Pearson Addison Wesley (12th Edition)

BS1103 CHEMISTRY- I

Teaching Scheme: **Examination Scheme:**

Lectures: 2 Hrs/Week In-Semester: **50** Marks

Tutorial: 1 Hr/Week End-Semester: **50** Marks

Credits: 3

Course Objectives:

The Chemistry course is designed such that the learners develop a sound background of fundamental concepts and principles relevant in the engineering context. The course facilitates undergraduates to learn bonding theories, methods of analysis and evaluate role of chemical substances. They analyze chemical processes related to engineering applications. Also the course inculcates basic problem solving skills involving chemistry principles.

Course Outcomes:

1. State laws, formulae, definitions and properties.
2. Comprehend synthesis procedures and analytical methods in qualitative and quantitative estimation.
3. Apply principles of fundamental chemistry for solving problems.
4. Analyze chemical processes for engineering applications based on chemical reactions and evaluate the role of chemical substances.
5. Critique the effect of different parameters on the properties of chemical substance.

Unit – I: Chemical Bonding **(05)**

Types of bonds - primary & secondary types with examples, hybridization based on valence bond theory, VSEPR theory, molecular orbital theory with respect to bonding in homo and hetero nuclear diatomic molecules.

Unit – II: Water Analysis and purification **(06)**

Chemical Analysis of water hardness, alkalinity and effect of hard water in boilers, Internal

treatment of boiler feed water, water softening techniques (Permutit and Ion exchange method) and membrane based processes.

Unit – III: Electro chemistry **(06)**

(a) Fundamentals of an electrochemical cell, EMF of cell, reference and indicator electrodes, conductance in solution and conductometric titration.

(b) Battery Technology

Primary & secondary cell, battery characteristics, Ni-Cd cell, Lithium-ion battery, rechargeable batteries, Fuel cell technology.

Unit – IV: Instrumental methods of Analysis-I **(04)**

Basic principles,instrumentation and applications of pHmetry, Potentiometry, Chromatography

Unit – V: Coordination Chemistry **(05)**

Introduction,Classification of ligands, naming coordination compounds, Werner and Sidgwick theory, VBT, CFT for Td and Oh complexes. Applications and comparison of VBT & CFT.

Unit – VI: Photochemistry **(04)**

Photochemical reactions, Laws of Photochemistry and quantum yield, energy transfer in photochemical reaction, applications.

Text Books:

1. Arun Bahl & G.D. Tuli,**Essentials of Physical Chemistry,***S.Chand Publications* (2014)
2. S.S. Dara **'Engineering Chemistry'** *S. Chand Publications (2010)*
3. Puri, Sharma, Kalia **'Principles of Inorganic Chemistry'**: *Milestone Publications* (2009)
4. B.S. Chauhan **'Engineering Chemistry'** :*Univ Sc Press.*(third edition)2009
5. Shashi Chawla **'A Text Book Of Engineering Chemistry'**: *Dhanpat Rai & Co.*(2015)

6. Jain and Jain '**A Text Book Of Engineering Chemistry**' *Dhanpat Rai & Co.*
7. Gurdeep Chatwal **'Instrumental methods of Chemical Analysis'** *Himalaya publ.house*

Reference Books:

1. Steven S. Zumdahl, **‘Chemistry concepts and applications’,** *Cengage learning publication* (2009)
2. Ram D. Gupta,**'Hydrogen fuel'***C.R.C.Publications*(2009)
3. Puri, Sharma, Pathania **'Principles of Physical Chemistry'** *: Vishal Publ. Co.*(2015)
4. Robert D. Braun*' **Instrumental methods of analysis'** Pharmamed press* (2010)

ES1101 Basic Electrical and Electronics Engineering - I

Teaching Scheme: **Examination Scheme:**

Lectures: 3 Hrs/Week In-Semester: 50 Marks

Credits: 3 End-Semester:50Marks

Course Objectives:

1. To make students familiar with the fundamental concepts of electric and magnetic circuits.
2. To educate the students about the realization of basic theoretical concepts & laws in real physical world.
3. To educate the students about the construction and applications of diode
4. To educate the students about the construction and applications of BJT

