

YEAR I
SEMESTER I

ENGINEERING MATHEMATICS I
BEG101HS

Semester : I

Year : I

Teaching Schedule Hours/Week			Examination Schedule						Total Marks	Remarks
			Final				Internal Assessment			
			Theory		Practical		Theory Marks	Practical Marks		
L	T	P	Duration	Marks	Duration	Marks				
3	1	-	3	80			20		100	

COURSE OBJECTIVES: The basic objective of the course is to provide a sound knowledge of vectors, 3-D analytical geometry, Infinite series and ordinary differential equations.

S.N	Chapter	Lecture Hours	Numbers of Questions	Marls
1	Limit and derivative, Tangent and Normal's, ,Higher Order Derivatives, Mean value theorem ,Indeterminate form ,Asymptotes, Maxima and Minima ,tracing of curves, Curvature ,Partial Differentiation and Maxima and Minima of two and tree variables.	17	6	30-5
2	Revision exercise ,Definite integral, reduction formula and Beta And Gamma Functions,Idea of simple curves ,	8	3	15-5
3	Quadrature,Rectification,Voplume and surface,Multiple integral(changing order of integration)	5	3	15-5
4	Scalar and Vector quantity, Scalar Product of three and four vectors, Vector of three and four vectors and lines and planes	7	4	20-5
5	Plane Analytic Geometry	8	4	20-5
6	Total	45	20(Four choice questions)	80

**BASIC ELECTRICAL ENGINEERING
BEG129 EL**

Semester: I

Year: I

Teaching Schedule Hours/Week			Examination Schedule						Total Marks	Remarks
			Final				Internal Assessment			
			Theory		Practical		Theory Marks	Practical Marks		
L	T	P	Duration	Marks	Duration	Marks				
3	1	3	3	80	-	-	20	25	125	-

Course Objective: To serve as the foundation course in Basic Electrical Engineering and make the students able to Analyze DC and AC circuits.

Unit 1. Basic Concept of DC Circuit

[8 hours]

- 1.1. Concept of electric charge and electric current
 - 1.1.1. Coulomb's law and electric field intensity
 - 1.1.2. Direct Current Vs Alternating Current
 - 1.1.3. Expression for Current & Current Density
 - 1.1.4. EMF and potential difference
- 1.2. Ohm's law
 - 1.2.1. Statement
 - 1.2.2. Application and Limitation
- 1.3. Electric network, circuit and circuit elements
 - 1.3.1. Network Vs circuit
 - 1.3.2. Circuit Elements
 - 1.3.2.1. Types of circuit elements
- 1.4. Characteristics of circuit elements
 - 1.4.1. Resistance
 - 1.4.1.1. Laws of resistance
 - 1.4.2. Color coding of resistors
 - 1.4.3. Temperature dependence of resistance
 - 1.4.4. Temperature coefficient of resistance and its temperature dependence
 - 1.4.5. Inductance and its mathematical description
 - 1.4.6. Capacitance and its mathematical description
- 1.5. Introduction to current and voltage sources
 - 1.5.1. Current source
 - 1.5.1.1. Ideal current source
 - 1.5.1.2. Practical current source
 - 1.5.2. Voltage source
 - 1.5.2.1. Ideal voltage source
 - 1.5.2.2. Practical voltage source

- 1.6. Series and Parallel connection
 - 1.6.1. Series and parallel connection of resistors
 - 1.6.2. Power and energy in series and parallel connected resistors
 - 1.6.3. Series/parallel connection of sources
- 1.7. Star/Delta Transformation
 - 1.7.1. Star and delta connection
 - 1.7.2. Importance of star/delta transformation
 - 1.7.3. Mathematical formulation of star to delta transformation and vice versa

Unit 2. DC Circuit Analysis

[15

hours]

