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 – 611002

B.E. ELECTRICAL AND ELECTRONICS ENGINEERING

Full Time Curriculum and Syllabus

Third Year – Fifth Semester

Course Code	Course Name	L	T	P	C	Maximum Marks		
						CA	ES	Total
Theory Course								
1902EE501	Measurements and Instrumentation	3	0	0	3	40	60	100
1902EE502	Linear Control Systems	3	2	0	4	40	60	100
1902EE503	Power Electronics	3	0	0	3	40	60	100
1902CS503	Object Oriented Programming	3	0	0	3	40	60	100
1903EE002	Professional Elective-I (Electrical Machine Design)	3	0	0	3	40	60	100
Laboratory Course								
1902EE551	Control and Instrumentation Laboratory	0	0	2	1	50	50	100
1904EE552	Mini Project – I	0	0	2	1	100	0	100
1902CS554	Object Oriented Programming Laboratory	0	0	2	1	50	50	100
1904GE551	Life Skills: Aptitude- I	0	0	2	1	100	0	100
Mandatory Course								
1901MCX03	Essence of Indian Traditional Knowledge	2	0	0	0	100	0	100
Total		17	02	08	20	600	400	1000

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

1902EE501	MEASUREMENTS AND INSTRUMENTATION	L	T	P	C
		3	0	0	3

PREREQUISITE :

1. Semiconductor Physics and Devices
2. Electron Devices and Circuits

COURSE OBJECTIVES:

1. To learn the measuring instrument characteristics and also to calculate different parameters of Instruments.
2. To empower students to understand the working of electrical equipment used in everyday life.
3. To understand the necessary of modern tools in electrical industry

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1 Describe the basic functional elements of measuring instruments and the errors in the measurements systems

CO2 Discuss the operation and applications of measuring instrument under typical environment.

CO3 Identify the unknown values of resistor, inductor and capacitor of given network using suitable bridge circuit.

CO4 Explain the construction and working principle of various storage and display devices.

CO5 Make use of sensor and transducers in measuring purpose using data acquisition system

MODULE I **9Hours**

Elements of a generalized measurement system- Primary sensing element, variable conversion element, variable manipulation element, data transmission and presentation element; Static and dynamic characteristics; Units of measurement systems; Errors- types, measurements, remedial methods, numerical problems; Calibration - Calibration methodology; Standards-National and international.

MODULE II ELCTRICAL AND ELECTRONICS INSTRUMENTS **9 Hours**

Measuring instruments- Classification of measuring instruments, essential requirements of an instrument; Principle and types of analog and digital voltmeter, ammeter and multimeter; Single and three phase watt meter and energy meter; Magnetic measurements; Instrument transformers-CT and PT, extension of range; Frequency meters-Analog and digital frequency meters; phase sequence indicators; power factor meters.

MODULE III COMPARISON TYPE MEASURING INSTRUMENTS **9 Hours**

Principle of comparison type instruments; Potentiometers-DC and AC potentiometers; Bridges - DC and AC bridges, transformer ratio bridges, self-balancing bridges; Interference- Electrostatic, Electromagnetic and ground interference, measurement of radiated interference; Grounding techniques

MODULE IV STORAGE AND DISPLAY DEVICES **9 Hours**

Display devices- LED and LCD display, comparison between LED and LCDs, dot matrix display; Recorders- Strip chart recorders, single point and multi-point recorders, X-Y recorders, magnetic tape recorders; Digital recorders; Oscilloscope-CRO, digital CRO and CRO measurements; Data loggers; Interpretation of datasheet of commercially available storage and display devices.

MODULE V TRANSDUCERS AND DATA ACQUISITION SYSTEMS **9 Hours**

Transducers-Classification, characteristics and selection factors; Passive transducers- Resistive, capacitive and inductive transducers**;** Active transducers-Piezo electric,photo electric and thermo electric transducers; Hall effect transducer; Elements of data acquisition system- Case study; A/D and D/A converters; Smart sensors; Interpretation of datasheet of commercially available transducers and DAS.