Course Outcomes:

After completion of course, students will be able to

1) Determine energy consumption for electro-thermal and electro-mechanical systems as well as analyze the temperature effect on resistance
2) Analyze given magnetic circuit and find circuit parameters
3) Analyze given DC circuit and calculate its parameters
4) Calculate average value and RMS value of sinusoidal and non-sinusoidal AC waveforms.
5) Analyze I-V characteristics of semiconductor diodes and transistors and design simple analog circuits using these devices

Unit – I: Introduction to electrical systems (05)

Review of basic electrical terms, Effect of temperature on resistance, Resistance temperature coefficient, insulation resistance, Work, Power and energy calculations for thermal, mechanical and electrical systems.

Unit – II: DC Networks (07)

Kirchoff's laws, Mesh and Nodal Analysis, Thevenin , Norton and Superposition Theorems, maximum power transfer therom, Network Simplifications using star-delta / delta-star transformations.

Unit – III: Electromagnetism and Magnetic Circuits (06)

Magnetic field due to electric current, Force on a current carring conductor, Electromagnetic induction, direction and magnitude of induced EMF, magnetomotive force and magnetic field strength, relative and absolute permeability, reluctance, series and parallel magnetic circuits, magnetic materials and B-H curve, self and mutual inductance, coupling coefficient,energy stored in magnetic circuits.

Unit – IV: Electrostatics and AC fundamentals (06)

A. Electrostatic field, electric flux density, electric field strength, permittivity. Capacitor and capacitance, dielectric strength and breakdown voltage, capacitors in series and parallel,composite capacitors, energy stored in capacitors, charging and discharging of capacitors and time constant

B. Generation of alternating emf, waveform terms and definitions, average value and rms values for sinusoidal and non sinusoidal currents and voltages, phasor representation of an alternating quantity

Unit – V: Diodes and rectifiers (06)

Overview of Semiconductor physics and p-n junction theory, Junction diode, construction and characteristic of p-n junction diode, zener diode, LED, photodiode, Half wave, full wave and bridge rectifiers, need of capacitor filter, rectifier operation with capacitor filter, zener diode as a voltage regulator, block diagram of Regulated power supply

Unit – VI: Junction Transistor Amplifiers (06)

Bipolar junction transistor, Construction of BJT, Types of biasing:-fixed bias and self bias circuit, BJT characteristics for-CE,CB,CC configurations, relationship between α and β, load line for a transistor, application of transistor as a switch and amplifier.

Text Books:

1. Hughes, **'Electrical and Electronic Technology'**, *pearson education*, (9^{th} edition), (2009)

Reference Books:

1. D. P. Kothari and I.J. Nagrath, '**Basic Electrical Engineering**', *McGraw-Hill*, (3^{rd} edition), (2010)
2. A. E. Fitzgerald, A.Grabiel,'**Basic Electrical engineering**',*McGraw-Hill*, (5^{th} edition), (2009)
3. Floyd, '**Electronic Devices and Circuits**', *pearson education, (*7^{th} edition),(2008)

ES 1102 Fundamentals of Programming Languages - I

Teaching Scheme:
Lectures: 1 Hr/Week
Credits: 1

Examination Scheme:
In-Semester: 25 Marks

Course Objectives:

1. Learn the fundamentals of building blocks of computer.
2. Understand how to formulate the programming language statements from description of a problem in English.
3. Understanding of decision and iteration interpretation in a programming language.
4. Understand basic building blocks of simple website.

Course Outcomes:

Students will be able to

1. Write algorithm based on given problem statement
2. Draw flow chart for a given problem statement
3. Write the code for simple problem statement
4. Debug the code snippets manually

Unit – I: Introduction to Programming (02)

Introduction to computer, Anatomy of a computer: Hardware and software, Operating system, Types of programming languages: Machine language, Assembly language, High level languages, Selection of language, Algorithm: As a program, As a flow-chart, Pseudo code

Unit – II: Writing First C Program (02)

Structure of a C program, Writing C program, Introduction to library functions in C, Files generated in C program, Comments, Indentation

Unit – III: Variables and Operations (03)