- 2.1. Kirchhoff's laws
 - 2.1.1. KCL, its application and limitation
 - 2.1.2. KVL, its application and limitation
- 2.2. Mesh Analysis
 - 2.2.1. Introduction to loop, mesh, branch and loop currents
 - 2.2.2. Steps to be followed to use mesh analysis
 - 2.2.2.1. Special case- super mesh
 - 2.2.3. Application
- 2.3. Source conversion
 - 2.3.1. Conversion of voltage source into current source
 - 2.3.2. Conversion of current source into voltage source
- 2.4. Superposition theorem
 - 2.4.1. Statement
 - 2.4.2. Steps to be followed to use superposition theorem
 - 2.4.3. Significance and limitation
- 2.5. Nodal Analysis
 - 2.5.1. Introduction to node and junction, common reference
 - 2.5.2. Steps to be followed to use nodal analysis
 - 2.5.2.1. Special case-super node
 - 2.5.3. Application and limitation
- 2.6. Thevenin's theorem
 - 2.6.1. Statement
 - 2.6.2. Steps to be followed to use Thevenin's theorem
 - 2.6.3. Application and limitation
- 2.7. Norton's theorem
 - 2.7.1. Statement
 - 2.7.2. Steps to be followed to use Norton's theorem
 - 2.7.3. Application and limitation
- 2.8. Maximum power transfer theorem
 - 2.8.1. Statement
 - 2.8.2. Steps to be followed to use this theorem
 - 2.8.3. Application/significance and limitation
- 2.9. Reciprocity theorem
 - 2.9.1. Statement
 - 2.9.2. Steps to be followed to use reciprocity theorem
 - 2.9.3. Application and limitation

Unit 3. Single phase AC circuit analysis

[8

hours]

- 3.1. Alternating quantity and its associated terminologies
 - 3.1.1. Definition and Calculation of average value, rms value & form factor of different waveforms
- 3.2. Faraday's laws of Electromagnetic Induction
 - 3.2.1. Statically and dynamically induced emf
 - 3.2.2. Generation of sinusoidal EMF and current
- 3.3. j-operator and its use
- 3.4. Phasor representation of alternating quantities
- 3.5. Sinusoidal excitation on
 - 3.5.1. Pure resistor
 - 3.5.2. Pure inductor
 - 3.5.3. Pure capacitor
- 3.6. Power factor and complex power
 - 3.6.1. Power factor
 - 3.6.2. Complex power
 - 3.6.2.1. Real, reactive and apparent power
 - 3.6.2.2. Significance of real and reactive power
- 3.7. Sinusoidal excitation on
 - 3.7.1. Series R-L circuit
 - 3.7.1.1. Current and power in R-L circuit
 - 3.7.1.2. Waveforms and phasor
 - 3.7.2. Series R-C circuit
 - 3.7.2.1. Current and power in R-C circuit
 - 3.7.2.2. Waveforms and phasor
- 3.8. Series R-L-C circuit excited by sinusoidal source
 - 3.8.1. Resonance in R-L-C series circuit
 - 3.8.2. Resonance curve and its significance
 - 3.8.3. Bandwidth and quality factor
- 3.9. Introduction to step response of circuit
 - 3.9.1. R-L and R-C circuits excited by dc source
- 3.10. Disadvantages of low power factor
 - 3.10.1. Power factor improvement

Unit 4. Three Phase AC circuit

[6

hours]

- 4.1. Introduction to three phase system
 - 4.1.1. Difference between single phase and three phase
 - 4.1.2. Advantages of three phase system over single phase
- 4.2. Generation of three phase voltage
- 4.3. Star/delta connection
 - 4.3.1. Star and delta connection circuit
 - 4.3.2. Balanced and unbalanced system
 - 4.3.3. Balanced star connected system
 - 4.3.3.1. Relation between line and phase quantities
 - 4.3.4. Balanced Delta connected system

- 4.3.4.1. Relation between line and phase quantities
- 4.3.5. Choice of star/delta connection
- 4.4. Two wattmeter method of three phase power measurement
- 4.5. Introduction to three phase 4 wire system
 - 4.5.1. Basic configuration of lines and neutral
 - 4.5.2. Significance of three phase 4 wire system

Unit 5. Transformer

[8 hours]

- 5.1. Magnetic Circuit
- 5.2. Introduction to transformer
 - 5.2.1. Working principle of transformer
- 5.3. Ideal and practical transformer
- 5.4. Transformer operation
 - 5.4.1. No load operation
 - 5.4.2. Operation of transformer with load
 - 5.4.3. Equivalent circuit of transformer at no load and with load
- 5.5. Transformer losses and efficiency
 - 5.5.1. Condition for maximum efficiency
- 5.6. Voltage regulation of transformer
- 5.7. Transformer tests
 - 5.7.1. Polarity test
 - 5.7.2. Open circuit test
 - 5.7.3. Short circuit test
- 5.8. Transformer construction
 - 5.8.1. Core type and shell type transformer
 - 5.8.2. Air core and iron core transformer
- 5.9. Autotransformer
 - 5.9.1. Operating principle and circuit diagram
 - 5.9.2. Advantages and disadvantages
- 5.10. Instrument transformers
 - 5.10.1. Application
 - 5.10.2. Types of instrument transformers
 - 5.10.2.1. Current transformer
 - 5.10.2.2. Potential transformer

