

B.Tech (ECE)	L	T	P	C
II Year - I Semester	3	1	0	4
NUMERICAL METHODS AND COMPLEX VARIABLES				

Pre-requisites: Mathematics courses in first year of study.

Course Objectives: To learn

- Expressing periodic function by Fourier series and a non-periodic function by Fourier transforms
- Various numerical methods to find roots of polynomial and transcendental equations.
- Concept of finite differences and to estimate the value for the given data using interpolation.
- Evaluation of integrals using numerical techniques
- Solving ordinary differential equations of first order using numerical techniques.
- Differentiation and integration of complex valued functions.
- Evaluation of integrals using Cauchy's integral formula and Cauchy's residue theorem.
- Expansion of complex functions using Taylor's and Laurent's series.

Course outcomes: After learning the contents of this paper the student must be able to

- Express any periodic function in terms of sine and cosine
- Find the root of a given polynomial and transcendental equations.
- Estimate the value for the given data using interpolation
- Find the numerical solutions for a given first order ODE's
- Analyze the complex function with reference to their analyticity, integration using Cauchy's integral and residue theorems
- Taylor's and Laurent's series expansions in complex function

UNIT-I: Fourier Series & Fourier Transforms:

Fourier series - Dirichlet's Conditions - Half-range Fourier series - Fourier Transforms: Fourier Sine and cosine transforms - Inverse Fourier transforms.

UNIT-II: Numerical Methods-I

Solution of polynomial and transcendental equations: Bisection method, Iteration Method, Newton-Raphson method and Regula-Falsi method. Jacobi and Gauss-Seidal iteration methods for solving linear systems of equations.

Finite differences: forward differences, backward differences, central differences, symbolic relations and separation of symbols, Interpolation using Newton's forward and backward difference formulae.

Central difference interpolation: Gauss's forward and backward formulae, Lagrange's method of interpolation.

UNIT-III: Numerical Methods-II

Numerical integration: Trapezoidal rule and Simpson's 1/3rd and 3/8th rules.

Ordinary differential equations: Taylor's series, Picard's method, Euler and modified Euler's methods, Runge-Kutta method of fourth order for first order ODE.

UNIT-IV: Complex Differentiation

Limit, Continuity and Differentiation of Complex functions. Cauchy-Riemann equations

(without proof), Milne- Thomson methods, analytic functions, harmonic functions, finding harmonic conjugate, elementary analytic functions (exponential, trigonometric, logarithm) and their properties. (All theorems without Proofs), Conformal mappings, Mobius transformations.

UNIT-V: Complex Integration:

Line integrals, Cauchy's theorem, Cauchy's Integral formula, zeros of analytic functions, singularities, Taylor's series, Laurent's series, Residues, Cauchy Residue theorem and their properties. (All theorems without Proofs)

Text Books:

1. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, 36th Edition, 2010.
2. S.S. Sastry, Introductory methods of numerical analysis, PHI, 4th Edition, 2005.

Reference Books:

1. M. K. Jain, S.R.K. Iyengar, R.K. Jain, Numerical methods for Scientific and Engineering Computations, New Age International publishers.
2. Erwin Kreyszig, Advanced Engineering Mathematics, 9th Edition, John Wiley & Sons, 2006.
3. J. W. Brown and R. V. Churchill, Complex Variables and Applications, 7th Edition, Mc-Graw Hill, 2004.

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ANALOG CIRCUITS**Course Objectives:**

- Learn the concepts of, load line analysis and biasing techniques
- Learn the concepts of high frequency analysis of transistors.
- To give understanding of various types of amplifier circuits
- Learn the concepts of small signal analysis of BJT and FET
- To familiarize the Concept of feedback in amplifiers so as to differentiate between negative and positive feedback.