C language variables: Numeric, Character, Declaring and Initializing variables, Constants: Integer, Floating point, Character, String Operators: Arithmetic, Relational, Equality, Logical, Unary, Conditional, Bitwise, Assignment, Comma, sizeof, Operator precedence variable scope: Local and Global scope, Type casting and conversion

Unit – IV: Control flow in C Language (03)

Conditional branching statements: if statements, if-else Statement, Switch case, Iterative statements: while loop, do-while loop, for loop, Nested loops, break and continue statements

Unit – V: Arrays (02) Introduction to Arrays, Accessing Array elements, Internal representation of Arrays in C, Working with one-dimensional array, Introduction to two-dimensional arrays

Unit – VI: Introduction to Website Development (02)

Introduction to blogging and WordPress : Creating a simple website, Content creation, Pages and Blogs, Page linking, Comments, Adding contents like Multimedia, Presentations, Themes

Text Books:

1. Reema Thareja, **'Introduction to C programming',** *Oxford University Press* (2nd edition), (2015)
2. Pradeep Day, '**Computer Fundamentals and programming in C'**, *Oxford University Press*, (2nd edition) (2013)

Reference Books:

1. B Kernighan, D Ritchie, '**C programming Language'**, *Prentice Hall Software Series*, (2nd edition) (1988)

ES1103 Engineering Graphics

Teaching Scheme: **Examination Scheme:**

Lectures: 2 Hrs/Week In-Semester: 25 Marks

Credits: 2

End-Semester: 25Marks

Course Objectives:

a) To apply theory of projections and standard conventions in engineering drawing.

b) To understand the methods to draw various engineering curves.

c) To develop the visualization and interpretation skills, for the physical objects.

d) To develop free hand sketching skills.

Course Outcomes:

After completing the course students will be able to draw

a) Orthographic projections of an object.

b) Engineering curves by applying the given method.

c) Isometric views and development of surfaces of the given object.

4. Free hand sketches of simple machine elements.

Unit – I: Introduction to Engineering Drawing (02)

Layout and sizes of drawing sheets, drawing instruments, types of lines used in drawing practice, dimensioning systems, representation of tolerances, standard codes by B.I.S (SP-46).

Unit – II: Curves in Engineering Practice (05)

Construction of ellipse, parabola, hyperbola, involute, cycloid, archimedean spiral, helix on cone and cylinder.

Unit – III: Orthographic Projections (08)

Theory of projections, methods of obtaining orthographic views,sectional orthographic projections.

Unit – IV: Isometric Projections (08)

Isometric axes, Isometric scale, isometric projections and views, construction of isometric view from given orthographic views.

Unit – V: Development of lateral surfaces of solids (05)

Parallel line development, radial line development, methods to transfer points for development of prisms, pyramids, cylinder and cone.

Unit – VI: Free hand sketching (02)

Free hand sketching of front view and/or top view of standard machine elements –thread forms, hexagonal headed bolt and nut, screws, shaft and keys, spring, welded and riveted joint.

Text Books:

1. N. D. Bhatt and V. M. Panchal,**'Engineering drawing, plane and solid geometry'**, *Charotor Publication House.*

a) R. K. Dhawan,**'A text book of Engineering Drawing'**, *Pearson Education Inc*.

b) P.S. Gill, **'Engineering Graphics'**, *Kataria and sons Publications.*

c) M.L.Dabhade, **'Engineering Graphics'**, *Vision Publications.*

Reference Books:

a) Warren J. Luzzader, **'Fundamentals of Engineering Drawing'**, *Prentice Hall of India, New Delhi.*

b) Fredderock E. Giesecke, Alva Mitchell, **'Principles of Engineering Graph-**

ics',*Maxwell McMillan Publishing.*

c) Dhananjay A. Jolhe, **'Engineering Drawing'**, *Tata McGrawHill Publishing Co. Ltd.*

ES 1104 Environmental Studies

Teaching Scheme:

Lectures: 2Hrs/Week

Tutorial: 1Hr/Week

Credits: 3

Examination Scheme:

In-Semester: 50 Marks

End-Semester: 50 Marks

Course Objectives:

1. It is an interdisciplinary approach to understand environment.
2. It enhances the ability to understand Environmental Problems.
3. Understand the relevance and importance of natural resources in the sustenance of life on earth and living standard.
4. To develop the ability and understand role of Individual in Environmental Protection

Course Outcomes:

A student should be able to obtain/develop:

1. Develop an understanding of environmental pollutions and hazards due to engineering/technological activities and general measures to control them.
2. Analyse the relationships between environmental laws across multiple sectors (local, state, national and international) Comprehend the importance of ecosystem and biodiversity.
3. Develop an understanding of different natural resources including renewable and non-renewable resources.