Reference Book:

1. SN Tiwarin and AS Gin Saroor, "A First Course in Electrical Engineering", AH Wheeler and Co. Ltd, Allahabad, India
2. BL Theraja and Ak Theraja, "A Text Book of Electrical Technology" S Chand and Company Ltd., New Delhi India
3. V Del Toro "Principles of Electrical Engineering", Prentice Hall of India Ltd. New Delhi
4. IJ Nagrath, "Basic Electrical Engineering", Tata McGraw Hill, New Delhi
5. PS Bhimbra, Electric Machinery, Khanna Publishers, New Delhi

Evaluation Scheme:

The questions will cover all the chapters of the syllabus. The evaluation scheme will be as indicated in the table below:

UNIT	Teaching Hours	Marks Allocated	Number of Questions*
1.	8	16-20	2-3
2.	15	28-32	3-4
3.	8	16-20	2-3
4.	6	8	1
5.	8	12-16	1-2
**Number of long questions:	Total		To be attempted
	6		Any 5

*Each question may be further divided into two or more sub questions (Note: numerical as well as theory type/short notes may be expected)

** Each long question carries 16 marks which are further divided into two or more questions.

INTRODUCTION TO COMPUTER AND PROGRAMMING

BEG180 CO

Semester I

Year I

Teaching Schedule Hours/Week			Examination Schedule						Total Marks	Remarks
			Final				Internal Assessment			
			Theory		Practical		Theory Marks	Practical Marks		
L	T	P	Duration	Marks	Duration	Marks				
3	1	3	3	60			20	20	100	

COURSE OBJECTIVE: To give the basic knowledge of computer system and problem solving skills using structured programming methodology.

1.0 INTRODUCTION TO COMPUTER: (3 hours)

- 1.1. Introduction to computer
- 1.2. Computer System
 - 1.2.1 Hardware
 - 1.2.2 Software
- 1.3. Function of Computer
- 1.4. Features of Computer
- 1.5. Generation of Computer.
 - 1.5.1 First to Fifth Generation
- 1.6. Block diagram of Computer
 - 1.6.1 Discussion on Input Device/ Output Device
 - 1.6.2. CPU
 - 1.6.3. Memory and its types
 - 1.6.3 Uses of Computer
 - 1.6.4 Computer network
 - 1.6.4.1 LAM,MAN,WAN
 - 1.6.5 Managing data and Information

2.0 INTRODUCION OF PROGRAMMING: (4 hours)

- 2.1. Introduction to Programming and Programming Languages
- 2.2. History of C
- 2.3. Introduction to C
- 2.4. Importance/ Advantages of C
- 2.5. Basic Structure of C Program
- 2.6. Desirable program characteristic
- 2.7. Introduction to compiler and interpreter
- 2.8. Problem Solving using Computer
 - 2.8.1 Problem analysis
 - 2.8.2 Algorithm development
 - 2.8.3 Flowchart
 - 2.8.4 Coding
 - 2.8.5 Compilation and Execution
 - 2.8.6 Debugging and Testing
 - 2.8.7 Documentation

3.0 DATA TYPES, OPERATORS AND SOME STATEMENT: (5 hours)

- 3.1. Character Sets
- 3.2. Identifiers & Keywords
- 3.3. Constant
 - 3.2.1.String Constant
 - 3.2.2.Numeric Constant

- 3.2.3.Character Constant
- 3.4. Symbolic Constant
- 3.5. Data Types
- 3.6. C Operators
 - 3.6.1 Arithmetic Operators (+, -, *, /, %)
 - 3.6.2 Assignment Operators
 - 3.6.3 Logical Operators
 - 3.6.4 Relational Operators
 - 3.6.5 Increment and Decrement Operators
 - 3.6.6 Bitwise Operators
 - 3.6.7 Special Operators
- 3.7. Arithmetic Expression
- 3.8. Operator Precedence and Associativity
- 3.9. Type Conversions in Expressions
- 3.10. Token in C

4.0 VARIABLES ,INPUTAND OUTPUT:

(4 hours)

- 4.1. Variable Declaration
- 4.2. The Scope of Variable
 - 4.2.1.Register Variable
 - 4.2.2.Static Variable
 - 4.2.3.External Variable
 - 4.2.4.Automatic Variable
- 4.3. Statements
- 4.4. Simple C programs
- 4.5. Input Statement
- 4.6. Output Statement
- 4.7. Feature of stdio.h

