



Course covered up to 6 Oct. 2018 Report of BTECH ME

1FY2-01: Engineering Mathematics-I

Unit 1

Calculus: Improper integrals (Beta and Gamma functions) and their properties; Applications of definite integrals to evaluate surface areas and volumes of revolutions.

Unit 2

Sequences and Series: Convergence of sequence and series, tests for convergence; Power series, Taylor's series, series for exponential, trigonometric and logarithm functions.

Unit 3

Fourier Series: Periodic functions, Fourier series, Euler's formula, Change of intervals, Half range sine and cosine series, Parseval's theorem.

1FY2-02/ 2FY2-02: Engineering Physics

Unit 1

Wave Optics: Newton's Rings, Michelson's Interferometer, Fraunhofer Diffraction from a Single Slit. Diffraction grating: Construction, theory and spectrum, Resolving power and Rayleigh criterion for limit of resolution, Resolving power of diffraction grating, X-Ray diffraction and Bragg's Law.

Unit 2

Quantum Mechanics: Introduction to quantum Mechanics, Wave-particle duality, Matter waves, Wave function and basic postulates, Time dependent and time independent Schrodinger's Wave Equation, Physical interpretation of wave function and its properties, Applications of the Schrodinger's Equation: Particle in one dimensional and three dimensional boxes.

Unit 3

Coherence and Optical Fibers: Spatial and temporal coherence: Coherence length; Coherence time and 'Q' factor for light, Visibility as a measure of Coherence and spectral purity, Optical fiber as optical wave guide, Numerical aperture; Maximum angle of acceptance and applications of optical fiber.

1FY1-04/ 2FY1-04: Communication Skills



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Unit 1

Communication: Meaning, Importance and Cycle of Communication. Media and Types of Communication. Verbal and Non-Verbal Communication. Barriers to communication. Formal and Informal Channels of Communication (Corporate Communication). Divisions of Human Communication and Methods to improve Interpersonal Communication. Qualities of good communication.

Unit 2

Grammar: Passive Voice. Reported Speech. Conditional Sentences. Modal Verbs. Linking Words (Conjunctions).

Unit 4

Short Stories: "Luncheon" by Somerset Maugham. "How Much Land Does a Man Need?" by Count Leo Tolstoy. "The Night Train at Deoli" by Ruskin Bond.

1FY3-07/ 2FY3-07: Basic Mechanical Engineering

Unit 1

Fundamentals: Introduction to mechanical engineering, concepts of thermal engineering, mechanical machine design, industrial engineering and manufacturing technology. Steam Boilers classification and types of steam boilers and steam turbines. Introduction and Classification of power plants.

Unit 2

Pumps and IC Engines: Applications and working of Reciprocating and Centrifugal pumps. Introduction, Classification of IC Engines, Main Components of IC Engines, Working of IC Engines and its components.

Unit 3

Refrigeration and Air Conditioning: Introduction, classification and types of refrigeration systems and air-conditioning. Applications of refrigeration and Air-conditioning.

Unit 4

Transmission of Power: Introduction and types of Belt and Rope Drives, Gears.

1FY3-09/ 2FY3-09: Basic Civil Engineering



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Unit 1

Introduction to objective, scope and outcome the subject

Unit 2

Introduction: Scope and Specialization of Civil Engineering, Role of civil Engineer in Society, Impact of infrastructural development on economy of country.

Unit 3

Surveying: Object, Principles & Types of Surveying; Site Plans, Plans & Maps; Scales & Unit of different Measurements. Linear Measurements: Instruments used. Linear Measurement by Tape, Ranging out Survey Lines and overcoming Obstructions; Measurements on sloping ground; Tape corrections, conventional symbols. Angular Measurements: Instruments used; Introduction to Compass Surveying, Bearings and Longitude & Latitude of a Line, Introduction to total station. Levelling: Instrument used, Object of levelling, Methods of levelling in brief, Contour maps.

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