Course Outcomes: Upon completing this course, the students will be able to

- Acquire basic knowledge of physical and electrical conducting properties of semiconductors.
- Develop the Ability to understand the design and working of BJT / FET amplifiers.
- Design amplifier circuits using BJT s And FET's. and observe the amplitude and frequency responses of common amplifier circuits
- Observe the effect of negative feedback on different parameters of an Amplifier and different types of negative feedback topologies.
- Observe the effect of positive feedback and able to design and working of different Oscillators using BJTS.

UNIT - I: BJT Biasing

Transistor Biasing and Stabilization - Operating point, DC & AC load lines, Biasing -Fixed Bias, Self Bias, Bias Stability, Bias Compensation using Diode

Analysis and Design of Small Signal Low Frequency BJT Amplifiers: Transistor Hybrid model, Determination of h-parameters from transistor characteristics, Typical values of h-parameters in CE,CB and CC configurations, Transistor amplifying action, Analysis of CE, CC, CB Amplifiers and CE Amplifier with emitter resistance, low frequency response of BJT Amplifiers, effect of coupling and bypass capacitors on CE Amplifier.

UNIT - II: FET- Biasing Techniques

FET Amplifiers: Analysis of CS, CD, CG JFET Amplifiers, comparison of performance with BJT Amplifiers, Basic Concepts of MOSFET Amplifiers, MOS Small signal model, Common source amplifier with resistive, Diode connected and Current source loads, Source follower, Common Gate Stage, Cascode and Folded Cascode Amplifier – frequency response.

UNIT - III: Multistage Amplifiers:

Classification of Amplifiers, Distortion in amplifiers, Different coupling schemes used in amplifiers, Frequency response and Analysis of multistage amplifiers, Cascade RC Coupled amplifiers, Cascode amplifier, Darlington pair.

Transistor at High Frequency: Hybrid - model of Common Emitter transistor model, f_{α} , f_{β} and unity gain bandwidth, Gain-bandwidth product.

UNIT - IV:Feedback Amplifiers:

Concepts of feedback – Classification of feedback amplifiers – General characteristics of

Negative feedback amplifiers – Effect of Feedback on Amplifier characteristics – Voltage series, Voltage shunt, Current series and Current shunt Feedback configurations – Simple problems. transition count testing, signature analysis and test bridging faults.

UNIT - VOscillators:

Condition for Oscillations, RC type Oscillators-RC phase shift and Wien-bridge Oscillators, LC type Oscillators –Generalized analysis of LC Oscillators, Hartley and Colpitts Oscillators, Frequency and amplitude stability of Oscillators, Crystal Oscillator.

Text Books:

1. Jacob Millman, Christos C Halkias -Integrated Electronics, McGraw Hill Education.
2. Robert L. Boylestead, Louis Nashelsky -Electronic Devices and Circuits theory, 11th Edition, 2009, Pearson.

Reference Books:

1. David A. Bell – Electronic Devices and Circuits, 5th Edition, Oxford.
2. Adel S. Sedra, Kenneth C. Smith- Microelectronic Circuits- Theory and Applications, Oxford.
3. Chinmoy Saha, Arindam Halder, Debaati Ganguly -Basic Electronics-Principles and Applications, 2018, Cambridge.

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NETWORK ANALYSIS AND SYNTHESIS**Course Objectives:**

1. To understand the basic concepts on RLC circuits.
2. To know the behaviour of the steady state and transient states in RLC circuits.
3. To understand the two port network parameters.
4. Learn the design concepts of various filters and attenuators

Course Outcomes: Upon successful completion of the course, students will be able to:

1. Gain the knowledge on basic RLC circuit's behaviour.
2. Analyze the Steady state and transient analysis of RLC Circuits.
3. Know the characteristics of two port network parameters.
4. Analyse the Design aspect of various filters and attenuators
5. Synthesize LC, RC and RL Functions by foster and causer methods

UNIT - I: Network Topology:

Basic cutset and tie set matrices for planar networks, Magnetic Circuits, Self and Mutual inductances, dot convention, impedance, reactance concept, Impedance transformation and coupled circuits, co-efficient of coupling, equivalent T for Magnetically coupled circuits, Ideal Transformer.