5.0 CONTROL STRUCTURE:

(5 hours)

- 5.1. Conditional Statements
 - 5.2.1.if statement
 - 5.2.2.if-else statement
 - 5.2.3.switch statement
- 5.2. Loop Statements
 - 5.2.1.for loop
 - 5.2.2.while loop
 - 5.2.3.do-while loop
- 5.3. Breaking Control Statements
 - 5.2.1.break statement
 - 5.2.2.continue statement
 - 5.2.3.go-to statement

6.0 ARRAY:

(4 hours)

- 6.1. One-Dimensional Array
 - 6.2.1.One-Dimensional Array Notation
 - 6.2.2.One-Dimensional Array Declaration
 - 6.2.3.One-Dimensional Array Initialization
- 6.2. Multidimensional Array
 - 6.2.1.Multidimensional Array Notation
 - 6.2.2.Multidimensional Array Declaration
 - 6.2.3.Multidimensional Array Initialization
 - 6.2.4.
- 6.3. Processing with one dimensional Array and Multidimensional Array
- 6.4. Array and Strings

- 7.0 FUNCTION:** (4 hours)
- 7.1. Defining Function
 - 7.2. Use of Function
 - 7.3. Types of Function
 - 7.3.1. User-defined and Library Functions
 - 7.4. Components Associated with Function
 - 7.5. Category Of functions According to return value and Arguments
 - 7.6. Different types of Function Calls
 - 7.7. Return Statement
 - 7.8. Recursive Function
 - 7.9. Concept of Local, Global and Static Variables
- 8.0 POINTER** (5 hours)
- 8.1. Introduction to Pointer
 - 8.2. Pointer Declaration
 - 8.3. Pointer initialization
 - 8.4. Pointer Arithmetic
 - 8.5. Void Pointer
 - 8.6. Null Pointer
 - 8.7. Pointer Function
 - 8.7.1. Passing Pointer to a Function
 - 8.8. Pointer & Array
 - 8.8.1. Array of Pointer
 - 8.8.2. Relationship between pointer and 1-D array
 - 8.9. Pointers to pointers
 - 8.10. Dynamic Memory Allocation
 - 8.11. Application Pointer
- 9.0 Structure and Unions** (4 hours)
- 9.1. Defining a structure
 - 9.2. Structure Initialization
 - 9.3. Arrays of Structures, Structures with in Structures
 - 9.3.1. Processing a Structure
 - 9.3.2. Structures Pointers
 - 9.3.3. Passing Structures to Functions
 - 9.3.4. Union and its importance
- 10.0 Data Files** (4 hours)
- 10.1. Introduction
 - 10.2. Opening and Closing a Data File
 - 10.3. File Opening Modes
 - 10.4. Library Functions for Reading /Writing from / To a File
 - 10.5. Creating a Data File
 - 10.6. End of File (EOF)
 - 10.7. Processing a Data File
 - 10.7.1. Record Input / Output
 - 10.7.2. Direct/ Random Access
- 11.0 Graphics** (3 hours)
- 11.1. Graphics Characteristics
 - 11.2. Initializing Graphics Hardware
 - 11.3. Graphical mode
 - 11.3.1. Closing Graphics Mode

11.4. Simple program using built in graphical function

11.4.1. Observation of Graphics Result

Reference Book:

- 1.0 "Let USC"; Yashavant Kanetker.
- 2.0 Programming with C; Gottfried
- 3.0 E.Balaguruswamy,"Programming in C",Tata McGraw –Hill.
- 4.0 E.Balaguruswamy "Graphic under C"
- 5.0 Textbook on C, Ramdatta Bhatta

Evaluation Scheme:

The questions will cover all the chapters of the syllabus. The evaluation scheme will be as indicated in the table below:

Chapters	Hours	Marks distribution
1	3	4-6
2	4	4-6
3	5	6
4	4	6
5	5	6
6	4	6
7	4	4-6
8	5	4-6
9	4	6
10	4	4-6
11	3	3-6
Total	45	60

Note: There will be one extra question on short notes which may be from any chapter/s.

PHYSICS (BEG103HS)

Semester I

Year I

Teaching Schedule Hours/Week			Examination Schedule						Total Marks	Remarks
			Final				Internal Assessment			
			Theory		Practical		Theory Marks	Practical Marks		
L	T	P	Duration	Marks	Duration	Marks				
4	1	2	3	80	3	30	20	20	150	

COURSE OBJECTIVES: To provide the concept and knowledge of physics with the emphasis of present day applications.

