



DIPLOMA WING

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

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

SCHEME
OCBC JULY 2022/2023

NAME OF BRANCH
IC MANUFACTURING

BRANCH CODE
I05

SEMESTER
THIRD (III)

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	7456	301	ELECTRONICS DEVICES AND CIRCUITS	3	3	10	10	10	30	70	03 Hrs.	4	2	20	30	03 Hrs.	5	150
2	7457	302	DIGITAL SYSTEM	3	3	10	10	10	30	70	03 Hrs.	4	2	20	30	03 Hrs.	5	150
3	7458	303	ELECTRONIC MEASUREMENTS AND INSTRUMENTATION	3	3	10	10	10	30	70	03 Hrs.	2	1	20	30	03 Hrs.	4	150
4	7459	304	ELECTRIC CIRCUITS AND NETWORK	4	4	10	10	10	30	70	03 Hrs.	0	0	0	0	0	4	100
5	7561	305	INTRODUCTION TO VLSI FABRICATION	3	3	10	10	10	30	70	03 Hrs.	0	0	0	0	0	3	100
6			SEMICONDUCTOR LAB FAMILIARIZATION.	0	0	0	0	0	0	0	0	4	2	20	30	03 Hrs.	2	50
7			**SUMMER INTERNSHIP- I	0	0	0	0	0	0	0	0	0	2	20	30	03 Hrs.	2	50
8			PROFESSIONAL DEVELOPMENT	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
9			***RECOVERY CLASSES/LIBRARY etc.	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0
TOTAL				16	16				150	350		20	9	100	150		25	750

- NOTE -**
- (1)* Two Best, out of Three Mid Term Tests (Progressive Tests) Marks should be entered here.
 - (2)** 3-4 Weeks Summer Internship after II Semester.
 - (3)***To recover courses if session delays due to summer internship.

GRAND TOTAL OF CREDITS
25

GRAND TOTAL OF MARKS
750



DIPLOMA WING
RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN IC MANUFACTURING (I05)

SEMESTER III

COURSE TITLE	:	ELECTRONIC DIVICES AND CIRCUITS
PAPER CODE	:	7456
SUBJECT CODE	:	301
TREORY CREDITS	:	03
PRACTICAL CREDITS	:	02

Course Content:

Unit 1 – Semiconductor and Diodes

Definition, Extrinsic/Intrinsic, N-type & p-type
PN Junction Diode – Forward and Reverse Bias Characteristics
Zener Diode – Principle, characteristics, construction, working
Diode Rectifiers – Half Wave and Full Wave
Filters – C, LC and PI Filters

Unit 2 – Bipolar Junction Transistor (BJT)

NPN and PNP Transistor – Operation and characteristics
Common Base Configuration – characteristics and working
Common Emitter Configuration – characteristics and working
Common Base Configuration – characteristics and working
High frequency model of BJT
Classification of amplifiers, negative feedback

Unit 3 – Field Effect Transistors

FET – Working Principle, Classification
MOSFET Small Signal model
N-Channel/ P-Channel MOSFETs – characteristics, enhancement and depletion mode, MOS-FET as a Switch
Common Source Amplifiers
Uni-Junction Transistor – equivalent circuit and operation

Unit 4 – SCR DIAC & TRIAC

SCR – Construction, operation, working, characteristics
 DIAC - Construction, operation, working, characteristics
 TRIAC - Construction, operation, working, characteristics
 SCR and MOSFET as a Switch, DIAC as bidirectional switch
 Comparison of SCR, DIAC, TRIAC, MOSFET

Unit 5 – Amplifiers and Oscillators

Feedback Amplifiers – Properties of negative Feedback, impact of feedback on different parameters
 Basic Feedback Amplifier Topologies: Voltage Series, Voltage Shunt Current Series, Current Shunt
 Oscillator – Basic Principles, Crystal Oscillator, Non-linear/ Pulse Oscillator

SUGGESTED LEARNING RESOURCES:

S. No.	Title of Book	Author	Publication
1.	Analog Circuits	A.K. Maini	Khanna Publishing House Ed. 2018 (ISBN: 978-93-86173-584)
2.	Electronic Devices and Circuits	S. Salivahanan and N. Suresh Kumar	McGraw Hill Education; Fourth edition (1 July 2017) ISBN: 978-9339219505
3.	Electronics Devices and circuit theory	Boyestad & Nashelsky	Pearson Education India; 11 edition (2015) ISBN: 978-9332542600
4.	Electronic Principles	Albert Malvino & David Bates	Tata McGraw Hill Publication 2010 ISBN: 978-0070634244
5.	Electronics Devices & Circuits	Jacob Millman	McGraw Hill Education; 4 edition (2015) ISBN: 978-9339219543

