PARUL UNIVERSITY - Faculty of Engineering and Technology

Department of Civil Engineering

SYLLABUS FOR 1st Sem BTech PROGRAMME

Elements of Civil Engineering (203104102)

Type of Course: BTech

Prerequisite: Knowledge of Physics and Mathematics upto 12th Science

Rationale: Basic Civil Engineering knowledge is essential for all engineers

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/	Lab Hrs/ Week		T	P	T	CE	P	
3	-	2	4	60	30	20	20	20	150

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**INTRODUCTION**: Branches of Civil Engineering, Scope of Civil Engineering, Role of Civil Engineer in Society, Impact of infrastructural development on economy of country.	5%	2
2	**SURVEYING**: Object and Uses of Surveying, Primary Divisions in Surveying, Fundamental Principles of Surveying, Classification of Surveying, Plans and Maps, Scales, Types of Graphical Scales, Units of Measurements	5%	2
3	**LINEAR MEASUREMENTS**: Methods of Linear Measurements, Instruments used in Chaining, Chain Surveying, Ranging, Obstacles in Chaining, Errors in Chaining & Corrections, Tape Corrections, Conventional Symbols	10%	4
4	**ANGULAR MEASUREMENTS**: Types of Compass, Method of Using a Compass, Bearing & It's Measurements, Whole Circle Bearing and Reduced Bearing, Computation of Angles, Types of meridians and bearings, Declination and DIP, Compass traversing and correction of bearings for Local Attraction, Chain and Compass Surveying Field Work	12%	5
5	**LEVELING**: Aims and applications, Definition of various terms, Instruments for leveling, Methods of leveling, Recording observations in level-book, Computing reduced levels by HI and rise & fall method,	12%	6

6	**MAPPING AND CONTOURING**: Mapping, Contours, Characteristics of contours of different terrains and application of contour maps, Methods of Contouring	6%	2
7	**MINOR EQUIPMENTS AND MODERN TOOLS OF SURVEYING**: Introduction to Theodolite,Electromagnetic Distance Measuring Instruments, Total Station,Global Positioning System, Remote sensing,Geographical Information System (GIS)	5%	2
8	**BUILDING PLANNING**: Elements of a Building, Basic Requirements of a Building Planning, Planning Suitable Orientation, Planning for Energy Efficiency, Planning for Suitable Utility, Planning for Meeting Other Requirements	5%	2
9	**FOUNDATIONS**: Importance and necessity of Foundation, Conventional Spread Footings, R.C.C. Footings, Grillage Footing, Arch Foundation, Pile Foundations, Foundations in Black Cotton Soil	8%	4
10	**SUPER STRUCTURES**: Types of Structures Based on the Method of Load Transfer, Building components and their functions and nominal dimensions.	7%	3
11	**DAMPNESS AND ITS PREVENTION**: Causes of Dampness, Ill effects of Dampness, Requirements of an Ideal Material for Damp Proofing, Materials for Damp Proofing, Methods of Damp Proofing	5%	2
12	**TRADITIONAL BUILDING MATERIALS**: Introduction, Types and Properties of Stones, Bricks, Lime, Cement, Timber	5%	3
13	**MORTARS**: Introduction, Properties of Cement Mortar, Lime Mortar, Mud Mortar, Special Mortar, Tests on Mortar	5%	2
14	**CONCRETE**: Introduction, Types and Properties of Plain Concrete, Reinforced Cement Concrete (R.C.C.), Reinforced Brick Concrete (RBC), Prestressed Concrete (PSC), Pre-cast concrete	5%	3
15	**MISCELLANEOUS BUILDING MATERIALS**: Introduction, Types and Properties of Glass, Plastics, Bitumen, Asbestos, Paints, Distempers, Varnishes, Solid and Hollow Concrete Blocks, Roofing and Flooring Tiles	5%	3

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Basics of Civil Engineering (TextBook)
   S S Bhavikatti; New Age International Publishers.