UNIT - II: Transient and Steady state analysis

RC, RL and RLC Circuits, Sinusoidal, Step and Square responses. RC Circuits as integrator and differentiators. 2nd order series and parallel RLC Circuits, Root locus, damping factor, over damped, under damped, critically damped cases, quality factor and bandwidth for series and parallel resonance, resonance curves.

UNIT - III: Two port network parameters

Z, Y, ABCD, h and g parameters, Characteristic impedance, Image transfer constant, image and iterative impedance, network function, driving point and transfer functions – using transformed (S) variables, Poles and Zeros. Standard T,N, L Sections, Characteristic impedance, image transfer constants, Design of Attenuators, impedance matching network.

UNIT - IV: Filters

Classification of Filters, Filter Networks, Constant-K Filters-Low pass, high pass, Band pass, band-stop filters, M-derived Filters- T and π filters- Low pass, high pass

Attenuators: Types – T, π , L, Bridge T and lattice, Asymmetrical Attenuators T, π , L Equalizers-Types- Series, Shunt, Constant resistance, bridge T attenuation, bridge T phase, Lattice attenuation, lattice Phase equalizers.

UNIT – V: Network Synthesis:

Driving point impedance and admittance, transfer impedance and admittance, network functions of Ladder and non-ladder networks, Poles, Zeros analysis of network functions Hurwitz Polynomials, Positive Real Functions, synthesis of LC, RC and RL Functions by foster and causer methods.

Text Books:

1. Van Valkenburg -Network Analysis, 3rd Ed., Pearson, 216.
2. JD Ryder - Networks, Lines and Fields, 2nd Ed., PHI, 1999.

Reference Books:

1. J. Edminister and M. Nahvi - Electric Circuits, Schaum's Outlines, Mc Graw Hills Education, 1999.
2. Sudhakar and Shyammohan S Palli - Networks & Circuits, 4th Ed., Tata McGraw- Hill

Publications

3. William Hayt and Jack E. Kimmerley - Engineering Circuit Analysis, 6th Ed., William Hayt and Jack E. Kimmerley, McGraw Hill Company.

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DIGITAL LOGIC DESIGN**Course Objectives:**

1. To understand common forms of number representation in logic circuits.
2. To learn basic techniques for the design of digital circuits and fundamental concepts used in the design of digital systems.
3. To understand the concepts of combinational logic circuits and sequential circuits.
4. To understand the Realization of Logic Gates Using Diodes & Transistors.

Course Outcomes: Upon completing this course, the students will be able to

1. Understand the numerical information in different forms and Boolean Algebra theorems
2. Postulates of Boolean algebra and to minimize combinational functions
3. Design and analyze combinational circuits
4. Design and analyze registers and counters
5. Known about the finite state machines and its applications

UNIT - I: Number Systems:

Number systems, Complements of Numbers, Codes- Weighted and Non-weighted codes and its Properties, Parity check code and Hamming code.

Boolean algebra: Basic Theorems and Properties, Switching Functions- Canonical and Standard Form, Algebraic Simplification, Digital Logic Gates, EX-OR gates, Universal Gates, Multilevel NAND/NOR realizations.

UNIT - II: Minimization of Boolean functions:

Karnaugh Map Method - Up to five Variables, Don't Care Map Entries, Tabular Method

Realization of Logic Gates Using Diodes & Transistors: AND, OR and NOT Gates using Diodes and Transistors, DCTL, RTL, DTL, TTL, CML and CMOS Logic Families and its Comparison, standard TTL NAND Gate-Analysis & characteristics, TTL open collector O/Ps, Tristate TTL, MOS & CMOS open drain and tri-state outputs, IC interfacing- TTL driving CMOS & CMOS driving TTL.