TOTAL: 45 Hours

REFERENCES:

1. A.K. Sawhney and Puneet Sawhney, “A Course in Electrical, Electronic Measurements & Instrumentation”, Dhanpat Rai and Co., 2012.
2. J. B. Gupta, “A Course in Electronic and Electrical Measurements”, S. K. Kataria&Sons, Delhi, Jan 2012.
3. H.S. Kalsi, “Electronic Instrumentation”, Tata McGraw Hill, 2nd Edition, 2018.
4. Alan. S. Morris, “Principles of Measurements and Instrumentation”, 2nd Edition, Prentice Hall of India, 2003.
5. Murthy D.V.S., “Transducers and Instrumentation”, Prentice Hall of India, 13th Printing, 2018.
6. https://nptel.ac.in/courses/108/105/108105064//

1902EE502	LINEAR CONTROL SYSTEMS	L	T	P	C
		3	2	0	4

PREREQUISITE :

1. Electric circuit analysis
2. Engineering Mathematics

Course Objectives:

1. To understand the basic components of control systems
2. To gain the knowledge in time and frequency domain tools for the design and analysis of Feedback control systems.
3. To understand the design of compensator and concepts of state variable analysis.

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1 Calculate transfer function of various systems using block diagram reduction, signal flow graph technique.

CO2 Investigate the time response behavior of first and second order system using time domain specification.

CO3 Analyze the frequency response of open loop transfer function using bode plot and polar plot.

CO4 Examine the concept of Stability and study of curves

CO5 Analyze Compensator and Controllers

MODULE I SYSTEMS AND THEIR REPRESENTATION 12 Hours

Basic elements in control systems; Open and closed loop systems; Transfer function- Electrical and mechanical transfer function models, electrical analogy of mechanical systems, block diagram reduction techniques, signal flow graphs.

MODULE II TIME RESPONSE 12 Hours

Time response-Time domain specifications, types of test inputs, first and second order system responses; Error coefficients- Generalized error series, steady state error; Simple time response analysis using MATLAB.

MODULE III FREQUENCY RESPONSE 12 Hours

Frequency response –Frequency domain specifications, Bode plot, polar plot, determination of closed loop response from open loop response; Correlation between frequency domain and time domain specifications; Simple frequency response analysis using MATLAB.

MODULE IV STABILITY 12 Hours

Stability- Concept, relative stability, characteristics equation, Routh Hurwitz criterion, root locus construction, Nyquist stability criterion; Simple root locus curves in MATLAB.

MODULE V DESIGN OF COMPENSATORS AND CONTROLLERS 12 Hours

Compensators - Lag, lead and lag-lead networks, design procedure; Simple problems in MATLAB.
Controllers- P, PI and PID control, design procedure, tuning of controllers, Simple problems in MATLAB.

TOTAL: 60HOURS

REFERENCES:

1. M.Gopal, “Control Systems, Principles and Design”, 4th Edition, Tata McGraw Hill, New Delhi, 2012.
2. S.K.Bhattacharya, “Control System Engineering”, 3rd Edition, Pearson Publications, New Delhi 2013.
3. K.Ogata, “Modern Control Engineering”, 5th Edition, Pearson Prentice Hall, New Delhi, 2012.
4. Richard C.Dorf and Robert H. Bishop, “Modern Control Systems”, 12th Edition, Pearson Prentice Hall, 2012.
5. Benjamin C.Kuo, “Automatic Control Systems”, 7th Edition, Pearson Prentice Hall, New Delhi, 2010.
6. https://nptel.ac.in/courses/107/106/107106081/

1902EE503	POWER ELECTRONICS	L	T	P	C
		3	0	0	3

PREREQUISITE :

1. Electron Devices and Circuits
2. Linear Integrated Circuits

COURSE OBJECTIVES:

1. To study the important aspects of power semiconductor devices
2. To understand the concepts of power conversion and control using power electronic devices
3. To analyze the performance of power modulators

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1 Understand the structure and characteristics of power semiconductor devices.
CO2 Elucidate the operation of power modulators.
CO3 Analyze the control techniques used in power modulators
CO4 Analyze the performance parameters of power converters
CO5 Explain the operation and characteristics of various power electronics converters.