2. Surveying Vol. I
Dr. B. C. Punmia, Ashokkumar Jain, Arunkumar Jain; Laxmi Publication; 16th Edition
3. Surveying and Leveling
N. N. Basak; Tata McGraw Hill Education, Pvt. Ltd. New Delhi.
4. Elements of Civil Engineering
Dr. R.K. Jain and Dr. P.P. Lodha; McGraw Hill Education India Pvt. Ltd.
5. Building Construction
Dr. B. C. Punmia, Ashokkumar Jain, Arunkumar Jain; Laxmi Publicatons Delhi
6. Building Construction and Construction Material
G.S.Birdie and T.D. Ahuja; Dhanpat Rai Publishing

Course Outcome:

After Learning the course the students shall be able to:

1. Understanding of application and use of Civil Engineering in practical life.
2. Exposure to concepts of surveying and mapping.
3. Design small buildings and drawing plan and elevation.
4. Understand Global positioning system, remote sensing & GIS.
5. Understand construction materials
6. Understand building materials

List of Practical:

1. Introduction to Surveying instruments

2. Chaining and offset taking with the help of Chain and Tape

3. Compass Surveying

4. Simple Leveling with the help of Dumpy Level and Staff

5. Differential Leveling with the help of Dumpy level and Staff

6. Study of Theodolite

7. Study of Planimeter

8. Conventional Signs & Symbols in sketch Book

9. Plan, Elevation and section of simple Residential Building

10. Construction Site Visit

11. Different Types of Sketches of Sub structure and super structure in Sketch Book

PARUL UNIVERSITY - Faculty of Engineering and Technology

Department of Computer Science & Engineering

SYLLABUS FOR 1st Sem BTech PROGRAMME

Fundamentals of Programming (203105101)

Type of Course: BTech

Prerequisite: Requires Basic Knowledge of Computer

Rationale: This course is design to provide basic ideas of computer programming. This course also makes help to understand programming language. It will help to develop their logical abilities.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
2	0	4	4	60	30	20	20	20	150

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Number System**: Introduction and type of Number system, Conversion between number system, Arithmetic operations on number system, Signed and unsigned number system Software, Computer Languages and Computer Program	2%	1
2	**Introduction to 'C' Programming**: Features of C language, structure of C Program, Flow Charts and Algorithms Types of errors, debugging, tracing/stepwise execution of program, watching variables values in memory.	3%	2
3	**Constants, Variables and data Types**: Character Set, C tokens, Keywords and Identifiers, Constants, Variables, Data types, Declaration of Variables, Assigning values to variables, typedef, and Defining symbolic constants.	5%	2
4	**Operators and Expression**: Introduction to Operators and its types, Evaluation of expressions, Precedence of arithmetic operators, Type conversions in expressions, Operator precedence and associatively.	10%	2
5	**Management Input and Output Operators**: Introduction, reading a character, writing a character, formatted input, formatted output.	5%	2

6	**Control structure in C**: Decision Making & branching: Decision making with If &If .. Else statements, If .. Else statements (Nested …. Ladder), The Switch &goto statements, The turnery (?:) Operator Looping: The while statement, The break statement & The Do.. While loop, The FOR loop, Jump within loops – Programs	15%	3
7	**Array**: Introduction, One-dimensional arrays, Two-dimensional arrays, arrays, Concept of Multidimensional arrays.	10%	2
8	**String**: string , string storage , Built-in-string functions	10%	2
9	**User-Defined Functions**: Concepts of user defined functions, prototypes, definition of function, parameters, parameter passing, calling a function, recursive function, Macros, Pre-processing.	10%	4
10	**Structure and Unions**: Introduction, Structure definition, declaring and initializing Structure variables, Accessing Structure members, Copying & Comparison of structures, Arrays of structures, Arrays within structures, Structures within Structures, Structures and functions, Unions	10%	3
11	**Pointers**: Basics of pointers, pointer to pointer, pointer and array, Pointer to array, array of pointers , functions returning a pointer	10%	3
12	**Dynamic memory allocation**: Introduction to Dynamic memory allocation, malloc(), calloc(), free(), realloc()	5%	2
13	**File Management in C**: Introduction to file management and its functions	5%	2

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Programming in ANSI C (TextBook)
   E. Balaguruswamy; Tata McGraw-Hill
2. C Programming: Test Your Skills
   Ashok Kamthane
3. Computer Fundamentals
   P.K.Sinha and Priti Sinha; BPB Publications; 4th Edition
4. Programming with C
   Byron Gottfried; Tata McGraw Hill Education
5. C The Complete Reference
   Herbert Schildt
6. Let Us C
   Yashavant P. Kanetkar; Tata McGraw Hill

