DIPLOMA WING

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA , BHOPAL

SCHEME OF STUDIES & EXAMINATIONS (IMPLEMENTED FROM SESSION : JULY 2023)

SCHEME	NAME OF BRANCH	BRANCH CODE	SEMESTER
OCBC JULY 2022/2023	ET & TELECOMMUNICATION	E03	FOURTH (IV)

S.N.	PAPER CODE	SUBJECT CODE	SUBJECT NAME	THEORY COMPONENT								PRACTICAL COMPONENT					TOTAL CREDITS	TOTAL MARKS
				HRS PER WEEK	CREDITS	TERM WORK				THEORY PAPER		HRS PER WEEK	CREDITS	LAB WORK	PRACTICAL EXAM/VIVA			
						QUIZ/ASSIGNMENT	MID TERM TEST*		TOTAL	MARKS	DURATION				MARKS	DURATION		
							I	II										
1	7461	401	MICROCONTROLLER & APPLICATI.	4	4	10	10	10	30	70	03 Hrs.	2	1	20	30	03 Hrs.	5	150
2	7462	402	ANALOG & DIGITAL COMM. SYSTEM	4	4	10	10	10	30	70	03 Hrs.	4	2	20	30	03 Hrs.	6	150
3	7463	403	CONSUMER ELECTRONICS	4	4	10	10	10	30	70	03 Hrs.	0	0	0	0	0	4	100
4	7464	404	ELECTRONIC EQUIPMENT MAINT.	3	3	10	10	10	30	70	03 Hrs.	0	0	0	0	0	3	100
5	7465	405	LINEAR INTEGRATED CIRCUITS	3	3	10	10	10	30	70	03 Hrs.	4	2	20	30	03 Hrs.	5	150
6			MINOR PROJECT	0	0	0	0	0	0	0	0	4	2	20	30	03 Hrs.	2	50
7			ESSENCE OF INDIAN KNOWLEDGE & TRADITION	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8			LIBERARY /SEMINAR/VISITS etc.	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
TOTAL				20	18				150	350		16	7	80	120		25	700

NOTE - (1)* Two Best,out of Three Mid Term Tests (Progressive Tests) Marks should be entered here.

GRAND TOTAL OF CREDITS	GRAND TOTAL OF MARKS
25	700

DIPLOMA WING
RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN ELECTRONICS& TELECOMMUNICATION ENGINEERING (E03)
SEMESTER VI

COURSE TITLE	:	MICROCONTROLLER AND APPLICATIONS
PAPER CODE	:	7461
SUBJECT CODE	:	401
TREORY CREDITS	:	04
PRACTICAL CREDITS	:	01

Course Objective:

The aim of this course is to help the student to understand:

- Basic Microprocessor and microcontroller
- Architecture of 8051
- Interfacing of 8051
- Introduction to ARM processor

Course Content:

Unit	Topics and Sub-topics	Hours	Marks
Unit-1 Introduction to 8085 and 8051	• Introduction & Functional Block Diagram of microprocessor 8085 • Introduction to Microcontrollers • Functional block diagram of 8051 • Description of CPU, memory, Internal registers, Digital Input/Output ports, timers and counters, Clock circuit,Reset circuit, Stack and stack pointer, Input-output ports,Interrupts • Pin Diagram of 8051 • Comparison of Microprocessors and Microcontrollers • Comparison between High Level Language & Low Level Language	**12**	**20**

Unit 2- Programming with 8051	• Types of Addressing modes
	• Classification of 8051 instruction set:
	  • Data transfer instruction
	  • Arithmetic Instructions
	  • Logical instructions
	  • Bit manipulations instructions
	  • Branching instructions(unconditional and conditional)
	  • Machine instruction
	  • I/O Programming instructions
	• Introduction to Interrupts in 8051: Internal and External
	• Simple Assembly Language program based on Arithmetic, Logic & Data transfer instructions
		12	**20**