MODULE I POWER SEMICONDUCTOR DEVICES 9 Hours

Introduction to power semiconductor devices; Power diodes, power transistors, Power MOSFETs, IGBTs, SCRs, Triacs, GTOs, IGCT; Static and Dynamic characteristics; Thermal characteristics; losses in the devices.
SCRs- Symbol, construction, static and dynamic characteristics; Two transistor analogy; Snubber circuits; Series and parallel operation of SCRs; Data sheet interpretation of commercially available SCRs.

MODULE II PHASECONTROLLED CONVERTERS 9 Hours

Principle of phase control; Single phase and three phase half wave and full wave converters with R,RL and RLE loads; Estimation of average and RMS values of load voltage, load current; Performance parameters for converters; Effect of freewheeling diodes; Effect of source inductance; Dual converters; Applications.

MODULE III DC TO DC CONVERTERS 9 Hours

DC choppers- Principle of step-up and step-down choppers, control strategies; Classification of choppers- Single quadrant, two quadrant and four quadrant DC choppers, Buck, Boost and Buck boost converters; SMPS; Voltage and current commutated choppers; Multiphase chopper; LUO converter; SEPIC converter; Applications.

MODULE IV INVERTERS 9 Hours

Types of inverters; Operation of single phase VSI, three phase VSI (120 and180-degree modes); Inverter output voltage control; CSIs- Auto sequential CSI; Introduction to MLIs; Pulse width modulation techniques- Single, multiple, sinusoidal modulation; Establishment and solving of NR method based SHEPWM equations; Harmonic elimination techniques; Applications.

MODULE V AC TO AC CONVERTERS 9 Hours

AC voltage controllers-Single phase and three phase controllers with R and RL loads; Sequence control of AC regulators –Two stage sequence control, multistage sequential control.
Cycloconverters: Step-down and step-up cyclo converters; Introduction to matrix converters; Applications.

TOTAL: 45HOURS

REFERENCES:

1. Rashid M H, “Power Electronics- Circuits, Devices and Applications”, Prentice Hall of India, New Delhi, 2011.
2. P.S.Bimbhra, “Power Electronics”, Khanna Publishers, New Delhi, 2006.
3. Vedam Subramanyam, “Power Electronics”, New Age International, New Delhi, 1996.
4. M.D. Singh and K.B. Khanchandani, “Power Electronics”, 2nd Edition, Tata McGraw Hill, New Delhi, 2017.
5. Ned Mohan, Tore.M.Undeland, William.P.Robbins, “Power Electronics: Converters, Applications and Design”, John Wiley and Sons, 3rd Edition, 2003.
6. https://nptel.ac.in/courses/108/102/108102145/

1903EE002	ELECTRICAL MACHINE DESIGN	L	T	P	C
		3	0	0	3

PREREQUISITE :

1. Electrical Machinery-I
2. Electrical Machinery-II

COURSE OBJECTIVES:

1. To study MMF calculation and thermal rating of various types of electrical machines.
2. To understand the design methods of armature and field systems for D.C. machines.
3. To analyze the design details of core, yoke, windings and cooling systems of transformers.
4. To analyze design of stator and rotor of induction and synchronous machines

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1 Explain the major considerations in electrical machine design by considering thermal, magnetic and electric loadings.
CO2 Calculate the design parameters of a DC machine.
CO3 Compute the design parameters of a transformer.
CO4 Calculate the design parameters of Induction motor.
CO5 Calculate the design parameters of synchronous machine.

MODULE I INTRODUCTION TO MACHINE DESIGN 9 Hours

Major considerations in electrical machine design; Electrical engineering materials-electrical and magnetic properties; Space factor; Choice of specific electrical and magnetic loadings; Thermal considerations; Rating of machines; Standard specifications; Design flow chart.