Course Outcome:

After Learning the course the students shall be able to:

1.Understand Concepts of computer programming language.
2.Develop the algorithms for solving Engineering problems.
3.Write, compile and debug programs with C compiler

List of Practical:

1. Practical Set 1 (Basics)

1. Write a program to print HELLO FRIENDS!
2. Write a program that reads two nos. from key board and gives their addition, subtraction, multiplication, division and modulo.
3. Write a program to calculate area of circle,use Ω as symbolic constants.
4. Write a program to convert days into months and days.
5. Write a program which calculates the summation of three digits from the given 3 digit number.
6. Write a program to demonstrate enumerates data type.
7. Write a program to compute Fahrenheit from centigrade.
8. Write a program to calculate simple interest.
9. Read the price of item in decimal form e.g. 12.50 and separate Rs and Paise from the given value e.g. 12 rupees and 50 paise.

2. Practical Set 2 (Control Structures)

1. Write a program to find the largest of the three nos. using Nested-If-Else statement.
2. Write a C program to enter a character and to check whether it is a small letter or it is a capital letter or it is a digit or it is a special symbol.
3. Write a program to read marks from keyboard and your program should display equivalent grade according to following table.

Marks	Grade
100-80	Dist
60-79	First Class
35-59	Second Class
0-34	Fail

4. Write a program to read marks of a student from keyboard whether the student id pass (if).
5. Write a program to find the sum of first N odd numbers.
6. Write a program using while loop construct which finds the factorial of a given integer number.
7. Write a C program using do…while and for loop constructs to reverse the digits of the number.
8. Write a program to demonstrate use of Switch- Break Statement.
9. Write a program to find out all the numbers divisible by 5 and 7 between 1 to 100.
   Check for Armstrong number. A number is Armstrong if sum of cube of every digit is same as the original number. E.g. 153=13+53+33=153
10. Write a program to print the output of bellow series. 1!+2!+3!+4!+……..n!
11. Write a program to print the following outputs using for Loop.

(a) 1
12
123

(b) *
**
***

12. Write a program to print the following outputs using for Loop.

(a) 1
21
321

(b) 321
21
1

3. Practical Set 3 (Array & Strings)

1. Write a program which sorts 10 numbers into ascending order.
2. Write a program to find maximum element from 1-D array.
3. Write a program to find number of odd and even elements from the 1-D array.
4. Write a program add two 2x2 matrices.
5. Write a program to count number of positive, negative and zero elements from 3x3 matrix.
6. Write a function for the following operations on string:

Copy one string to another

Comparing two strings

Adding a string to the end of another.

1. Write a program to count vowels from a entered String.
2. Write a program which finds whether a string is a palindrome or not.

4. Practical Set 4 (Functions)

1. Write a program to find factorial of a number using recursion.
2. Write a program that used user defined function Swap ( ) and interchange the value of two variable.
3. Write a function to return 1 if the number is prime otherwise return 0.

5. Practical Set 5 (Structures)

1. Define a structure type, personal that would contain person name, date of joining and salary.
2. Define a structure called cricket that will describe the following information:

Player name

Team name

Batting average

6. Practical Set 6 (Pointrs)

1. Write a program to add two numbers using pointers.
2. Write a program to swap two numbers using pointer.

7. Practical Set 7 (File Management)

1. Write a program to illustrate reading files contents.
2. Write a program to illustrate the use of fgets( ).

PARUL UNIVERSITY - Faculty of Engineering and Technology

Department of Mechanical Engineering

SYLLABUS FOR 1st Sem BTech PROGRAMME

Elements of Mechanical Engineering (203109102)

Type of Course: BTech

Prerequisite: Knowledge of Physics and Mathematics up to 12th Science Level.