Unit 3- Components of MCS51	Concept and functions of following : • Timers and Counters • Interrupt control • Serial I/O Ports	**12**	**10**
Unit 4 Interfacing of MCS51	• Interfacing of single LED with 8051using Assembly Language • Concept and diagram of following interfacing with MCS51: • 4X4 Hex keyboard • 4 Digit Seven segment Display • 16X2 LCD • Sensor-Temperature (LM35) • ADC 0808 chip • PPI 8255 chip •	**12**	**10**
Unit 5- ARM processor	• Features and comparison of CISC and RISC processors • Features of ARM microcontrollers • Architecture and features of ARM7	**12**	**10**

REFERENCES / SUGGESTED LEARNING RESOURCES:

S. No.	Title of Book	Author	Publication
1.	Microcontrollers and Applications	Santanu Chattopadhyay	AICTE
2.	The 8051 Micro Controller and Embedded Systems	Muhammad Ali Mazidi & Janice Gilli Mazidi,R.D.Kinely	PHI Pearson Education, 5th Indian reprint
3.	Microprocessor and Microcontrollers	Krishna Kant	Eastern Company Edition, Prentice Hall of India, New Delhi
4.	Microprocessor & Microcontroller Architecture: Programming & Interfacing using 8085,8086,8051	Soumitra Kumar Mandal	McGraw Hill Edu,
5.	ARM Developer's Guide.UM10139 LPC214X User manual	Andrew N.Sloss, Dominic Symes, Chris Wright	User manual

SUGGESTED PRACTICALS/ EXERCISES :

S.No.	Practical Outcomes (PrOs)
1.	Identifying pins of 8085,8051
2.	Programming 8051 with Arithmetic logic instructions [Assembly]
3.	Programming 8051 with Data Transfer and Branching instructions. [Assembly]

4.	Programming 8051 using Ports [Assembly or C]
5.	Interfacing 8051 single LED with Pushbutton switch [Assembly or C]
6.	Interfacing 8051seven segment Display [Assembly or C]
7.	Delay generation using Timer [Assembly or C]
8.	Interfacing LCD Display with 8051 [Assembly or C]
9	Interfacing with 4x4 Hex Keypad with 8051[Assembly or C]
10	Programming 8051 using ADC [Assembly or C]
11	Identifying pins of ARM Based LPC2148 microcontroller

SUGGESTED SOFTWARE/LEARNING WEBSITES:

https://www.tutorialspoint.com/microprocessor/microcontrollers_application.htm

www.arm.com

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DIPLOMA IN ELECTRONICS& TELECOMMUNICATION ENGINEERING (E03)

SEMESTER IV

COURSE TITLE	:	**ANALOG AND DIGITAL COMMUNICATION SYSTEMS**
PAPER CODE	:	7462
SUBJECT CODE	:	402
TREORY CREDITS	:	04
PRACTICAL CREDITS	:	02

Course Objective:

By the end of the course, students should be able to:

1. Understand the structure and function of a basic digital communication system
2. Apply sampling and quantization techniques in pulse modulation systems
3. Demonstrate and analyze baseband and pulse modulation methods
4. Compare ASK, FSK, and PSK modulation techniques with practical waveform analysis
5. Evaluate the performance of digital communication systems using BER and Eye Diagrams

Course Content:

Unit	**Topics and Sub-topics**	**Hours**	**Marks**
Unit 1: Fundamentals of Digital Communication	Analog vs. Digital Communication, Components of a digital communication system (block diagram overview) Advantages and limitations of digital systems Review of signals and systems: periodic/non-periodic, deterministic/random Introduction to time domain vs. frequency domain (qualitative) Noise and Signal-to-Noise Ratio (SNR) basics Concept of bandwidth and data rate (qualitative)	**12**	**15**
Unit 2: Sampling andQuantization	Sampling Theorem for low-pass signals Types of sampling: Ideal, Natural, Flat-top Aliasing and Anti-aliasing filters (basic concept) Quantization: Uniform and Non-uniform Quantization noise and SNR Concept of Companding (μ-law and A-law only)	**10**	**10**
Unit 3: Pulse Modulation and Baseband Transmission	Pulse Code Modulation (PCM): Generation and reconstruction Delta Modulation (DM) and Adaptive Delta Modulation (ADM): Concept and comparison Time Division Multiplexing (TDM): Concept and simple frame structure	**14**	**15**

