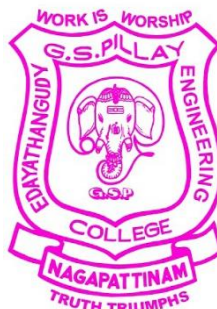# E.G.S. PILLAY ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi | Affiliated to Anna University, Chennai

Accredited by NAAC with 'A' Grade | Accredited by NBA

NAGAPATTINAM – 611 002

B.E ELECTRICAL AND ELECTRONICS ENGINEERING

Full Time Curriculum and Syllabus

Second Year – Third Semester

Course Code	Course Name	L	T	P	C	Maximum Marks		
						CA	ES	Total
Theory Course								
1901MA303	Engineering Mathematics III (Complex Variables, Vector Calculus and Transforms)	3	2	0	4	40	60	100
1902EE301	Analog Electronics	3	0	0	3	40	60	100
1902EE302	Digital Electronics	3	0	0	3	40	60	100
1902EE303	DC Machines and Transformers	3	2	0	4	40	60	100
1901GE301	Basic Civil and Mechanical Engineering	3	0	0	3	40	60	100
Laboratory Course								
1902EE351	Analog Electronics Laboratory	0	0	2	1	50	50	100
1902EE352	DC Machines and Transformers Laboratory	0	0	2	1	50	50	100
1904GE351	Life Skills: Soft Skill	0	0	2	1	100	0	100
Audit Course								
1901MCX02	Constitution of India	2	0	0	0	100	0	100
Total		17	04	06	20	500	400	900

L – Lecture | T – Tutorial | P – Practical | CA – Continuous Assessment | ES – End Semester

1901MA303	Engineering Mathematics III (Complex Variables, Vector Calculus and Transforms)	L	T	P	C
		3	2	0	4

COURSE OBJECTIVE

This course focuses on acquiring sound knowledge of techniques involved in conformal mappings, properties of analytic functions and construction of analytic functions , acquaint with the concepts of vector calculus, needed for problems in all engineering disciplines, develop an understanding of the standard techniques of complex variable theory so as to enable the student to apply them with confidence, in application areas such as heat conduction, elasticity, fluid dynamics and flow the of electric current, also make the student appreciate the purpose of using transforms to create a new domain in which it is easier to handle the problem that is being investigated.

COURSE OUTCOMES

After successful completion of the course, students will be able to

CO1 Construct an analytic functions, harmonic functions and conformal mappings

CO2 Determine the area and volume of a curve using double and triple integration.

CO3 Estimate contour integrals, Cauchy integral formula, Cauchy integral formula and residues.

CO4 Determine the Fourier transforms, Inverse Fourier Transforms

CO5 Determine the Z transforms Inverse Z transforms solving differential equations by using Z transforms

MODULE I   ANALYTIC FUNCTIONS   12 Hours

Functions of a complex variable – Analytic functions: Necessary conditions – Cauchy-Riemann equations and sufficient conditions (excluding proofs) – Harmonic and orthogonal properties of analytic function – Harmonic conjugate – Construction of analytic functions – Conformal mapping: w = z+k, kz, 1/z, and bilinear transformation.

MODULE II   VECTOR CALCULUS   12 Hours

Gradient, Divergence and Curl – Directional derivative – Irrotational and solenoidal vector fields – Vector integration: Greens theorem in a plane, Gauss divergence theorem and Stokes" theorem (excluding proofs) – Applications of the above theorems to find surface area of a closed region and volume of cube and parallel piped.

MODULE III   COMPLEX INTEGRATION   12 Hours

Complex integration – Statement and applications of Cauchy's integral theorem and Cauchy's integral formula – Taylor's and Laurent's series expansions – Singular points – Residues – Cauchy's residue theorem – Evaluation of real definite integrals as contour integrals around unit circle and semi-circle (excluding poles on the real axis).