MODULE II DC MACHINES 9 Hours

Design of DC machines- General considerations, Output equation, Main dimensions, limitations of D and L, Choice of specific electric and magnetic loadings, Magnetic circuit calculations, Carter's coefficient, Net length of iron, Real and apparent flux densities, Selection of number of poles, Design of field system, Armature, Design of commutator and brushes, Computer aided design of DC machine.

MODULE III TRANSFORMERS 9 Hours

Design of Transformers-General considerations, Output equation, KVA output for single phase and three phase transformers, Window space factor, Design of core and winding, Overall dimensions, No load current, Temperature rise in transformers, Design of tank and cooling tube, Computer aided design of transformer.

MODULE IV INDUCTION MOTORS 9 Hours

Design of Induction motors- General considerations, Output equation, Choice of average flux density, Main dimensions, Length of air gap, rules for selecting rotor slots of squirrel cage machines, Design of rotor bars and slots, Design of end rings, Design of wound rotor, Magnetic leakage calculations, Leakage reactance of poly phase machines, Magnetizing current and short circuit current, Computer aided design of three phase induction motors; Design of single-phase induction motor.

MODULE V SYNCHRONOUS MACHINES 9 Hours

Design of Synchronous machines-General considerations, Output equation, Choice of electrical and magnetic loading, Main dimensions, Short circuit ratio, Stator design, Stator parameters, Estimation of air gap length, Design of rotor, Design of damper winding, Determination of full load field mmf, Design of field winding, Design of turbo alternators and its rotor design, Computer aided design of synchronous machines.

TOTAL: 45HOURS

REFERENCES:

1. Sawhney. A.K., "A Course in Electrical Machine Design", Dhanpat Rai & Sons, 6th edition, New Delhi, 2010.
2. M.V.Deshpande, "Design and Testing of Electrical Machines", Prentice Hall India, 3rd edition, 2009.
3. A.Shanmuga Sundaram, R.Palaniand G.Gangadharan, "Electrical Machine Design Data Book", New Age International Pvt. Ltd., First edition, 2011.
4. R.K.Agarwal, "Principles of Electrical Machine Design", S K Kataria and Sons, New Delhi, 2009.
5. Sen, S.K., "Principles of Electrical Machine Designs with Computer Programs", Oxford and IBH Publishing Co. Pvt. Ltd., 2nd edition, New Delhi, 2006.
6. https://nptel.ac.in/courses/108/102/108102146/
7. https://nptel.ac.in/courses/108/105/108105131/

1902CS503	OBJECT ORIENTED PROGRAMMING	L	T	P	C
		3	0	0	3

PREREQUISITE :

1. Programming in C
2. Introduction to Computer

COURSE OBJECTIVES:

1. To demonstrate adeptness of object oriented programming in developing solutions to problems demonstrating usage of data abstraction, encapsulation, and inheritance.
2. To understand the concepts behind object-oriented programming using C++
3. To analyze and understand the functionality of program code written in Java.

COURSE OUTCOMES:

CO1 Define the features of C++ supporting object oriented programming

CO2 Understand the major object-oriented concepts such that constructor and operator overloading in C++

CO3 Identify classes, objects, methods of a class and relationships among them in Java

CO4 Identify to implement error handling techniques using exception handling

CO5 Understand the python programming concepts.