SUGGESTED SOFTWARE/LEARNING WEBSITES:

- <https://www.electronics-tutorials.ws/>
- <https://www.youtube.com/watch?v=Rx43l-QpeWQ>
- <https://electronicsforu.com/resources/electronic-devices-and-circuit-theory>

ELCTRONIC DEVICES AND CIRCUITS LAB

Course Content:

SUGGESTED PRACTICALS/ EXERCISES

The practical in this section are PrOs (i.e. sub-components of the COs) to be developed and assessed in the student for the attainment of the competency.

S. No.	Practical Outcomes (PrOs)	Unit No.
1.	Construct the circuit and plot the VI characteristics of the PN Junction Diode , find the cut in voltage	1
2.	Construct the circuit and plot the characteristics of a Zener Diode. Find the breakdown voltage	1
3.	Construct a Half Wave Rectifier and obtain regulation characteristics – Without Filters and with Filters Compare the results	1
4.	Construct a Full Wave Rectifier and obtain regulation characteristics – Without Filters and with Filters Compare the results	1
5.	Construct a Bridge Rectifier and obtain regulation characteristics – Without Filters and with Filters	1
6.	Obtain the characteristics of DIAC and TRIAC	3
7.	Simulate half wave, full wave and bridge rectifier using simulation tool like PSpice/ Orcad/ Multisim.	3
8.	Develop a simulation model for Voltage Series and Voltage Shunt Feedback Amplifiers	5
9.	Develop circuits for Voltage Series and Voltage Shunt Feedback Amplifiers and obtain output plots. Compare the results with the simulation model.	5
10.	Develop a simulation model for Current Series and Current Shunt Feedback Amplifiers	5
11.	Develop circuits for Current Series and Current Shunt Feedback Amplifiers and obtain output plots. Compare the results with the simulation model.	
12.	Total	

Reference Books:

S. No.	Title of Book	Author	Publication
1.	Analog Circuits	A.K. Maini	Khanna Publishing House Ed. 2018 (ISBN: 978-93-86173-584)
2.	Electronic Devices and Circuits	S. Salivahanan and N. Suresh Kumar	McGraw Hill Education; Fourth edition (1 July 2017) ISBN: 978-9339219505
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DIPLOMA WING
RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN IC MANUFACTURING (I05)

SEMESTER III

COURSE TITLE	:	DIGITAL SYSTEM
PAPER CODE	:	7457
SUBJECT CODE	:	302
TREORY CREDITS	:	03
PRACTICAL CREDITS	:	02

Course Content:

Unit 1 – Number Systems & Boolean Algebra

Introduction to different number systems – Binary, Octal, Decimal, Hexadecimal

Conversion from one number system to another.

Boolean variables – Rules and laws of Boolean

Algebra De-Morgan's Theorem

Karnaugh Maps and their use for simplification of Boolean expressions

Unit 2 – Logic Gates

Logic Gates – AND, OR, NOT, NAND, NOR, XOR, XNOR: Symbolic representation and truth table

Implementation of Boolean expressions and Logic Functions using gates

Simplification of expressions

Unit 3 – Combinational Logic Circuits

Arithmetic Circuits – Addition, Subtraction, 1's 2's Complement, Half Adder, Full Adder, Half Subtractor, Full Subtractor, Parallel and Series Adders

Encoder, Decoder

Multiplexer – 2 to 1 MUX, 4 to 1 MUX, 8 to 1 MUX. Applications

Demultiplexer – 1 to 2 DEMUX, 1- 4 DEMUX, 1- 8 DEMUX

Unit 4 – Sequential Logic Circuits

Flip Flops – SR, JK, T, D, FF, JK-MS, Triggering

Counters – 4 bit Up – Down Counters, Asynchronous/ Ripple Counter, Decade Counter- Mod3, Mod 7 Counter, Johnson Counter, Ring Counter

Registers – 4bit Shift Register: Serial In Serial Out, Serial in Parallel Out, Parallel In Serial Out, Parallel In Parallel Out

Unit 5 – Memory Devices

Classification of Memories – RAM Organization, Address Lines and Memory Size,
Static RAM, Bipolar RAM, cell Dynamic RAM, D RAM, DDR RAM