UNIT - III: Combinational Logic Circuits:

Adders, Subtractors, Comparators, Multiplexers, Demultiplexers, Encoders, Decoders and Code converters, Hazards and Hazard Free Relations.

Sequential Circuits Fundamentals: Basic Architectural Distinctions between Combinational and Sequential circuits, SR Latch, Flip Flops: SR, JK, JK Master Slave, D and T Type Flip Flops, Excitation Table of all Flip Flops, Timing and Triggering Consideration, Conversion from one type of Flip-Flop to another.

UNIT - IV: Registers and Counters:

Shift Registers – Left, Right and Bidirectional Shift Registers, Applications of Shift Registers - Design and Operation of Ring and Twisted Ring Counter, Operation of Asynchronous and Synchronous Counters.

Sequential Machines: Finite State Machines, Synthesis of Synchronous Sequential Circuits- Serial Binary Adder, Sequence Detector, Parity-bit Generator, Synchronous Modulo N Counters.

UNIT – V: Finite state machine:

Capabilities and limitations, Mealy and Moore models, State equivalence and machine minimization, simplification of incompletely specified machines, Merger graphs. Asynchronous design-modes of operation, Hazards, synthesis of SIC fundamental mode circuits, synthesis of burst mode circuits. Introduction to ASM Charts

Text Books:

1. Zvi Kohavi & Niraj K. Jha, - Switching and Finite Automata Theory, 3rd Ed., Cambridge, 2010.
2. R. P. Jain - Modern Digital Electronics, 3rd Edition, 2007- Tata McGraw-Hill

Reference Books:

1. Morris Mano, Fredriac J. Hill, Gerald R. Peterson - Introduction to Switching Theory and Logic Design –3rd Ed., John Wiley & Sons Inc.
2. Charles H. Roth - Fundamentals of Logic Design, 5th ED., Cengage Learning, 2004

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SIGNALS AND SYSTEMS**Course Objectives: The objectives of this subject are to**

1. Classify signals and systems and their analysis in time and frequency domains.
2. Study the concepts of distortion less transmission through LTI systems, convolution and correlation properties.
3. Understand Laplace and Z-transforms their properties for analysis of signals and systems.
4. Identify the need for sampling of CT signals, types and merits and demerits of each type.

Course Outcomes: Upon completing this course the students able to:

- Characterize various signals, systems and their time and frequency domain analysis, using transform techniques.
- Identify the conditions for transmission of signals through systems and conditions for Physical realization of systems.
- Use sampling theorem for baseband and band pass signals for various types of sampling and for different duty cycles.
- Apply the correlation and PSD functions for various applications.

UNIT - I: Signal Analysis:

Analogy between Vectors and Signals, Orthogonal Signal Space, Signal approximation using Orthogonal functions, Mean Square Error, Closed or complete set of Orthogonal functions, Orthogonality in Complex functions, Classification of Signals and systems, Exponential and Sinusoidal signals, Concepts of Impulse function, Unit Step function, Signum function.

UNIT - II: Fourier series:

Representation of Fourier series, Continuous time periodic signals, Properties of Fourier Series, Dirichlet's conditions, Trigonometric Fourier Series and Exponential Fourier Series, Complex Fourier spectrum.

Fourier Transforms: Deriving Fourier Transform from Fourier series, Fourier Transform of arbitrary signal, Fourier Transform of standard signals, Fourier Transform of Periodic Signals, Properties of Fourier Transform, Fourier Transforms involving Impulse function and Signum function, Introduction to Hilbert Transform.

UNIT - III: Signal Transmission through Linear Systems:

Linear System, Impulse response, Response of a Linear System, Linear Time Invariant(LTI) System, Linear Time Variant (LTV) System, Transfer function of a LTI System, Filter characteristic of Linear System, Distortion less transmission through a system, Signal bandwidth, System Bandwidth, Ideal LPF, HPF, and BPF characteristics, Causality and Paley-Wiener criterion for physical realization, Relationship between Bandwidth and rise time, Convolution and Correlation of Signals, Concept of convolution in Time domain and Frequency domain, Graphical representation of Convolution.