MODULE I INTRODUCTION TO C++ 9 Hours

Introduction to C++ – classes – access specifiers – function and data members – default arguments – function overloading – friend functions – const and volatile functions – static members – Objects – pointers and objects – constant objects – nested classes – local classes

MODULE II CONSTRUCTORS 9 Hours

Constructors – default constructor – Parameterized constructors – Constructor with dynamic allocation – copy constructor – destructors – operator overloading – overloading through friend functions – overloading the assignment operator – type conversion – explicit constructor

MODULE III INTRODUCTION TO JAVA 9 Hours

Overview of java-data types-variables-operators-arrays-control statements-object and classes- methods-access specifiers-static members-finalize methods-constructors-exception handling

MODULE IV INHERITANCE AND POLYMORPHISM 9 Hours

Inheritance-super keyword-types of inheritance – polymorphism- method overriding-method overloading-abstract class-inner class-interfaces-reflections

MODULE V PYTHON PROGRAMMING 9 Hours

Data types – variables – operators – control flow – class/objects – Inheritance – functions

TOTAL: 45 HOURS

REFERENCES:

1. B. Trivedi, “Programming with ANSI C++”, Oxford University Press, 2018.
2.H.M.Deitel, P.J.Deitel, “Java how to program”, Fifth edition, Prentice Hall of India private limited,2017.
3. Ira Pohl, “Object-Oriented Programming Using C++”, Pearson Education Asia, 2017.
4.K.R.Venugopal, RajkumarBuyya, T.Ravishankar, “Mastering C++”, TMH, 2015.
5. Allen B. Downey, “Think Python: How to Think Like a Computer Scientist‘‘, 2nd edition,Updated for Python 3, Shroff/O‘Reilly Publishers, 2016 (http://greenteapress.com/wp/thinkpython/)
6. Guido van Rossum and Fred L. Drake Jr, ―An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd., 2018

1902EE551	CONTROL AND INSTRUMENTATION LABORATORY	L	T	P	C
		0	0	2	1

COURSE OBJECTIVES:

1.Knowledge on analysis and design of control system
2.Knowledge on analysis and design of instrumentation
3.Provide analysis and design of controller and compensators

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1	Investigate various characteristics of sensors and transducers
CO2	Make use of bridge networks in measurement circuits for measuring unknown values
CO3	Discuss the concept of controllers and compensators
CO4	Analyze the stability of LTI system using software tool
CO5	Perform the signal conditioning, position control system operation and power measurements.

LIST OF EXPERIMENTS

1. Measurement of resistance using bridge networks.
2. Measurement of inductance using bridge networks.
3. Measurement of capacitance using bridge networks/phase measurements.
4. Perform signal conditioning by using ADC and DAC.
5. Temperature/pressure/displacement sensors.
6. Extension of range of voltmeters and Ammeters.
7. Measurement of energy (single and three phases).
8. AC position control systems.
9. DC position control systems.
10. Transfer function of armature-controlled DC motor.
11. Transfer function of field-controlled DC motor.
12. Closed loop control system using PI/PID controller/ Flow controller.

TOTAL: 30HOURS

REFERENCES:

1. T. Suresh Padmanabhan, “Controland Instrumentation Laboratory Manual”, EGSPEC, 2020.
2. S.K.Bhattacharya, “Electrical Measurement and Control Manual” , Vikas publishing house, New Delhi, 2015

1902CS554	OBJECT ORIENTED PROGRAMMING LAB	L	T	P	C
		0	0	2	1

COURSE OBJECTIVES

Justify the philosophy of object-oriented programming and the concepts of encapsulation, abstraction, inheritance, and polymorphism.
To make the student learn an object oriented way of solving problems using java.
To make the students to write programs using multithreading concepts and handle exceptions.
Justify the philosophy of object-oriented programming and the concepts of encapsulation, abstraction, inheritance, and polymorphism.
To make the student learn an object oriented way of solving problems using java.
To make the students to write programs using multithreading concepts and handle exceptions.

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO1 Develop program to illustrate basic concept of OOP features and C++ concept

CO2 Implement the program using unary and binary operator overloading in C++ CO3

CO3 Write program to implement concept of inheritance and polymorphism in C++ CO4

CO4 Understand and Apply Object oriented features and Java concepts

CO5 Develop and implement program using exception handling and templates in Java

LIST OF EXPERIMENTS:

1. Write a C++ program using Static Data Members
2. Write a C++ program to implement the Multiple constructor in a class
3. Write a C++ program to implement Operator overloading for Unary and binary operator
4. Write a C++ program to implement Constructor in derived classes
5. Write a Java program to implement Control Statements
6. Write a Java program to implement Multi-threaded programming
7. Write a Java program to implement Multiple Inheritance
8. Write a Java program to implement Polymorphism
9. Write a program to implement control flow in Python
10. Write a python programs using functions.