MODULE IV   FOURIER TRANSFORMS   12 Hours

Statement of Fourier integral theorem – Fourier transform pair – Fourier sine and cosine transforms – Properties – Transforms of simple functions – Convolution theorem – Perceval's identity

MODULE V   TRANSFORMS   12 Hours

Z- transforms - Elementary properties – Inverse Z - transform (using partial fraction and residues) – Convolution theorem - Formation of difference equations – Solution of difference equations using Z – transform

TOTAL: 60 HOURS

REFERENCES:
1. Bali N. P and Manish Goyal, "A Text book of Engineering Mathematics", Eighth Edition, Laxmi Publications Pvt Ltd.(2011).
2. Grewal. B.S, "Higher Engineering Mathematics", 41st Edition, Khanna Pub, Delhi, 2011.
3. Dass, H.K., and Er. Rajnish Verma," Higher Engineering Mathematics", S. Chand Private Ltd., (2011)
4. Glyn James, "Advanced Modern Engineering Mathematics", 3rd Edition, Pearson Education, (2012).
5. Peter V. O'Neil," Advanced Engineering Mathematics", 7th Edition, Cengage learning, (2012).
6. Ramana B.V, "Higher Engineering Mathematics", Tata McGraw Hill Publishing Company, New Delhi, (2008).

		L	**T**	**P**	**C**
1902EE301	**ANALOG ELECTRONICS**	**3**	**0**	**0**	**3**

COURSE OBJECTIVE

To understand the structure and operation of electronic devices

1. To explain the operation and characteristics of electronic circuits
2. To analyze the BJT and FET based amplifier circuits

COURSE OUTCOME

CO1	Explain the structure, V-I Characteristics and applications of diodes.
CO2	Describe the V-I characteristics of BJT in CB,CE & CC configurations also able to design and analyze amplifier circuits containing BJT as a device
CO3	Discuss the structure, operation and V-I characteristics of FET also able to design and analyze amplifier circuits containing FET as a device
CO4	Explain the need and operation of differential amplifiers, single tuned amplifiers and power amplifiers able to analyze differential and single tuned amplifiers.
CO5	Analyze negative feedback amplifiers to determine necessary expressions & RC, LC and Crystal Oscillators to find out frequency of oscillations

MODULE I   DIODES   9 Hours

PN Junction Diode: Structure, Operation and V-I characteristics; Capacitance effect – Diffusion capacitance and transition capacitance; Diode model; Applications–Clippers and clampers.
Zener Diode: V-I Characteristics, Breakdown mechanism; Application – Voltage regulator.
Special Function Diodes: Structure and operation of LED, Laser diode, Tunnel diode, Schottky diode and Photodiode.

MODULE II   BIPOLAR JUNCTION TRANSISTOR AND CIRCUITS   9 Hours

BJT: Structure, operation, biasing circuits, V-I characteristics in common base, common emitter and common collector configurations; DC and AC load line analysis- Determination of Q point; Secondary breakdown; Small signal model; Analysis and comparison of CB, CE and CC amplifiers; Low and high frequency response of an amplifier; Darlington amplifier.

MODULE III   FIELD EFFECT TRANSISTOR CIRCUITS   9 Hours

JFET: Structure, operation, n channel and p channel, V-I characteristics and biasing circuits of JFET.
MOSFET: Structure and operation of D-MOSFET & E-MOSFET, V-I characteristics, Biasing circuits, small signal model; Analysis of common source and common drain amplifiers; high frequency equivalent circuit; Comparison of devices.

MODULE IV   DIFFERENTIAL AND POWER AMPLIFIERS   9 Hours

Differential Amplifier: Common mode and difference mode analysis of BJT based differential amplifier.
Single Tuned Amplifiers: Gain and frequency response of single tuned BJT and FET amplifiers; Neutralization methods. **Power Amplifiers:** Class A, class B, class C and class AB Amplifiers (Qualitative analysis).