UNIT - IV: Laplace Transforms:

Laplace Transforms (L.T), Inverse Laplace Transform, Concept of Region of Convergence (ROC) for Laplace Transforms, Properties of L.T, Relation between L.T and F.T of a signal, Laplace Transform of certain signals using waveform synthesis.- Serial Binary Adder, Sequence Detector, Parity-bit Generator, Synchronous Modulo N Counters

Z-Transforms: Concept of Z- Transform of a Discrete Sequence, Distinction between

Laplace, Fourier and Z Transforms, Region of Convergence in Z-Transform, Constraints on ROC for various classes of signals, Inverse Z-transform, Properties of Z-transforms.

UNIT – V: Sampling theorem:

Graphical and analytical proof for Band Limited Signals, Impulse Sampling, Natural and Flat top Sampling, Reconstruction of signal from its samples, Effect of under sampling – Aliasing, Introduction to Band Pass Sampling.

Correlation: Cross Correlation and Auto Correlation of Functions, Properties of Correlation Functions, Energy Density Spectrum, Parsevals Theorem, Power Density Spectrum, Relation between Autocorrelation Function and Energy/Power Spectral Density Function, Relation between Convolution and Correlation, Detection of Periodic Signals in the presence of Noise by Correlation, Extraction of Signal from Noise by Filtering.

Text Books:

1. B.P. Lathi -Signals, Systems & Communications, BSP, 2013.
2. A.V. Oppenheim, A.S. Willsky and S.H. Nawabi -Signals and Systems, 2nd Ed., Prentice Hall

Reference Books:

1. Simon Haykin and Van Veen, A. Rama Krishna Rao, -Signals and Systems, TMH, 2008.
2. Michel J. Robert - Fundamentals of Signals and Systems, MGH International Edition, 2008.
3. C. L. Philips, J. M. Parr and Eve A. Riskin -Signals, Systems and Transforms, 3rd Ed., PE, 2004.

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ANALOG CIRCUITS LABORATORY**Course Outcomes:** To learn Upon completing this course the students will be able to

- Study different meters and instruments for measurement of electronic quantities
- Study the characteristics of different semiconductor devices like diode, BJT, FET, UJT etc experimentally
- Design and experiment with various application circuits using diodes
- Design and experiment with various signal and power amplifier circuits using BJTs and FETs
- Design and experiment with various voltage regulation circuits

List of Experiments (Twelve experiments to be done):

Verify any twelve experiments in H/W Laboratory

1. Perform an experiment to choose Q-point for a Transistor that operate in active region and observe the effect of external Load resistance on Q-point.
2. Design a Self bias Circuit and determine the Q-point of the Transistor and its Stability factor b both simulation and realization with hardware components.
3. Obtain the I/O Characteristics of CE, CB, CC amplifiers. Calculate h-parameters from the Characteristics.
4. Design and Simulate a Common Drain Amplifier with voltage divider bias and determine the Stability factor.
5. Obtain the Drain and Transfer characteristics of CD, CS amplifiers of JFET. Calculate g_m , r_d from the Characteristics.
6. By experiment prove that the voltage gain of Emitter Follower Circuit is one.
7. Design a Common Emitter Amplifier with a gain of 30db and Bandwidth of 10KHZ and plot the frequency response practically.
8. Design a two stage RC Coupled amplifier and prove that gain is increased and analyze the effects of coupling capacitance.
9. Practically prove that the Darlington pair has high input impedance.
10. Draw the high frequency response of common emitter transistor amplifier and calculate f_α , f_β and gain bandwidth product.
11. Design a cascode amplifier for a given specifications
12. Design four topologies of feedback amplifiers and draw the frequency response of them with and without feedback.
13. Design an RC phase shift oscillator circuit and derive the gain condition for oscillations practically for given frequency.
14. Design a Colpitts oscillator circuit for the given frequency and draw the output waveform.