Total: 30 Hours

ADDITIONAL EXPERIMENTS:

1. Program to overload unary and binary operator as Nonmember function.
2. Write a Java program to develop simple application(project) using OOP's concept.

REFERENCES:

1. https://lecturenotes.in/practicals/19363-lab-manuals-for-object-oriented-programming
2. http://studentsfocus.com/cs6461-object-oriented-programming-lab-manual
3. http://bietbvrm.ac.in/public/testimonia
4. http://www.srmuniv.ac.in/sites/default/files
5. https://rcetcsevani.files.wordpress.com/2017/11/ppp-lab-manual.pdf

1904EE552	MINI PROJECT -I	L	T	P	C
		0	0	2	1

GUIDELINE FOR REVIEW AND EVALUATION

The students may be grouped into 2 to 4 and work under a project supervisor. The circuit / system to be designed may be decided in consultation with the supervisor and if possible with an industry. A project report to be submitted by the group, which will be reviewed and evaluated for internal assessment by a Committee constituted by the Head of the Department. At the end of the semester examination the project work is evaluated based on oral presentation and the project report by internal examiners constituted by the Head of the Department

TOTAL: 30HOURS

1904GE551	LIFE SKILLS: APTITUDE – 1	L	T	P	C
	(Common to All Branches)	0	0	2	1

COURSE OBJECTIVES:

1. To brush up problem solving skill and to improve intellectual skill of the students
2. TobeabletocriticallyevaluatevariousreallifesituationsbyresortingtoAnalysisOf key issues and factors
3. To be able to demonstrate various principles involved in solving mathematical problems And thereby reducing the time taken for performing job functions.
4. To enhance analytical ability of students
5. To augment logical and critical thinking of Student

COURSE OUTCOMES:

After completion of the course, Student will be able to

CO 1 - Understand about number system.

CO2 - Gather information about ratio and proportion, averages

CO3 - Discuss about percentages, profit and loss

CO4 –Describe about coding and decoding, direction sense

CO5 – Understand the number and letter series number

MODULE I INTRODUCTION TO NUMBER SYSTEM, BASIC SHORTCUTS OF ADDITION, MULTIPLICATION, DIVISION **6 Hours**

Classification of numbers – Types of Numbers - Divisibility rules - Finding the units digit - Finding remainders in divisions involving higher powers - LCM and HCF Models - Fractions and Digits – Square, Square roots – Cube, Cube roots – Shortcuts of addition, multiplication, Division.

MODULE II RATIO AND PROPORTION, AVERAGES **6 Hours**

Definition of Ratio - Properties of Ratios - Comparison of Ratios - Problems on Ratios - Compound Ratio - Problems on Proportion, Mean proportional and Continued Proportion Definition of Average - Rules of Average - Problems on Average - Problems on Weighted Average - Finding average using assumed mean method.

MODULE III PERCENTAGES, PROFIT AND LOSS **6 Hours**

Introduction Percentage - Converting a percentage into decimals - Converting a Decimal into a percentage - Percentage equivalent of fractions - Problems on percentages - Problems on Profit and Loss percentage- Relation between Cost Price and Selling price - Discount and Marked Price - Two different articles sold at same Cost Price - Two different articles sold at same Selling Price - Gain% / Loss% on Selling Price.

MODULE IV CODING AND DECODING, DIRECTION SENSE **6 Hours**

Coding using same set of letters - Coding using different set of letters - Coding into a number - Problems on R-model - Solving problems by drawing the paths - Finding the net distance travelled - Finding the direction - Problems on clocks - Problems on shadows - Problems on direction sense using symbols and notations.