MODULE V   FEEDBACK AMPLIFIERS AND OSCILLATORS   9 Hours

Negative Feedback: Voltage series, current series, current shunt and voltage shunt amplifiers – Input impedance, output impedance, current gain, voltage gain, overall current gain and overall voltage gain.
Positive Feedback: Barkhausen criterion; RC oscillators – RC phase shift and Wien bridge oscillators; LC oscillators – Hartley, Colpitts and Clapp; Crystal oscillators – Miller and Pierce crystal oscillators.

TOTAL: 45 HOURS

REFERENCES:

1. Milman, Halkias and Satyabrata Jit, Electronic Devices and Circuits, McGraw Hill Education (India) Private Ltd., 4th Edition, 2015.
2. Robert L. Boylestad and Louis Nashelsky, Electronic Devices and Circuit Theory, PHI Ltd., 11th Edition, 2015.
3. David A. Bell, Electronic Devices and Circuits‖, Oxford University Press, 5th Edition, 2008.
4. Thomas L. Floyd, Electronic Devices, An Imprint of Mc Millan publishing company, 10th Edition, 2017.
5. Prof.A.N.Chandorkar, IIT Bombay online lecture series onAnalog Electronics http://nptel.ac.in/courses/117101106/
6. Albert Malvino and David Bates, Electronic Principles, 8th Edition,
7. Prof. S.Karmalkar, IIT Madras, online lecture series on Solid State Devices. http://nptel.ac.in/courses/117106091/
8. https://onlinecourses.nptel.ac.in/noc18_ee32/preview.

1902EE302	DIGITAL ELECTRONICS	L	T	P	C
		3	0	0	3

PREREQUISITE :

Applied Physics for Engineers

Electric Circuit Analysis

COURSE OBJECTIVE

1.	To study the fundamentals of digital systems, programmable logic devices and logic families.
2.	To design and analyze digital systems.
3.	To apply the digital simulation techniques for application oriented digital circuits.

COURSE OUTCOMES:

CO1	Solve digital system problems using number systems, binary codes, logic gates, Boolean algebra and Karnaugh Map
CO2	Construct combinational logic circuits using logic gates and multiplexers
CO3	Build synchronous sequential logic circuits using excitation table, stable table and state diagrams
CO4	Construct asynchronous sequential logic circuits using flow table, transition table, state assignment and state reduction techniques
CO5	Implement Boolean functions and combinational logic circuits using memories, programmable logic devices and logic families

MODULE I	NUMBER SYSTEM AND BOOLEAN ALGEBRA	9 Hours

Review of number system, Binary codes –BCD, Gray code, Excess 3 code; Error detection and correction codes – Parity, Hamming codes.
Boolean postulates- laws, rules & theorems; Standard forms of Boolean expressions, conversions; Simplification using K-maps-3, 4 and 5 variables.

MODULE II	COMBINATIONAL LOGIC CIRCUITS	9 Hours

Design of adders, subtractors, comparators, code converters, encoders, decoders, multiplexers and de-multiplexers. Function realization using multiplexers; Booth multiplier and Array Multiplier; Simulation of simple logic circuits.

MODULE III	SYNCHRONOUS SEQUENTIAL LOGIC CIRCUITS	9 Hours

Latches-operation of SR and gated SR latch; Flip-flops – Method of edge triggering, SR, JK, Master Slave JK, D, and T flip flops; Important signals of FF. Design of Synchronous sequential circuits- Model Selection, State transition diagram, State synthesis table, Design equations, State reduction technique and Implementation; Binary counters-4 bit UP, DOWN and UP/DOWN counters; BCD counters, Ring counters, shift registers, Johnson counters.

MODULE IV	ASYNCHRONOUS SEQUENTIAL LOGIC CIRCUITS	9 Hours

Synchronous Vs Asynchronous sequential circuits; Design of asynchronous sequential circuits-Design steps, State transition diagram, State table, FF transition table, K-map based Primitive table, State reduction techniques, state assignment and design equations; Races and hazards.