	Inter-symbol interference (ISI): Concept only Eye diagram: interpretation and use (qualitative)		
Unit 4: Digital Carrier Modulation Techniques	Need for carrier modulation in digital systems Amplitude Shift Keying (ASK): waveform and detection Frequency Shift Keying (FSK): waveform and detection Phase Shift Keying (PSK): waveform and detection Basic idea of QPSK (no math, just concept and waveform) Bandwidth comparison and noise performance (qualitative) Block diagram of a digital receiver Concept of matched filtering (qualitative only) Bit Error Rate (BER): Definition and significance Factors affecting BER (noise, bandwidth, signal power) Basics of synchronization: timing and clock recovery	**12**	**15**
Unit 5: Information Theory and Coding	Concept of Information and Bit as a unit of information, bit representation and basic logic, Concept of Bandwidth and Data Rate, Meaning of entropy as measure of uncertainty redundancy in messages, removal of redundancy Line Coding: NRZ, RZ, Manchester – characteristics and need Source Coding: Huffman, Shannon-Fano Importance and basic understanding of Shannon Capacity Formula Relation of bandwidth, SNR, and data rate Introduction to secure communication: Basic concept of encryption	**12**	**15**

SUGGESTED LEARNING RESOURCES:

S. No.	**Title of Book**	**Author(s)**	**Publication**
1	Principles of Communication Systems	Taub and Schilling	McGraw-Hill Education
2	Analog and Digital Communication	R. P. Singh and S. D. Sapre	Tata McGraw-Hill
3	Communication Systems	Sanjay Sharma	S. K. Kataria & Sons
4	Modern Digital and Analog Communication Systems	B. P. Lathi and Zhi Ding	Oxford University Press
5	Digital Communication: Fundamentals and Applications	Bernard Sklar and P. K. Ray	Pearson Education
6	Electronic Communication Systems	George Kennedy and Bernard Davis	McGraw-Hill Education
7	Communication Systems	Simon Haykin	John Wiley & Sons

SUGGESTED LIST OF PRACTICALS:

1.To implement Pulse Code Modulation (PCM) and observe sampled, quantized, and encoded signals using trainer kit.
2.To perform Differential Pulse Code Modulation (DPCMM) using trainer kit and analyze their behaviour.
3.To perform Delta Modulation (DM) using trainer kit and analyze their behaviour.
4.To perform Adaptive Delta Modulation (ADM) using trainer kit and analyze their behaviour.
5.To implement Time Division Multiplexing (TDM) and demultiplexing using trainer kit and observe frame synchronization.
6.To generate and observe ASK waveforms using modulation kit and verify signal characteristics.
7.To generate and observe FSK waveforms using modulation kit and verify signal characteristics.
8.To generate and observe PSK waveforms using modulation kit and verify signal characteristics.
9.To generate and compare line-coded waveforms (NRZ, RZ, and Manchester) and observe their characteristics using CRO or simulation tools.
10. To simulate and observe Eye Diagrams for baseband signals and analyze the effects of timing jitter and inter-symbol interference (ISI).

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DIPLOMA IN ELECTRONICS& TELECOMMUNICATION ENGINEERING (E03)

SEMESTER IV

COURSE TITLE	:	**CONSUMER ELECTRONICS**
PAPER CODE	:	7463
SUBJECT CODE	:	403
TREORY CREDITS	:	04
PRACTICAL CREDITS	:	00

Course Objective: The aim of this course is to help the student to understand different microphones and speakers, troubleshoot the audio system, understand the operating principle of color TV, troubleshoot electronics appliances and understand electromechanical system used Electronic Appliances.