The background of physics corresponding to Proficiency Certificate Level/+2 is assumed.

Course Details

1.0 Simple Harmonic Motion:

- 1.1. Introduction of Simple harmonic motion,
- 1.2. Statement of Hooks Law and introduction of elastic restoring force
- 1.3. Characteristics of SHM and equation of SHM
 - 1.3.1. Eenergy of SHM
- 1.4. Examples of SHM:
 - 1.4.1Suspended mass spring system
 - 1.4.2 Physical pendulum (bar pendulum)
 - 1.4.2.1. Derivation of time period of bar prndulum
 - 1.4.2.2. Determination of Radius of gyration (K)
 - 1.4.2.3Point of suspension and oscillation are interchangebale
 - 1.4.2.4Minimum time period
 - 1.4.3Angular harmonic motion: Torsional Pendulum
 - 1.4.3.1Determination of Time period and frequency of Torsional Pendulum
 - 1.4.4 Introduction to damped, free and forced oscillation and resonance

2.0 Wave in Elastic Media:

- 2.1 Introduction of waves and particles,
 - 2.1.1 Types of waves; traveling wave and mechanical wave.
 - 2.1.2 Progressive wave equation
 - 2.1.2 Differential equation of wave motion
- 2.2. Wave velocity and particle velocity
- 2.3. Wave accleration and particle accleration
- 2.4. Wave Speed on a Stretched String (using Newton's second law).
- 2.5. Energy and power in traveling waves, intensity in wave motion.
- 2.6. Introduction of Principle of superposition and interference of waves.
- 2.7. Introduction of Standing waves and resonance.

3.0 Acoustics:

3.1 Sound waves, review on Sound propagation in gases, liquids and solid

3.1.1 The speed of sound in gaseous medium

3.2 Pressure variation due to waves: Traveling longitudinal waves and pressure amplitude

3.2.1 Power and Intensity of sound wave

3.3 Expression for Beat phenomena

3.4 Expression for The Doppler effect

3.5 Energy considerations,

3.5.1 Introduction of Intensity level and loudness.

3.6 Introduction of Ultrasound,

3.6.1 Introduction of production of ultrasound by magnetostriction and piezoelectric method

3.6.2 Its application in medical, distances measurement, imaging, signaling, cleaning, and heating

4.0 Electrostatics:

4.1 Review of Electric charge, Interaction between electric charges. Coulomb's law

4.2 Meaning of Electric field, electric field strength, lines of force and electric flux

4.2.1 Introduction of dipole and quadrupole

4.2.2 Calculation of electric field due to dipole and quadrupole

4.3 Statement of Gauss' law,

4.3.1 Application of Gauss Law :

4.3.1.1 Spherically symmetric charge distribution

4.3.1.2 Uniform linear charge distribution (long wire or rod)

4.3.1.3 planer symmetric charge (infinite sheet of charge)

4.4 Meaning of Electric potential, potential difference, potential due to a point charge, potential gradient

4.5 Potential due to dipole and quadrupole, electrostatic potential energy.

4.6.1 Introduction to Capacitors. Parallel plate capacitor and, spherical capacitor

4.6.2 Meaning of permittivity, conductors and dielectric

4.6.3 Gauss law and dielectrics and relation of electric field. E and D fields

4.6.4 Energy stored in electric field and energy density.

4.7 Brief introduction of Electrostatic induction, lightning conductors, industrial uses and hazards

5.0 Direct Current:

5.1 Review on Current flow, Ohm's law. Resistances in series and in parallel.

5.2 Meaning of Current and current density

5.2.1 Atomic view of resistivity

5.2.2 Equation related to effect of temperature on resistance

5.3.1 Introduction of Semiconductors: Intrinsic and extrinsic semiconductor,

5.3.2 Introduction of PN Junction, NPN & PNP transistor.

5.4 Short introduction for Energy loss, heat production, statement of joule's law

5.5 Statement of Kirchhoff's Laws.

6.0 Magnetism and Magnetic Fields:

6.1 Review on Source of Magnetic fields: Current and permanent magnets, earth's magnetic field, lines of force flux of magnetic field and permeability.

6.2.1 Statement of Biot and Savart's law and its application to long straight conductor carrying current.

6.2.2 Statement of Amperes theorem and its application to (i) long straight conductor carrying current and (ii) solenoid carrying current.