Rationale: This course provides introduction to basic principles of Mechanical Engineering for the students of varied branches of Engineering

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
3	0	2	4	60	30	20	20	20	150

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**BASICS OF THERMODYNAMICS**: Prime Movers - Meaning and Classification; Concept of Force, Pressure, Energy, Work, Power, System, Heat, Temperature, Specific heat capacity, Internal Energy, Enthalpy, Specific Volume; Thermodynamics – Definition: Change of State, Path, Process, Cycle, Thermodynamic systems, Statement of Zeroth Law, First Law and Second Law of Thermodynamics and its Applications.	10%	5
2	**PROPERTIES OF GASES**: Gas Laws, Boyle's law, Charles law, Combined gas law; Gas Constant, Relation between Cp and Cv Constant Volume Process; Constant Pressure Process; Isothermal Process; Adiabatic Process; Poly-tropic Process. Examples based on above topics.	15%	6
3	**PROPERTIES OF STEAM**: Types of Steam and Steam formation; Specific Enthalpy; Specific Volume; Dryness Fraction of Steam; Measurement of Dryness Fraction; Steam Table. Examples based on above topics	15%	6
4	**HEAT ENGINES**: Definition of Heat Engine; Classification of Heat Engine; Carnot Cycle, Rankine Cycle, Otto Cycle and Diesel Cycle. **Internal Combustion Engines:** Two Stroke Petrol and Diesel Engine; Four Stroke Petrol and Diesel Engine; Measurement of Indicated Power and Brake Power: Numericals on calculation of Mechanical, Thermal and Volumetric Efficiency. **Examples based on above topics.**	20%	10

5	**ENERGY CONVERSION DEVICES**: **Steam Generators:** Definition and Classification; Cochran, Lancashire, Locomotive, Babcock and Wilcox Boiler: Construction and Working; Boiler Mounting and Accessories. ** **Refrigeration and Air Conditioning:** Meaning of Refrigeration; Vapor Compression Refrigeration Cycle; Vapor Absorption Refrigeration Cycle; Air conditioning; Window Air Conditioning and Split Air Conditioning.	20%	5
6	**PUMPS AND AIR COMPRESSORS**: **Pumps:** Definition, Classification and Application of Pumps; Types and Operation of Rotary pump, Reciprocating Pump, Centrifugal Pump. **Air Compressors:** Definition, Classification and Application of Compressors; Types and Operation of Rotary and Reciprocating Air Compressor.	10%	5
7	**MOTION AND POWER TRANSMISSION DEVICES**: Shaft and Axle; Belt Drive; Chain Drive; Friction Drive; Gear Drive; Clutch, Coupling and Brake	5%	3
8	**CONVENTIONAL AND NON CONVENTIONAL ENERGY SOURCES**: Introduction and Classification of Energy Sources; Conventional Energy Sources e.g. Solid, Liquid, Gaseous and Nuclear fuels; Calorific Value of Fuels; Non Conventional Energy Sources e.g. Solar Energy, Wind Energy, Hydel Power, Biomass and Biomass Energy; Comparison of Conventional & Non Conventional Energy Sources.	5%	3

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Elements of Mechanical Engineering
   S.B.Mathur, S. Domkundwar; Dhanpat Rai & Sons Publications.
2. Thermal Engineering
   R. K. Rajput; Laxmi Publication.
3. Thermal Science and Engineering
   Dr. D. S. Kumar; S. K. Kataria and sons Publishers.
4. Basic Mechanical Engineering
   T. S. Rajan; Wiley Eastern Ltd.
5. Fundamental of Mechanical Engineering
   G. S. Sawhney; PHI Publication New Delhi.
6. Elements of Mechanical Engineering
   Sadhu Singh; S. Chand Publisher.
7. Elements of Mechanical Engineering
   P.S.Desai, S.B. Soni; Atul Prakashan

Course Outcome:

After Learning the course the students shall be able to:

1. Demonstrate a basic understanding of the first and second laws of thermodynamics and its applications to systems.
2. Identify various nonconventional sources of energy.
3 Demonstrate a basic understanding of different types of internal combustion engines and their operations.
4. Demonstrate the ability to calculate Mechanical, Thermal and Volumetric Efficiency.
5. Demonstrate a basic understanding of different cycles of Refrigeration and Air-Conditioning.
6. Understand basic principles of power transmission devices.