Course Content:

Unit	Topics and Sub-topics	Hours	Marks
Unit-1 Audio Fundamentals and Devices	**Basic characteristics of sound signal:** **Audio level metering** **Decibel level in acoustic measurement** **Fidelity** **Sensitivity** **selectivity** **Working principle and characteristics of Microphone,** **Types of Microphones:carbon, moving coil and crystalMicrophone.** **Working principle and characteristics of speaker.** **Type of speaker: PMMC, Direct radiating and indirect radiating speaker** **Principle of Digital and optical sound recording**	**12**	**15**
Unit 2 –Audio Systems	**Introduction of home theatre sound systemand surround sound** **block diagram of Digital console using ICs TDA 7021T** **Block diagram of FMtuner** **Introduction and block diagram of PA address system.** **Planning of PA system for public meeting and auditorium.**	**10**	**10**
Unit 3- Television Systems	**Monochrome TV standards:** **scanning process: horizontal and vertical scanning** **aspect ratio** **persistence of vision and flicker** **interlace scanning** **picture resolution** **Composite video signal** **Colour TV standards: colour theory, hue, brightness, saturation** **Luminance, chrominance** **construction and working of TV camera:vidicon and plumbicon** **Transmission standards for TV system in India**	**12**	**15**

Unit 4- Television Receivers and Video Systems	**Block diagram of PAL-D colour TV receiver** **Introduction and Comparison of Digital TVs: - LCD, LED, PLASMA, HDTV, 3-D TV, projection TV** **Block Diagram of DTH receiver** **Introduction of Video interface, Digital Video Interface, SDI, HDMI** **Block diagram of CD and DVD player.**	**14**	**15**
Unit 5- Home / Office Appliances	**Block Diagram and working of** **FAX** **Photocopier** **Microwave Oven** **Washing Machine** **Air conditioner** **Refrigerator** **Introduction toDigital camera andCam coder**	**12**	**15**

SUGGESTED LEARNING RESOURCES:

References:

1. Consumer Electronics : Amit m Joshi, Maulin M Joshi and Urvashi Prakash Shukla , AICTE

2. Consumer Electronics : Bali S.P. Pearson Education India,2010 , latest edition

3. Audio video systems : principle practices & troubleshooting Bali R and Bali , S.P Khanna Book Publishing Co. (P) Ltd., 2010Delhi , India, latest edition

4. Modern Television practices: Gulati R.R. New Age International Publication (P) Ltd. New Delhi Year 2011, latest edition

5. Audio video systems: Gupta R.G.Tata Mc graw Hill, New Delhi, India 2010, latest edition

6. Mastering Digital Television:. Whitaker Jerry & Benson Blair Tata Mc graw Hill, New Delhi, India 2010

7. Standard handbook of Audio engineering : Whitaker Jerry & Benson Blair McGraw-Hill Professional, 2010 , latest edition.

DIPLOMA WING

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN ELECTRONICS & TELECOMMUNICATION ENGINEERING (E03)

SEMESTER IV

COURSE TITLE	:	**Electronics Equipment Maintenance**
PAPER CODE	:	7464
SUBJECT CODE	:	404
TREORY CREDITS	:	03
PRACTICAL CREDITS	:	00

Course Objective: The aim of this course is to understand the procedure of troubleshooting electronic equipment, test passive components, identify causes of failures in semiconductor devices and fault diagnosis, repair surface mount assemblies and PCBs.