6.3.1 Meaning of Magnetic scalar potential and potential gradient.

6.4 Introduction to Force on conductor in magnetic fields, force per unit length between parallel conductors carrying current

6.5.1 Statement of Faraday's law of electromagnetic induction. and Flux linkage.

6.5.2 Statement of Lenz's law.

6.5.3 Self induction. Calculation of the coefficient of self-induction for solenoid.

6.6.1 Derivation for Rise and Decay of current in LR circuit and inductive time constant

6.6.2. Energy stored in magnetic field. Energy density of magnetic field.

6.7 Introduction to Magnetic properties of matter, Domain Theory, Ferromagnetism, Saturation and Hysteresis.

7.0 Electromagnetic Oscillations:

7.1 LC oscillations. Analogy to SHM

7.2 Electromagnetic oscillation of LCR circuit (quantitative) forced oscillation on LCR circuit and resonance

8.0 Electromagnetic Waves:

8.1 Introduction to gradient, divergence and curl; Induced magnetic field ; Displacement current and its significance

8.2 Maxwell's equation – Differential and integral form

8.3 Application of Maxwell equation: wave equations in free space and medium.

8.4.1 Speed of electromagnetic wave.

8.4.2 Energy of electromagnetic wave. and Poynting vector

9.0 Optics

9.1 Review on Nature and source of light, different theories of light, different types of sources.

9.2 Review of optics of lenses, refraction in spherical surfaces; refraction through prism.

9.3 Review on Combination of lenses in contact and at a separation, cardinal points,

Achromatic combination of two lenses, separated by distance

9.4 Introduction to Monochromatic aberration of lenses. Spherical aberration, astigmatism, coma, curvature of field and distortion. Causes and their minimization.

9.5.1 Fiber optics: Introduction to optical fiber. Types of optical fibers. Application in Illumination and Image transmission,

9.5.2 Uses in optical communication optical fiber sensors, medical and military application

9.6 Lasers: principle of the generation of laser light, Uses of laser: industrial and entertainment electronics, medical communication and information processing

10. Physical Optics:

10.1 Introduction to Interference, coherent sources, path difference and phase difference,

10.2 Meaning of Interference of light waves, Review of Young's experiment, condition for constructive and destructive interference,

10.3.1 Interference in thin films

10.3.2 Interference in wedge shape thin films

10.3.3 Newton's ring and determination of wave length, determination of refractive index of a liquid.

10.4.1 Introduction to Diffraction: Introduction to Fresnel's and Fraunhofer diffraction, Fraunhofer diffraction at a single slit.

10.4.2 Diffraction grating and application to wave length measurement by diffraction gratings; intensity variation in order.

10.5 Polarization: Introduction, polarization by reflection, Malus's law, double refraction, Nicol prism,

10.6 plane circular, elliptical polarization of light waves,

10.7 double refraction, quarter and half wave plate

10.8 Optical activity and uses, polarimeter.

10.9 Use of light: holography, LCD, signal transmission, optical stress analysis, spectrometric analysis of gases.

Laboratory: (Minimum 8 Experiments)(FM50 internal 20 an external 30)

1.0 Physical Pendulum, Torsional Pendulum

2.0 Resonance tube

3.0 Newton's Ring, Diffraction grating, prism

4.0 Carey Foster's Bridge, Low resistance, resistivity, LC Circuits

5.0 Polarimeter, Junction transistor

Recommended Books:

1.0 Physics by Resnick, Haliday, 2nd and 4th Edition.

2.0 A.S. Vasudeva, "Concept of Modern Engineering Physics", S. Chand & Co 1998, Delhi.

3.0 Subramanyam and Brij Lal, "Optics", S. Chand & Co. 1994, 1995, Delhi.

4.0 Practical Physics by CL Arora.

Evaluation Scheme:

There will be 6 question to be solved out of 10 Questions covering all the chapters in the syllabus. Each question carries 13/14 marks. The evaluation scheme for the questions will be as indicated in the table below:

Chapter	Group	Unit	Hour	Number of Questions	Questions to be solved	Mark distribution	Total Theoretical marks	Total Numerical marks
1	A	Simple Harmonic Motion	4	2	1	14 x 1=14	50	30
2		Wave in Elastic Media	5					
3		Acoustics	7					
4	C	Electrostatics	7	3	2	13x2=26		
5		Direct Current	6					
6		Magnetism and Magnetic Fields	10					
7	D	Electromagnetic Oscillations	3	2	1	14x1=14		
8		Electromagnetic Waves	5					
9	B	Optics	5	3	2	13x2=26		
10		Physical Optics	8					
Total			60	10	6	80	50	30