MODULE V	MEMORY DEVICES, PROGRAMMABLE LOGIC DEVICES AND LOGIC FAMILIES	9 Hours

Memories: ROM, PROM, EPROM; Programmable Logic Devices – PLA, PAL, PLD. Logic families: TTL, ECL, CMOS; Case study on four-bit accumulator.

TOTAL: 45 HOURS

REFERENCES:
1. M. Morris Mano, Digital Logic and Computer Design, Prentice Hall of India, 4th edition, 2013.
2. A. Anandkumar, "Fundamentals of digital circuits", 3rd Edition, PHI Learnings Pvt. Ltd, 2014.
3. Malvino and Leach, Digital Principles and Applications, Tata McGraw Hill, New Delhi, 7th edition, 2011.
4. Floyd, Digital Fundamentals, Pearson Education, 10th edition, 2011.
5. John F. Wakerly, Digital Design Principles and Practice, Pearson Education, 4th edition, 2008.
6. http://nptel.ac.in/courses/117106086/

1902EE303	DC MACHINES AND TRANSFORMERS	L	T	P	C
PREREQUISITE :		**3**	**2**	**0**	**4**

1. Electric Circuit Analysis

2. Basic Electrical Engineering

COURSE OBJECTIVES:

1. Understand the basic concepts behind the rotating and stationary machines.
2. Evaluate the performance characteristics of DC Generator and DC Motor
3. Explain the different types of Transformers, their working principle and performance

COURSE OUTCOMES:

On the successful completion of the course, students will be able to

CO1 Understand the operation characteristics of DC machines

CO2 Understand the operation characteristics of Transformer

CO3 Analyze the performance parameters of DC machine and Transformer

CO4 Elucidate the applications of transformer

CO5 Apply the different testing methods to assess the performance of Electrical machines

MODULE I DC GENERATOR 12 Hours

Rekindling of magnetic circuit fundamentals; DC generator- Construction, Materials for different parts, development of lap and wave winding, EMF equation, excitation types, Commutation, Armature reaction, Compensating winding, and characteristics;Simulation study on dc separately excited dc generator.

MODULE II DC MOTOR 12 Hours

Principle of operation, Classification, Torque equation, Characteristics, Starters; Speed Control and Braking methods; Simulation of dc motors.

MODULE III TESTING AND APPLICATIONS OF DC MACHINES 12 Hours

Losses and Efficiency calculations; Testing- Swinburne's test, Brake test, Hopkinson test; Industrial applications of DC generators& DC motors; Energy saving options.

MODULE IV TRANSFORMER 12 Hours

Single phase transformer: Construction, Principle of operation, Classification, Ideal transformer, Equivalent circuit, Phasor diagrams, Voltage regulation, Characteristic curves, Conditions for maximum regulation and power factor; Parallel operation of transformers. Three phase transformer: Parts of transformer, Cooling, Connections, Tertiary winding; Inrush current; Per unit representation.

**MODULE V PERFORMANCE EVALUATION AND APPLICATIONS OF 12 Hours
TRANSFORMER**

Performance evaluation of transformer: Open circuit and Short circuit test, Polarity test, Load test, Sumpner's test; Design over view of transformer.Applications of transformer: Autotransformer, Power transformer, Distribution transformer-Calculation of All day efficiency, Potential transformer, Current transformer and Isolation transformers.

TOTAL: **60 HOURS**

REFERENCES:

1. D. P. Kothari and I. J. Nagrath, Electric Machines, Tata McGraw Hill Publishing Company Ltd, 2010.
2. Edward Hughes, Electrical and Electronic Technology, 12th edition, Pearson, 2016.
3. P. S. Bimbhra, Electrical Machinery, Khanna Publishers, 7th edition, 2011.
4. B. L. Theraja and A. K. Theraja, ―Text Book of Electrical Technology: AC & DC Machines (Volume- 2),
   S. Chand & Company Ltd., New Delhi, 2008.
5. M.N. Bandyopadhyay, Electrical Machines Theory and practice, PHI Learning Pvt. Ltd, New Delhi 2007.
6. Electrical Machines-I Nptel lecture video by Dr. D.Kastha, IIT Kharagpur.