Course Content:

Unit	Topics and Sub-topics	Hours	Marks
Unit-1: Fundamental of troubleshooting procedures	• Basics of Electronic circuits, • Types of PCB: Single, Double, Multilayer, • Reading drawing & diagram: Block diagram, Circuit diagram, Wiring diagram, • Equipment failures, Causes of equipment failures, • Steps of Troubleshooting Process: Fault establishment, Fault location, Fault correction, • Introduction of Electronic test equipment: Analog multimeter, Digital multimeter, Oscilloscope, • Troubleshooting techniques: Functional area approach, Split half method, Divergent paths, Convergent paths, Feedback paths, Switching paths, • Steps for Approaching components for tests, • Temperature sensitive Intermittent problems, • Corrective action: Arranging replacement parts, Component replacement, Performance check, Replacement of circuit boards, • Situations where repairs should not be attempted.	**10**	**14**
Unit 2 – Passive Components and Their Testing	• Introduction to Passive Components: Resistors, Capacitors, Inductors, • Failures in fixed resistors, testing of resistors, • variable resistors (Potentiometer) , failures in potentiometers, testing of potentiometers, • Basics of LDRs and Thermistors, • Types of capacitors: Paper, Mica, Ceramic, Plastic, Electrolytic, • Performance of capacitors, Failures in capacitors, testing of capacitors, Precautions While testing capacitors, • Types of variable capacitor: Button, Tubular • Testing and measurement of inductors,	**10**	**14**

Unit 3- Testing of Semiconductor Devices	• Testing and Causes of failure in Semiconductor Devices: - ▪ Zener diode, ▪ Varactor diode, ▪ Varistor, ▪ Light Emitting Diodes (LED), ▪ Photo-diode, ▪ Bi-polar Junction Transistors (BJT), ▪ Field-effect Transistors (FET), ▪ Silicon Controlled Rectifier (SCR), ▪ TRIAC • Fault diagnosis in Op-amp circuits	**08**	**14**
Unit 4- Troubleshooting Digital Circuits	• List of Logic IC Series, • Introduction of Packages in Digital ICs: DIP, Flat pack, • Identification of IC, • Handling ICs: Removing and Mounting IC in Circuit board, • Digital troubleshooting methods – typical faults, testing digital ICs with pulse generators, • Digital IC troubleshooters: Logic clip, Logic Probe, Logic Pulser, • Special consideration for fault diagnosis in digital circuits, Handling precautions for ICs sensitive to static electricity, • Microprocessor troubleshooting techniques, testing microprocessors, • Testing of RAM and ROM,	**10**	**14**
Unit-5- Repair of Surface Mount Assemblies	• Introduction of Surface Mount Technology and surface mount devices, • Surface Mount Semiconductor packages – SOIC, SOT, LCCC, PLCC, Cylindrical Diode Packages, • Packaging of Passive Components as SMDs, • Repairing Surface Mount PCBs: Heating Methods, Removal and replacement of SMD.	**07**	**14**

SUGGESTED LEARNING RESOURCES:

References:

S. No.	Title of Book	Author	Publication
1	Modern Electronic Equipment: Troubleshooting, Repair and Maintenance	R. S. Khandpur	TMH 2006
2	Electronic Equipment Maintenance	Dr. Chanchal Sharma	AICTE
3	Electronic Instruments and Systems: Principles, Maintenance and Troubleshooting	R. G. Gupta	Tata McGraw Hill Edition 2001
4	Student Reference Manual for Electronic Instrumentation Laboratories	David L Terrell	Butterworth-Heinemann
5	Electronic Testing and Fault Diagnosis	G. C. Loveday, A. H	Wheeler Publishing

DIPLOMA WING
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DIPLOMA IN ELECTRONICS& TELECOMMUNICATION ENGINEERING (E03)
SEMESTER IV

COURSE TITLE	**:**	**LINEAR INTEGRATED CIRCUITS**
PAPER CODE	**:**	**7465**
SUBJECT CODE	**:**	**405**
TIME DURATION FOR THEORY CLASS	**:**	**45 Hrs.**

Course Objective: To help diploma students understand IC fabrication processes, operational amplifier applications, analog multiplier and PLL operationsand special function ICs with their practical applications in electronic systems

COURSE CONTENT:

Unit	Topics and Sub-Topics	Duration	Marks
UNIT 1 - FUNDAMENTALS OF IC TECHNOLOGY AND OP-AMP BASICS	**1.1 Introduction to ICs** • Advantages of ICs over discrete components **1.2Manufacturing process of monolithic ICs** • Wafer preparation • Epitaxial growth • Oxidation, photolithography • Diffusion, Metallization and Packaging **1.3 Construction of monolithic components** • Bipolar transistor: structure, fabrication steps, and cross-sectional view • Integrated Resistors: diffused and thin film types **1.4 Current mirror and current sources** • Basic current mirror circuit and operation **1.5 Voltage sources and references** • Zener diode voltage reference: concept **1.6Introduction to Operational amplifier IC 741** • Block diagram with stage identification • DC characteristics: input offset voltage, bias current, and offset current • AC characteristics: gain, bandwidth, slew rate, settling time • Open loop and closed loop configurations: differences	**09 hrs.**	**14**

Unit	Topics and Sub-Topics	Duration	Marks

UNIT 2 – BASIC OP-AMP CIRCUITS AND APPLICATIONS	**2.1 Basic Op-Amp Circuits** • Inverting amplifier: circuit diagram, working principle, and gain equation • Non-inverting amplifier: circuit diagram, working principle, and gain equation • Sign Changer: circuit and operation • Scale Changer: circuit and operation • Voltage Follower: circuit, unity gain buffer operation and applications **2.2 Signal Converters** • V-to-I converter: circuit diagram with floating load • I-to-V converter: circuit diagram and transfer characteristics **2.3 Adder and Subtractor Circuits for Two Inputs** • Summing amplifier (adder): circuit diagram, working principle, and output equation • Subtractor: circuit diagram, working principle, and output equation • Instrumentation amplifier: circuit diagram& working **2.4 Integrator&Differentiator** • Circuit diagram and operation	**09 hrs.**	**14**
UNIT 3 – ADVANCED OP-AMP APPLICATIONS AND CIRCUIT BUILDING BLOCKS	**3.1 Differential amplifier using Op-Amp** • Basic differential pair: circuit and operation • CMRR and PSRR: definitions and importance **3.2 Comparators and Waveform Circuits** • Comparators: basic circuit and zero crossing detection • Schmitt trigger: circuit diagram, and waveform conversion • Precision rectifier: circuit diagrams for half-wave and full-wave precision rectification • Peak detector: circuit diagram and hold operation **3.3 Active Filters** • Low-pass Butterworth filter: circuit diagram and frequency response • High-pass Butterworth filter: circuit diagram and frequency response • Band-pass Butterworth filter: circuit diagram and frequency response	**09 hrs.**	**14**
UNIT 4 – ANALOG MULTIPLIERS AND SIGNAL PROCESSING CIRCUITS **UNIT 4 –**	**4.1 Analog Multiplier Circuits** • Analog Multiplier using Emitter Coupled Transistor Pair: circuit diagram and operation • Gilbert Multiplier cell: circuit diagram, quadrant operation, and transfer function **4.2 Commercial Analog Multiplier ICs** • IC AD534: pin diagram, specifications, applications: modulation, demodulation **4.3Sample and Hold Circuits**	**09 hrs.**	**14**

ANALOG MULTIPLIERS AND SIGNAL PROCESSING CIRCUITS	• Basic sample and hold: circuit diagram and operation **4.4 Phase Locked Loop Fundamentals** • Basic PLL block diagram and operation • Closed loop analysis: lock range, capture range, and stability considerations • Monolithic PLL IC 565: pin diagram, functional blocks • Application of PLL AM & FM demodulation		
UNIT 5 – WAVEFORM GENERATORS AND SPECIAL FUNCTION ICs	**5.1 Waveform Generator Circuits** • Timer IC 555: pin diagram, internal block diagram andapplication: Multivibrators- astable, monostable, and bistable circuit diagrams and waveform **5.2 Oscillator Circuits using Op-Amp** • Sine-wave generators: Wien bridge and phase shift oscillator circuits with circuit diagram and operation • Triangular wave generator: circuit diagram and operation • Saw-tooth wave generator: circuit diagram and operation **5.3FunctionGenerator** ICs • ICL8038 function generator: pin diagram, block diagram • IC Voltage regulators – Three terminal fixed and adjustable voltage regulators - IC 7805,7905,723	**09 hrs.**	**14**