4. Identify suitable controlling measures for different types of solid wastes.

5. Improve fundamental knowledge of the inter-relationships between the built environment and natural environment.

6. Discuss an action plan for sustainable alternatives that integrate science, humanities and social perspective

Unit – I: Introduction (05)

Concept of environment and multidisciplinary nature of environmental studies:

a) Definition of Environment, multidisciplinary nature of Environmental Studies, scope, importance of Environment, Public awareness for Environment

b) Concept, Ecosystem characteristics:-Biotic abiotic, functional attributes

c) Energy flow in ecosystem: - Universal and single channel energy flow model, Nutrient Cycling:- Nitrogen cycle, carbon cycle, phosphorus cycle,

d) Concept of biodiversity

Unit – II: Integrated built environment (05)

d) Concept of integrated built environment – natural & man-made.

e) Eco-friendly materials in construction - Introduction, sources, Classification,properties and materials.

f) Principles of Building Planning: - Aspect, prospect, grouping, privacy, roominess, sanitation, orientation, circulation, elegance, economy.

g) Building bye laws (concept):- Building line, control line, set back distance, F.S.I., Built up area.

h) Concept of green building, advantages of green building, Introduction LEED rating system.

Unit – III: Renewable and Non- Renewable resources and it's Conservation (04)

f) Natural resources: Types of Renewable- Forest, water - causes of depletion, Conservation

g) Non-renewable resources, types, method of harnessing energy

Unit – IV: Environmental Pollution (05)

g) Introduction, Classification of pollution - Air and water - sources, causes, effects & remedial measures.

h) Solid waste generation, Collection of solid wastes, processing techniques, E- waste generation and methods of disposal.

i) Role of an individual in prevention of pollution.

Unit – V: Social Issues and Environment (05)

g) Unsustainable to sustainable development, urban problems related to energy, Climate change, global warming, acid rain, ozone layer depletion

h) Water conservation and Rain water harvesting

i) Introduction to Environmental Impact Assessment - Definition, introduction of methods with the help of a case study

j) Environment Protection Act, Forest Conservation Act, Public awareness.

Unit – VI: Smart City (03)

Concept and features of smart city, challenges of urbanization, selection process, strategy

Text books:

5. D.L. Manjunath, 'Environmental Studies', Pearson Education.

6. ErachBharucha, 'Text Book of Environmental Studies', UGC, Universities Press

Reference books:

5. D.K. asthana ,MeeraAsthana, ‘A Text Book Of Environmental Studies’,S.Chand.

6. Dr. J.P. Sharma, ‘Environmental Studies’,University Science Press.

7. Dr. Suresh K. Dhalmeja,‘Environmental Studies’,S.K.Kataria& Sons.

8. Anubha Kaushik, C.P.Kaushik, ‘Perspectives in Environmental Studies’,

New Age International Publishers.

9. Shah, Kale, Patki, ‘Building planning and Built environment’,

Tata McGraw Hill

10. Bukhootsow, ‘Energy policy and planning’,B- Prentice Hall of India New Delhi

BS1104 Physics and Chemistry Lab – I

Teaching Scheme	Examination Scheme
Practical: 2 Hrs/Week	In-Semester: 25
Credits: 1	

1: **Record** the observations as per the least counts of measuring instruments and carry out plotting and necessary calculations pertaining to the optical, electromagnetic and thermal systems.
2: Analyze the plotted data and experimental findings with the corresponding theoretical physical models pertaining to the optical, electromagnetic and thermal systems.
3: Analyze the sources of errors and arrive at conclusions pertaining to the behavior of optical, electromagnetic and thermal systems
4: Determine quality parameters of water such as hardness, alkalinity etc
5: Use of instrumental techniques in quantitative estimations like conductometry, pH metry, potentiometry.
6: Select appropriate quantitative analysis for estimation of different parameters of the substance.
7: Interpret the significance of a technique and specific role of reagent in qualitative and quantitative analysis.