MODULE V NUMBER AND LETTER SERIES NUMBER AND LETTER ANALOGIES, ODD MAN OUT **6 Hours**

Difference series - Product series - Squares series - Cubes series - Alternate series - Combination series - Miscellaneous series - Place values of letters - Definition of Analogy - Problems on number analogy - Problems on letter analogy - Problems on verbal analogy - Problems on number Odd man out - Problems on letter Odd man out - Problems on verbal Odd man out

TOTAL: 30 HOURS

REFERENCES:

1. Arun Sharma, 'How to Prepare for Quantitative Aptitude for the CAT', 7th edition, McGraw Hills publication, 2016.
2. Arun Sharma, 'How to Prepare for Logical Reasoning for CAT', 4th edition, McGraw Hills publication, 2017.
3. R S Agarwal, 'A modern approach to Logical reasoning', revised edition, S.Chand publication, 2017.
4. R S Agarwal, 'Quantitative Aptitude for Competitive Examinations', Revised edition, S.Chand publication, 2017.
5. Rajesh Verma, "Fast Track Objective Arithmetic", 3rd edition, Arihant publication, 2018.
6. B.S. Sijwalii and InduSijwali, "A New Approach to REASONING Verbal & Non-Verbal", 2nd edition, Arihnat publication, 2014.

ASSESSMENT PATTERN :

1. Two tests will be conducted (25 * 2) - 50 marks
2. Five assignments will be conducted (5*10) - 50 Marks.

1901MCX03	ESSENCE OF INDIAN TRADITIONAL KNOWLEDGE	L	T	P	C
	(Common to All Branches)	2	0	0	0

COURSE OBJECTIVE

To understand Indian Traditional culture and philosophy
To understand the education system in India

COURSE OUTCOME

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

CO1 Describe the culture, literature and religion of India
CO2 Discuss the development of technology and Engineering in India
CO3 Summarize the education system in India

MODULE I INTRODUCTION TO CULTURE 6 Hours

Culture, civilization, culture and heritage, general characteristics of culture, importance of culture in human literature, Indian Culture, Ancient India, Medieval India, Modern India.

MODULE II INDIAN LANGUAGES, CULTURE AND LITERATURE 6 Hours

Indian Languages and Literature-I: the role of Sanskrit, significance of scriptures to current society, Indian philosophies, other Sanskrit literature, literature of south India Indian Languages and Literature-II: Northern Indian languages & literature.

MODULE III RELIGION AND PHILOSOPHY 6 Hours

Religion and Philosophy in ancient India, Religion and Philosophy in Medieval India, Religious Reform Movements in Modern India (selected movements only).

MODULE IV FINE ARTS IN INDIA (ART, TECHNOLOGY& ENGINEERING) 6 Hours

Indian Painting, Indian handicrafts, Music, divisions of Indian classic music, modern Indian music, Dance and Drama, Indian Architecture (ancient, medieval and modern), Science and Technology in India, development of science in ancient, medieval and modern India.

MODULE V EDUCATION SYSTEM IN INDIA 6 Hours

Education in ancient, medieval and modern India, aims of education, subjects, languages, Science and Scientists of Ancient India, Science and Scientists of Medieval India, Scientists of Modern India.

TOTAL 30 Hours

REFERENCES:

1. Kapil Kapoor, “Text and Interpretation: The India Tradition”,ISBN: 81246033375, 2005
2. “Science in Samskrit”, Samskrita Bharti Publisher, ISBN 13: 978-8187276333, 2007
3. NCERT, “Position paper on Arts, Music, Dance and Theatre”, ISBN 81-7450 494-X, 200
4. S. Narain, “Examinations in ancient India”, Arya Book Depot, 1993
5. Satya Prakash, “Founders of Sciences in Ancient India”, Vijay Kumar Publisher, 1989
6. M. Hiriyanna, “Essentials of Indian Philosophy”, Motilal Banarsidass Publishers, ISBN 13: 978- 8120810990, 2014