LINEAR INTEGRATED CIRCUITS LAB

List of Practicals/Experiments:

1. Operational Amplifiers (IC741)-Characteristics

2. Inverting and Non inverting Amplifiers

3. Summer, Difference Amplifier and Instrumentation Amplifier

4. Waveform shaping circuits using opamp

5. Comparator and Schmitt trigger

6. Waveform Generation using Op-Amp (IC741).

7. Applications of Timer IC555.

8. Frequency Response of Active filters.

9. Study and application of PLL IC's

10. Op-Amp voltage Regulator- IC 723

Textbooks/References:

- Linear Integrated Circuit – Dr. Battula Tirumala Krishna, AICTE Publication
- Design with operational amplifiers and analog integrated circuits, 3rd Edition – Sergio Franco, Tata McGraw-Hill, 2007
- Linear Integrated Circuits – D Roy Choudhry, Shail Jain, New Age International Pvt. Ltd
- System design using Integrated Circuits – B S Sonde, New Age Pub, 2nd Edition, 2001
- Analysis and Design of Analog Integrated Circuits – Gray and Meyer, Wiley International, 2005
- OP-AMP and Linear ICs – Ramakant A Gayakwad, Prentice Hall / Pearson Education, 4th Edition, 2001
- Linear Integrated Circuits – R. Anand, Khanna Book Publishing
- Operational Amplifier and Linear Integrated Circuits – K Lal Kishore, Pearson Education, 2006

DIPLOMA WING

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

DIPLOMA IN ET. & TELECOMMUNICATION ENGINEERING

SEMESTER - IV

COURSE TITLE	:	MINOR PROJECT
PAPER CODE	:	--
SUBJECT CODE	:	--
TREORY CREDITS	:	00
PRACTICAL CREDITS	:	02

MINOR PROJECT –

Evaluation is based on work done, quality of report performance in viva-voce, presentation etc.

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RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA,BHOPAL

DIPLOMA IN ET. & TELECOMMUNICATION ENGINEERING (E03)

SEMESTER - IV

COURSE TITLE	:	ESSENCE OF INDIAN KNOWLEDGE & TRADITION
PAPER CODE	:	--
COURSE CODE	:	--
TREORY CREDITS	:	00
PRACTICAL CREDITS	:	00

CourseContent:

BasicStructureofIndianKnowledgeSystem:

(i)osद,(ii)उन्नosद(आयosद,/kuqosnxU/kosnLFkk~नR;आदद)(iii)osnkax(f'k{kkdYuuu:rO;kdj.kT;ksur"kNkan),

(iv)उन्नाइग(/keZj~hj~kalk, ~नqjk.k,rdfeL=)

- ModernScienceandIndianKnowledgeSystem
- YogaandHolisticHealthcare
- CaseStudies.

SUGGESTEDTEXT/REFERENCEBOOKS:

S.No.	TitleofBook	Author	Publication
1.	CulturalHeritageofIn-dia-CourseMaterial	V.Sivaramakrishna	BharatiyaVidyaBhavan,Mumbai,5thEdition, 2014
2.	ModernPhysicsandVedant	SwamiJitatmanand	BharatiyaVidyaBhavan
3.	ThewaveofLife	FritzofCapra	
4.	TaoofPhysics	FritzofCapra	
5.	TarkasangrahaofAnnamBhatta,Inernational	V N Jha	ChinmayFoundation,Velliarnad,Amaku,am

6.	ScienceofConsciousnessPsychotherapyandYogaPractices	RNJha	VidyanidhiPrakasham,Delhi,2016