List of Practical:

1. **Demonstration and study of construction and working of Petrol Engine Model.**

2. **Demonstration and study of construction and working of Diesel Engine Model.**

3. **Determination of brake thermal efficiency of an I. C. Engine.**

4. **Demonstration and study of construction and working of various types of boiler Models.**

5. **Study of construction and working of different boiler mountings and accessories.**

6. **Demonstration on construction and working of different types of pumps.**

7. **Demonstration on construction and working of different types of air compressors.**

8. **Demonstration on vapor compression refrigeration cycle and vapor absorption refrigeration cycle.**

9. **Demonstration on construction, working and applications of different types of coupling, clutch and brake.**

10. **Demonstration on construction, working and applications of motion and power transmission devices.**

PARUL UNIVERSITY - Faculty of Engineering and Technology

Department of Applied Science & Humanities

SYLLABUS FOR 1st Sem BTech PROGRAMME

Mathematics – I (203191101)

Type of Course: BTech

Prerequisite: Knowledge of Mathematics up to 12th science level

Rationale: To acquire fundamental knowledge and apply in Engineering discipline

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/ Week	Lab Hrs/ Week		T	P	T	CE	P	
3	2	0	5	60	-	20	20	0	100

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical

Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Bridge Course**: Hyperbolic and circular functions, Relation between roots and coefficients, reciprocal equations, transformation of equations and diminishing the roots, Types of Curves, Rolle's Theorem, Mean value theorems, Indeterminate forms and L' Hospital's rule, Maxima and Minima.	12%	6
2	**Improper Integral & Application of Definite Integral**: Evaluation of definite and improper integrals, Beta and Gamma functions and their properties Area bounded by curves in Cartesian and Polar form, Area of a region bounded by function, Area of a region bounded by curves in Parametric form, Volume by slicing, Volume of solid by revolution.	12%	6
3	**Complex Numbers**: Review of Complex Numbers, Geometric representation of Complex Number, Algebraic Operations on Complex Numbers, Properties of Complex Numbers, Modulus and Argument of Complex Number, De-Moivres' Theorem, Roots of Complex Numbers, Euler's Formula, Hyperbolic, Inverse Hyperbolic and Logarithmic function.	12%	6
4	**Sequences and Series**: Basic of Sequences, Bounded and Monotonic Sequences, Series, Convergence of sequence and series, Geometric series, P- series, Integral Test, Comparison Test, Alternating Series, Absolute and Conditional convergence, Ratio test, Root Test, Power series, Taylor's and Maclaurin's series.	17%	8

5	**Multivariable Calculus (Differentiation)**: Functions of Several Variables, Limit, Continuity, Partial Derivatives, Homogeneous function, Euler's Theorem for homogeneous function, Modified Euler's Theorem, Chain Rule, Implicit function, Jacobian, Tangent plane and Normal line, Maximum and Minimum Values, Lagrange's Multiplier, Taylor's and Maclaurin's Series for functions of two variables.	22%	10
6	**Matrices**: Matrices & Determinants with Properties, Linear Independence, Rank of Matrix, System of Linear Equations, Consistency of System, Solution of system of Linear Equations by Gauss Jordan and Gauss-Elimination Method, Eigen values, Eigenvectors, Symmetric, Skew-symmetric, and orthogonal Matrices, Eigenbases, Diagonalization, Cayley Hamilton Theorem and its Applications, Diagonalization, Orthogonal Transformation, Quadratic form.	25%	12

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Calculus and Analytic Geometry (TextBook)
   G.B. Thomas and R.L. Finney; Addison Wesley

Course Outcome:

After Learning the course the students shall be able to:

To acquire fundamental knowledge and apply in Engineering discipline

PARUL UNIVERSITY - Faculty of Engineering and Technology

Department of Applied Science & Humanities

SYLLABUS FOR 1st Sem BTech PROGRAMME

Engineering Physics (203192105)

Type of Course: BTech

Prerequisite: Knowledge of Physics and some basic concepts in Mathematics like differentiation, integration, limit, differential equation, vector calculus up to 12th science level.