Major Equipment required for Laboratories:

1. Regulated Power Suppliers, 0-30V
2. 20 MHz, Dual Channel Cathode Ray Oscilloscopes.
3. Functions Generators-Sine and Square wave signals

4. Multimeters
5. Electronic devices

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DIGITAL LOGIC DESIGN LABORATORY**Course Outcomes:** Upon completing this course, the students will be able to

- Acquire the knowledge on numerical information in different forms and Boolean Algebra theorems.
- Define Postulates of Boolean algebra and to minimize combinational functions, and design the combinational circuits.
- Design and analyze sequential circuits for various cyclic functions.
- Characterize logic families and analyze them for the purpose of AC and DC parameters

List of Experiments (Twelve experiments to be done):

Verify any twelve experiments in H/W Laboratory

1. Realization of Logic circuit to generate r's Complement using Logic Gates.
 2. Realization of given Boolean function using universal gates and minimizing the same. Compare the gate count before and after minimization.
 3. Design and realize Full Adder circuit using gates/universal gates. Implement Full Subtractor using full adder.
 4. Designing a 2 – bit Comparator using AND, OR and NOT gates. Realize 4 – bit Comparator using 2– bit Comparators.
 5. Realize 2:1 MUX using the given gates and Design 8:1 using 2:1 MUX.
 6. Implement the given Boolean function using the given MUX(ex: code converters).
 7. Realize a 2x4 Decoder using logic gates and implement 3x8 Decoder using 2x4 Decoder.
 8. Implement the given Boolean function using given Decoders.
 9. Convert De multiplexer to Decoder and vice versa.
 10. Verification of truth tables of flip flops using different clocks (level triggering, positive and negative edge triggering) also converts the given flip flop from one type to other.
 11. Designing of Universal n-bit shift register using flip flops and Multiplexers. Draw the timing diagram of the Shift Register.
 12. Design a Synchronous binary counter using D-flip flop/given flip flop.
 13. Design a asynchronous counter for the given sequence using given flip flops.
 14. Designing of MOD 8 Counter using JK flip flops.
 15. Designing of sequence detecting State Machine with minimal states using the given flip flops.
 16. Designing of Parity Bit(even/odd) generator using the given flip flops.
 17. Realize all logic gates with TTL logic.
 18. Realize all logic gates with DTL logic.
- *Design a sequence detector to detect a given sequence and verify practically
*Design a serial subtractor for 4 bit binary numbers.

Major Equipment required for Laboratories:

1. 5 V Fixed Regulated Power Supply/ 0-5V or more Regulated Power Supply.
2. 20 MHz Oscilloscope with Dual Channel.
3. Bread board and components/ Trainer Kit.
4. Multimeter

B.Tech. ECE**L T P C****II Year – I Semester****0 0 2 1****BASIC SIMULATION LABORATORY****Course Outcomes:** Upon completing this course, the students will be able to

- Generate, analyze and perform various operations on Signals/Sequences both in time and Frequency domain
- Analyze and Characterize Continuous and Discrete Time Systems both in Time and Frequency domain along with the concept of Sampling
- Generate different Random Signals and capable to analyze their Characteristics
- Apply the Concepts of Deterministic and Random Signals for Noise removal Applications and on other Real Time Signals

Note:

1. All the experiments are to be simulated using MATLAB or equivalent software
2. Minimum of 15 experiment are to be completed

List of Experiments:

1. Basic Operations on Matrices.
2. Generation of Various Signals and Sequences (Periodic and Aperiodic), such as Unit Impulse, Unit Step, Square, Saw tooth, Triangular, Sinusoidal, Ramp, Sinc.
3. Operations on Signals and Sequences such as Addition, Multiplication, Scaling, Shifting, Folding, Computation of Energy and Average Power.
4. Finding the Even and Odd parts of Signal/Sequence and Real and Imaginary parts of Signal.
5. Convolution for Signals and sequences.
6. Auto Correlation and Cross Correlation for Signals and Sequences.
7. Verification of Linearity and Time Invariance Properties of a given Continuous/Discrete System.
8. Computation of Unit sample, Unit step and Sinusoidal responses of the given LTI system and verifying its physical realizability and stability properties.
9. Gibbs Phenomenon Simulation.
10. Finding the Fourier Transform of a given signal and plotting its magnitude and phase spectrum.
11. Waveform Synthesis using Laplace Transform.
12. Locating the Zeros and Poles and plotting the Pole-Zero maps in S-plane and Z-Plane for the given transfer function.
13. Generation of Gaussian noise (Real and Complex), Computation of its mean, M.S. Value and its Skew, Kurtosis, and PSD, Probability Distribution Function.
14. Verification of Sampling Theorem.
15. Removal of noise by Autocorrelation / Cross correlation.
16. Extraction of Periodic Signal masked by noise using Correlation.
17. Verification of Weiner-Khinchine Relations.
18. Checking a Random Process for Stationarity in Wide sense..

Major Equipment required for Laboratories:

1. Computer System with latest specifications connected
2. Window Xp or equivalent

3. Simulation software-MAT Lab or any equivalent simulation software

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Constitution of India

Course Objectives:

- Understand the premises informing the twin themes of liberty and freedom from a civil rights perspective.
- To address the growth of Indian opinion regarding modern Indian intellectuals' constitutional role and entitlement to civil and economic rights as well as the emergence of nationhood in the early years of Indian nationalism.
- To address the role of socialism in India after the commencement of the Bolshevik Revolution in 1917 and its impact on the initial drafting of the Indian Constitution.

Course Outcomes: The student will learn

- Discuss the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.
- Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India.
- Discuss the circumstances surrounding the foundation of the Congress Socialist Party [CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution.
- To prepare, analyze, and interpret financial statements.
- Discuss the passage of the Hindu Code Bill of 1956.

UNIT-I:

History of Making of the Indian Constitution- History of Drafting Committee.

UNIT-II:

Philosophy of the Indian Constitution- Preamble Salient Features

UNIT-III:

Contours of Constitutional Rights & Duties - Fundamental Rights

- Right to Equality
- Right to Freedom
- Right against Exploitation
- Right to Freedom of Religion
- Cultural and Educational Right
- Right to Constitutional Remedies
- Directive Principles of State Policy
- Fundamental Duties.

UNIT-IV:

Organs of Governance: Parliament, Composition, Qualifications and Disqualifications, Powers and Functions, Executive, President, Governor, Council of Ministers, Judiciary, Appointment and Transfer of Judges, Qualifications, Powers and Functions

UNIT-V:

Local Administration: District's Administration head: Role and Importance, Municipalities: Introduction, Mayor and role of Elected Representative, CEO of Municipal Corporation. Panchayat raj: Introduction, PRI: Zila Panchayat. Elected officials and their roles, CEO Zila Panchayat: Position and role. Block level: Organizational Hierarchy (Different departments), Village level: Role of Elected and Appointed officials, Importance of grass root democracy

UNIT-VI:

Election Commission: Election Commission: Role and Functioning. Chief Election Commissioner and Election Commissioners. State Election Commission: Role and Functioning. Institute and Bodies for the welfare of SC/ST/OBC and women.

Suggested Reading:

1. The Constitution of India, 1950 (Bare Act), Government Publication.
2. Dr. S. N. Busi, Dr. B. R. Ambedkar framing of Indian Constitution, 1st Edition, 2015.
3. M. P. Jain, Indian Constitution Law, 7th Edn., Lexis Nexis, 2014.
4. D.D. Basu, Introduction to the Constitution of India, Lexis Nexis, 2015.