1901GE301	BASIC CIVIL AND MECHANICAL ENGINEERING	L	T	P	C
		3	0	0	3

COURSE OBJECTIVE
1. To get more knowledge in building structure with proper selection of construction material
2. To understand the power plants , IC engine and refrigeration system

COURSE OUTCOME
On the successful completion of the course, students will be able to
CO1   Explain the usage of construction material and proper selection of it.
CO2   Design building structure
CO3   Explain about various power plants and its operation
CO4   Describe the operation of internal combustion engine
CO5   Discuss about Refrigeration And Air Conditioning System

CIVIL ENGINEERING

MODULE I	SURVEYING AND CIVIL ENGINEERING MATERIALS	9 Hours

Surveying: Objects – types – classification – principles – measurements of distances – angles – leveling – determination of areas – illustrative examples.
Civil Engineering Materials: Bricks – stones – sand – cement – concrete – steel sections.

MODULE II	BUILDING COMPONENTS AND STRUCTURES	9 Hours

Foundations: Types, Bearing capacity – Requirement of good foundations.
Superstructure: Brick masonry – stone masonry – beams – columns – lintels – roofing – flooring – plastering – Mechanics – Internal and external forces – stress – strain – elasticity – Types of Bridges and Dams – Basics of Interior Design and Landscaping.

MECHANICAL ENGINEERING

MODULE III	POWER PLANT ENGINEERING	9 Hours

Introduction, Classification of Power Plants – Working principle of steam, Gas, Diesel, Hydro-electric and Nuclear Power plants – Merits and Demerits – Pumps and turbines – working principle of Reciprocating pumps (single acting and double acting) – Centrifugal Pump.

MODULE IV	IC ENGINES	9 Hours

Internal combustion engines as automobile power plant – Working principle of Petrol and Diesel Engines – Four stroke and two stroke cycles – Comparison of four stroke and two stroke engines – Boiler as a power plant.

MODULE V	REFRIGERATION AND AIR CONDITIONING SYSTEM	9 Hours

Terminology of Refrigeration and Air Conditioning– Principle of vapour compression and absorption system – Layout of typical domestic refrigerator – Window and Split type room Air conditioner.

TOTAL: **45 HOURS**

REFERENCES:
1. Ramamrutham S., "Basic Civil Engineering", Dhanpat Rai Publishing Co. (P) Ltd. 1999.
2. Seetharaman S., "Basic Civil Engineering", Anuradha Agencies, 2005.
3. Venugopal K. and Prahu Raja V., "Basic Mechanical Engineering", Anuradha Publishers, Kumbakonam, 2000.
4. Shantha Kumar S R J., "Basic Mechanical Engineering", Hi-tech Publications, Mayiladuthurai, 2000.
5. Shanmugam G and Palanichamy M S, "Basic Civil and Mechanical Engineering", Tata McGraw Hill Publishing Co., New Delhi, 1996.

1902EE351   **ANALOG ELECTRONICS LABORATORY**   **L   T   P   C**
                                                                   0   0   2   1

PREREQUISITE:
1.   Semiconductor Physics and Devices
2.   Electric Circuit Analysis

COURSE OBJECTIVES:

1.   To analyze V-I Characteristics of different switches
2.   To Design a transistor based amplifier circuits
3.   To understand the operations of Digital Storage Oscilloscope.