List of Experiments:

Physics
1. Michelson Interferometer
2. Specific heat of substance
3. Hall Effect
4. Balmer Series and Emission Spectra
5. Zeeman Effect (Demo)

Chemistry
1. Qualitative & quantitative Analysis of alkali /alkaline earth metals using Flame Photometry.
2. Colorimetric verification of Beer-Lambert's law.
3. Determination of molecular weight of polymer using Ostwald Viscometer.
4. Proximate analysis of coal.

ES 1105 Basic Electrical and Electronics Engineering Lab-I

Teaching Scheme:	**Examination Scheme:**
Practical: 2 Hrs./Week	Practical Exam: 25 marks
Credits: 1	

Course Outcomes:

After completion of course, students will be able to

1. Perform basic domestic wiring
2. Apply circuit laws to find the parameters of given electrical network
3. Build a basic regulated DC power supply
4. Analyse the performance of Transistor in CE configuration
5. Write techinical report of conducted experiment

List of experiments:

1. Study of different electrical and electronics components and instruments.
2. To perform electrical wiring to control lamps using one way and two-way switches.
3. Determination of Temperature Rise of a Medium Resistance
4. Verification of kirchoff's laws & superposition theorems
5. Verification of Thevenin's theorem.
6. Performance analysis of half wave,full wave rectifier with center tap transformer and bridge rectifier with and without filter.
7. Performance analysis of three terminal IC voltage regulator
8. Determination of frequency responce of CE amplifier.

ES 1106 Fundamentals of Programming Languages Lab - I

Teaching Scheme:
Practical: 2 Hrs/Week
Credits: 1

Examination Scheme:
Practical: 25 Marks

Course Objectives:
Familiarize students with

1. Learn basics of C programming.
2. Learn to write C program for a given logical solution.
3. Learn to make validation checks at required places.
4. Learn to apply programming concepts to solve problems.

Course Outcomes:
Students will be able to

1) Write algorithm based on given problem statement
2) Apply appropriate programming constructs
3) Write program for simple problem statement
4) Test program for different inputs

Section 1 (any 08 assignments)

1. A) Write a C program to accept the length of three sides of a triangle and to test and print the type of triangle - equilateral, isosceles, right angled or none of these.

   B) Find out area, perimeter of a given trigonometric figure
2. Write a C Program to display the table of any given number
3. Write a C Program to reverse a given number
4. Write a C Program to find whether a given number is Armstrong number or not.
5. Write a C Program to calculate Simple Interest
6. Write a C Program to convert temperature from Celsius to Fahrenheit
7. Write a C program to display all the prime numbers between 1 to n
8. Write a C program to generate a series (like Fibonacci)
9. Write a C Program to display the numbers divisible by 7 in a given range(e.g. 11 to 90)
10. Write a C Program to accept a number and convert every digit into word and display it
11. Write a C Program for finding roots of Quadratic Equation
12. Write a C Program to find the greatest possible length which can be used to measure exactly the lengths 4m 95cm, 9m and 16m 65cm (Hint HCF)

Section 2 (any 02 assignments)

1. The traffic light at three different road crossings change after every 48, 72 and 108 sec, if they all change simultaneously at 8:20:00 hrs., then at what time will they again change simultaneously? (Hint : LCM)
2. The average of 25 results is 18. The average of first twelve of them is 14 and the average of last twelve of them is 17. Find the thirteenth result. (Hint Average).
3. The taxi fare is Rs. 14 for the first kilometer and Rs. 2 for each additional kilometer. What will be the

fare for 10 kilometers?(Hint: Arithmetic Progression)