Rationale: Knowledge of physics is essential for all Engineering branch because physics is the foundation subject of all the branches of engineering and it develops scientific temperament and analytical capability of engineering students. Comprehension of basic physics concepts enables the students to solve engineering problem logically and develop scientific approach.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/ Week	Tut Hrs/	Lab Hrs/ Week		T	P	T	CE	P	
3	0	2	4	60	30	20	20	20	150

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Contents:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Unit-1**: **Crystal Structures and X-Ray Diffraction:** Introduction -Space lattice - Basis - Unit cell - Lattice parameter - Bravais lattices – Crystal systems - Structure and packing fractions of Simple cubic, Body centered cubic and Face centered cubic crystals - Directions and planes in crystals – Miller indices - Separation between successive (hkl) planes - Diffraction of X-rays by crystal planes - Bragg's law - Powder method.	25%	10
2	**Unit-2**: **Lasers:** Introduction to interaction of radiation with matter, principles and working of laser: population inversion, pumping, various modes, threshold population inversion, types of laser: solid state, semiconductor, gas; application of lasers.	20%	8
3	**Unit-3**: **Fibre Optics:** Introduction, optical fibre as a dielectric wave guide: total internal reflection, numerical aperture and various fibre parameters, losses associated with optical fibres, step and graded index fibres, application of optical fibres	10%	5

4	**Unit-4**: **Semiconductors & Superconductors:**Semiconductors: Introduction - Intrinsic semiconductor and carrier concentrations – Equation for conductivity – Direct and Indirect band gap semiconductors - Drift and diffusion - Einstein's equation. Superconductors: General properties - Meissner effect - Type I and Type II superconductors – High Tc superconductors - Applications of superconductors.	20%	10
5	**Unit-5**: **Introduction to quantum physics**: black body radiation, explanation using the photon concept, photoelectric effect, Compton effect, de Broglie hypothesis, wave-particle duality, Born's interpretation of the wave function, verification of matter waves, uncertainty principle, Schrodinger wave equation, particle in box, quantum harmonic oscillator, hydrogen atom.	25%	12

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Fundamentals of Physics
   D. Halliday, R Resnick and J. Walker; Asian Books Pvt. Ltd
2. Engineering Physics
   R.K.Gaur and S.L. Gupta; Dhanpatrai & Co
3. Engineering Physics
   Avadhalula, M. N. & Kshirsagar, P. G; S CHAND

List of Practical:

1. LED Characteristic

To study the I-V characteristic of LED and determine Knee voltage and dynamic resistance of LED.

2. Zener diode characteristics

To study the reverse bias characteristics of a ZENER diode and determine its Breakdown voltage and dynamic resistance.

3. Velocity of ultrasonic waves

To measure the velocity of ultrasonic waves in water and determine the Compressibility of water.

4. Dielectric Constants

To determine Dielectric Constants of given dielectric samples.

5. Material constant of semiconductor

To determine material constant of semiconductor.

6. band gap of semiconductor

To determine band gap of semiconductor.

7. Hall Effect

To determine the Hall coefficient and charge carrier density of Semiconductor crystal.

8. Planck's constant

To determine Planck's constant using LED.

10. wavelength of LASER Light.

To determine the wavelength of LASER using diffraction of light.

10. Numerical Aperture

To Determine the Numerical Aperture of an Optical Fiber.

11. Particle size

To determine the size of lycopodium powder particle using the phenomena of Diffraction of light.

12. losses in Optical Fibers

To study various types of losses that occur in Optical Fibers (PMMA) and measure the loss in dB of two optical fiber patch-cords.

13. B-H curve

To trace the B-H curve for an iron core and to study the effect of varying the voltage and frequency of hysteresis loop.

14. Virtual Lab

Virtual Lab -1

15. Virtual Lab

Virtual Lab-2

PARUL UNIVERSITY - Faculty of Engineering and Technology

Department of CDC

SYLLABUS FOR 1st Sem BTech PROGRAMME

COMMUNICATION SKILLS - 1 (203193101)

Type of Course: BTech

Prerequisite:

Rationale: Basic Communication Skills are essential for all Engineers.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Scheme					Total
				External		Internal			
Lect Hrs/	Tut Hrs/ Week	Lab Hrs/		T	P	T	CE	P	
-	2	-	2	-	-	-	100	-	100

Lect - Lecture, **Tut** - Tutorial, **Lab** - Lab, **T** - Theory, **P** - Practical, **CE** - CE, **T** - Theory, **P** - Practical