COURSE OUTCOMES:

On the successful completion of the course, students will be able to

CO1   Illustrate the turn on and turn off process of different switches
CO2   Design a circuit, which is used to convert ac signal to dc signal
CO3   Determine voltage gain from CE and CB configurations
CO4   Determine the frequency and gain value of various types of oscillators and amplifiers
CO5   Study and understand the operation of digital storage oscilloscope

LIST OF EXPERIMENTS

1.   Characteristics of PN junction diode and Zener diode.
2.   Design of Clipper and Clamper circuits.
3.   Characteristics of CE and CB configurations.
4.   Characteristics of JFET / MOSFET.
5.   Design and verify the frequency response of single stage transistor amplifier.
6.   Design and verify the frequency response of RC phase shift oscillator.
7. Frequency response of two stage RC coupled amplifier.
8. Verify the V-I characteristics of photo diode and phototransistor.
9.   Design and test a voltage regulator circuit using zener diode.
10. Design a transistor based battery charging control circuit.
11. Design of Hartley Oscillator
12. Design of Colpitts Oscillator

TOTAL: 30 HOURS

ADDITIONAL EXPERIMENTS:

1.   Design of transistor based differential amplifier.
2.   Real time applications using logic gates/Flip-flops.

REFERENCES:
1.   Mr.K. Krishnaram, ―Electronic Devices and Circuits – Lab Manual‖ 2018.
2.   Milman, Halkias and Satyabrata Jit, ―Electronic Devices and Circuits‖ 4th Edition, Mc Graw Hill
     Education (India) Private Ltd, 2015.
3.   Integrated circuits: Solution manual: Analog digital circuits and systems manual by Jacob
     Millman.

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1902EE352	DC MACHINES AND TRANSFORMERS LABORATORY	L	T	P	C
		0	0	2	1

PREREQUISITE :
1. Study of Electrical circuits
2. Basics of rotating and static machinery concepts

COURSE OBJECTIVES:
1. Complete the circuit to test a given electrical machine.
2. Analyze the performance characteristics of various electrical machines
3. Evaluate the performance of transformer

COURSE OUTCOMES:
On the successful completion of the course, students will be able to

CO1   Draw the circuits for a given electrical machine
CO2   Obtain the performance characteristics of DC Generators.
CO3   Analyze the operating behavior of DC motors under various loading condition
CO4   Obtain the equivalent circuit parameters of transformer
CO5   Know the different starting and control measures involved in the operation of electrical machines

LIST OF EXPERIMENTS:
1. Swinburne's test and load test on DC shunt motor.
2. Parallel operation of single-phase transformers.
3. Load test on DC series motor.
4. Load test on DC compound motor.
5. Speed control of DC shunt motor (Field control & armature control method).
6. Open circuit and load characteristics of DC shunt generator.
7. Open circuit and short circuit test on single-phase transformer.
8. Open circuit and short circuit test on three-phase transformer.
9. Load test on single-phase transformer.
10. Load test on three-phase transformer.

TOTAL : 30 HOURS

ADDITIONAL EXPERIMENTS :
1. Sumpner's test on single-phase transformer.

REFERENCES:
1. B.A.NaveenAntony―ElectricalMachinerylaboratory-1Manual, 2018.
2. D.P.Kothari & B.S.Umre, Laboratory Manual for Electrical Machines, I.K. International publishing house Pvt. Ltd., 2013.
3. B.L.Theraja &.K.Theraja, Text BookofElectricalTechnology: AC&DCMachines–Volume-2, S.Chand & Company Ltd., NewDelhi, 2008.

1904GE351	LIFE SKILLS: SOFT SKILLS	L	T	P	C
		0	0	2	1

COURSE OBJECTIVES:

1	To develop the students basic soft skills and enable them to get a job.
2	To develop the students 'interpersonal skills and to enable them to respond effectively.
3	To develop the students selling skills and to enable them to apply in their interview process.
4	To develop the students 'Corporate Etiquettes and enable them to respond effectively.
5	To develop the students 'learning by practice of giving different situations.

COURSE OUTCOMES:

On the successful completion of the course, students will be able to

CO1	Communicate effectively in their business environment.
CO2	Improve their interpersonal skills, which are mandatory in a corporate world.
CO3	Brand themselves to acquire a job.
CO4	Involve in corporate etiquettes.
CO5	Survive in the different situations.