4. Roma's mathematics test had 75 problems, i.e. 10 arithmetic, 30 algebra and 35 geometry problems. Although she answered 70% of the arithmetic, 40 %of algebra and 60% of geometry problems correctly she did not pass because she got less than 60% of the questions right. How many more questions she would have needed to solve to earn 60% of passing grade?(Hint Percentage.)
5. A radio is purchased for Rs. 490/- and sold for Rs.465.50. Find the loss percentage(Hint: Profit and Loss)
6. In how many ways can a cricket 11 be chosen out of a batch of 15 players?(Hint Permutation and Combination)
7. Write a C Program to accept a number and convert every digit into word and display it

Section 3 (study assignment)

Design and develop a small application using Wordpress

Text Books:

1. Reema Thareja, **'Introduction to C programming',** *Oxford University Press* (2nd edition), (2015)
2. Pradeep Day, '**Computer Fundamentals and programming in C'**, *Oxford University Press*, (2nd edition) (2013)

Reference Books:

1. B Kernighan, D Ritchie, '**C programming Language'**, *Prentice Hall Software Series*, (2nd edition) (1988)

ES1107 Engineering Graphics Lab

Teaching Scheme:

Practical: 2 Hrs/Week

Credit: 1

Examination Scheme:

Practical: 25 Marks

Course Objectives:

Students will be able to

1. Apply theory of projections and standard conventions in engineering drawing.
2. Understand the methods to draw various engineering curves.
3. Develop the visualization and interpretation skills for the physical objects.
4. Develop free hand sketching skills.

Course Outcomes:

After completing the course students will be able to

Identify applications of engineering curves and draw the curves.

Understand and draw orthographic projections and isometric views of an object.

Draw the development of lateral surfaces of solids.

Create free hand sketches of the machine elements.

I: Introduction to Engineering Drawing (01)

Drawing sheet layouts, drawing instruments, standard codes by B.I.S (SP-46)

II: Assignments and Drawing Sheets (12)

- Engineering Curves.
- Orthographic Projections
- Isometric Projections

- Development of surfaces of solids.
- Free hand sketching.

III: Introduction to computer aided drafting package (02)

Features and applications of computer aided drafting packages, basic operations, and various commands for drawing, dimensioning, editing, saving and plotting the drawings.

NC 1201 Value Education

Teaching Scheme: **Examination Scheme:**

Lectures: 1 Hr /Week In-Semester: Nil

Tutorial: Nil End-Semester: Nil

Credits: Nil

Course Objectives:

1. To make understand importance of values in human behavior.
2. To understand adjustments required in one self and others to uphold values in society.
3. To understand importance of values in Family Life.
4. To understand ethics required by professionals in work place.

Course Outcomes:

1. Students will appreciate importance of values in all walks of life.
2. To develop women professional with strong ethics and above all be a good human being.
3. To help students to develop their own value system and action plan based on it.
4. To understand the impact of the Moral role of students in nation building and being a responsible citizen.
5. Understand effects of Global issue like Terrorism, Environment, different cultures etc.

Unit – I: Values and Self Development (03)

Value Education – Definition - relevance to present day - Concept of Human Values - self introspection - Self esteem.

Unit – II: Family values (03)

Components, structure and responsibilities of family - Neutralization of anger - Adjustability- Threats of family life - Status of women in family and society - Caring for needy and el-

derly -

Time allotment for sharing ideas and concerns.

Unit – III: Ethical values (03)

Professional ethics - Mass media ethics- Advertising ethics -Influence of ethics on family life -
psychology of children and youth – Leadership qualities - Personality development.

Unit – IV: Social values (03)

Faith, service and secularism - Social sense and commitment -Students and Politics -Social awareness, Consumer awareness, Consumer rights and responsibilities - Redressal mechanisms

Unit – V: Effect of international affairs on values of life/ Issue of Globalization (03)

Modern warfare -Terrorism. Environmental issues - mutual respect of different cultures, religions
and their beliefs.

Text Books:

1. Chakraborty, S.K., **'Values and Ethics for Organizations Theory and Practice'**, *Oxford
University Press, New Delhi*, (2001)

Reference Books:

1. T. Anchukandam and J. Kuttainimathathil (Ed) 'Grow Free Live Free', ***Krisitu Jyoti***