MODULE I   INTRODUCTION TO SOFT SKILLS   **6 Hours**

Soft Skills an Overview - Basics of Communication – Body Language – Positive attitude –Improving Perception and forming values – Communicating with others.

MODULE II   TEAM VS TRUST   **6 Hours**

Interpersonal skills – Understanding others – Art of Listening - Group Dynamics –Essential of an effective team - Individual and group presentations - Group interactions – Improved work Relationship .

MODULE III   SELLING ONESELF   **6 Hours**

How to brand oneself – social media – job hunting – Resume writing – Group Discussion – Mock G.D - .Interview skills – Mock Interview

MODULE IV   CORPORATE ETIQUETTE   **6 Hours**

What is Etiquette – Key Factors – Greetings – Meeting etiquette – Telephone etiquette – email etiquette – Dining etiquette – Dressing etiquette .

MODULE V   LEARNING BY PRACTICE   **6 Hours**

My family-Myself-Meeting people-Making Contacts.-A city-Getting about town-Our flat-Home life-Travelling - Going abroad- Going through Customs-At a hotel-Shopping- Eating out- Making a phone call- A modern office- Discussing business.

TOTAL: **30 HOURS**

REFERENCES:

1 Dr.K.Alex, "soft skills "Third Edition, S. Chand & Publishing Pvt Limited, 2009
2. Aruna koneru, 'Professional Communication' Second Edition, Tata McGraw-Hill Education, 2008
3. D.K.Sarma,'You & Your Career 'First Edition Wheeler Publishing & Co Ltd, 1999
4. Shiv Khera 'You Can Win' Third Edition Mac Millan Publisher India Pvt Limited, 2005

1901MCX02	CONSTITUTION OF INDIA	L	T	P	C
		2	0	0	0

COURSE OBJECTIVES:

1. To understand about Indian constitution and its structure

2. To obtain the knowledge in constitution function and Indian society

COURSE OUTCOMES:

On the successful completion of the course, students will be able to

CO1 Understand the background and foundations of Indian Constitution

CO2 Describe the structure and function of central government

CO3 Discuss the structure and function of state government

CO4 Explain the constitution functions and parliamentary system in India

CO5 Understand about the Indian society

MODULE I   INTRODUCTION   6 Hours

Historical Background -Constituent Assembly of India -Philosophical foundations of the Indian Constitution-Preamble - Fundamental Rights -Directive Principles of State Policy -Fundamental Duties –Citizenship - Constitutional Remedies for citizens.

MODULE II   STRUCTURE AND FUNCTION OF CENTRAL GOVERNMENT   6 Hours

Union Government - Structures of the Union Government and Functions - President- Vice President- Prime Minister -Cabinet - Parliament - Supreme Court of India - Judiciary view

MODULE III   STRUCTURE AND FUNCTION OF STATE GOVERNMENT   6 Hours

State Government-Structure and Functions - Governor - Chief minister-Cabinet-State Legislature- Judicial System in States -High Courts and other sub ordinate Courts.

MODULE IV   CONSTITUTION FUNCTIONS   6 Hours

Indian Federal System -Center -State Relations- Constitutional Amendments - Constitutional Functionaries – Assessment of working of Parliamentary System in India

MODULE V   INDIAN SOCIETY   6 Hours

Society: Nature, Meaning and definition; India Political Structure; Caste, Religion, Languages in India; Constitutional Remedies for citizens-Parties and Pressure Groups; Right of Women, Children and Scheduled Castes and Scheduled Tribes and other Weaker Sections

TOTAL: **30 HOURS**

REFERENCES:

1. Durga Das Baslli "Introduction to the Constitution of India" Prentice Hall of India, New Delhi.

2. R.C. Agarwal, (1997) "Indian Political System", S. Chand and Company, New Delhi.

3. Maciver and Page, "Society: An Introduction Analysis " Mac Milan India Ltd., New Delhi

4. K.L. Sharma, (1997) 'Social Stratification in India: Issues and Themes', Jawaharlal Nehru University, New Delhi.