Read Only memory – ROM organization, Expanding memory, PROM, EPROM, EEPROM, Flash
memory

Data Converters – Digital to Analog converters, Analog to Digital Converters

SUGGESTED LEARNING RESOURCES:

S.No.	Title of Book	Author	Publication
1.	Digital principles & Applications	Albert Paul Malvino & Donald P. Leach	McGraw Hill Education; Eighth edition ISBN: 978-9339203405
2.	Digital Electronics	Roger L. Tokheim Macmillian	McGraw-Hill Education (ISE Editions); International 2 Revised ed edition ISBN: 978-0071167963
3.	Digital Electronics – an introduction to theory and practice	William H. Gothmann	Prentice Hall India Learning Private Limited; 2 edition ISBN: 978-8120303485
4.	Fundamentals of Logic Design	Charles H. Roth Jr.	Jaico Publishing House; First edition ISBN: 978-8172247744
5.	Digital Electronics	R. Anand	Khanna Publications, New Delhi (Edition 2018) ISBN: 978-93-82609445

DIGITAL SYSTEM LAB

Course Content:

SUGGESTED PRACTICALS/ EXERCISES

The practical in this section are PrOs (i.e. sub-components of the COs) to be developed and assessed in the student for the attainment of the competency.

S. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. Required
1.	To verify the truth tables for all logic gates – NOT OR AND NAND NOR XOR XNOR using CMOS Logic gates and TTL Logic Gates	1	02
2.	Implement and realize Boolean Expressions with Logic Gates	2	02
3.	Implement Half Adder, Full Adder, Half Subtractor, Full subtractor using ICs	3	02
4.	Implement parallel and serial full-adder using ICs	3	02
5.	Design and development of Multiplexer and De-multiplexer using multiplexer ICs	3	02
6.	Verification of the function of SR,D, JK and T Flip Flops	4	02
7.	Design controlled shift registers	4	02
8.	Construct a Single digit Decade Counter (0-9) with 7 segment display	4	03
9.	To design a programmable Up-Down Counter with a 7 segment display.	4	03
10.	Study of different memory ICs	5	02

S. No.	Practical Outcomes (PrOs)	Unit No.	Approx. Hrs. Required
11.	Study Digital- to – Analog and Analog to Digital Converters	5	02
12.	Simulate in Software (such as PSpice) an Analog to Digital Converter	5	03
13.	Simulate in Software (such as PSpice) an Analog to Digital Converter	5	03
	Total		30

Reference Books:

S.No.	Title of Book	Author	Publication
1.	Digital principles & Applications	Albert Paul Malvino & Donald P. Leach	McGraw Hill Education; Eighth edition ISBN: 978-9339203405
2.	Digital Electronics	Roger L. Tokheim Macmillan	McGraw-Hill Education (ISE Editions); International 2 Revised ed edition ISBN: 978-0071167963
3.	Digital Electronics – an introduction to theory and practice	William H. Gothmann	Prentice Hall India Learning Private Limited; 2 edition ISBN: 978-8120303485
4.	Fundamentals of Logic Design	Charles H. Roth Jr.	Jaico Publishing House; First edition ISBN: 978-8172247744
5.	Digital Electronics	R. Anand	Khanna Publications, New Delhi (Edition 2018) ISBN: 978-93-82609445



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RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN IC MANUFACTURING (I05)

SEMESTER III

COURSE TITLE	:	ELECTRONIC MEASUREMENTS AND INSTRIMENTATION
PAPER CODE	:	7458
SUBJECT CODE	:	303
TREORY CREDITS	:	03
PRACTICAL CREDITS	:	01

Course Content:

Unit – I Basics of Measurements and Bridges

Accuracy & precision, Resolution

Types of Errors

DC Bridges – Wheatstone and Kelvin Double Bridge

AC Bridges - Maxwell’s Bridge, Hay’s Bridge, Anderson Bridge, De-Sauty’s Bridge

Unit- II Potentiometer

Basic DC slide wire

PotentiometerCrompton’s DC

Potentiometer Applications of

DC Potentiometer AC

Potentiometers

Applications of AC Potentiometers

Unit- III Measuring Instruments

Permanent Magnet Moving Coil Instruments

(PMMC)Moving Iron type Instruments (MI)

Electro Dynamo Type Instruments

Single Phase Energy Meter

Unit- IV Electronic Instruments

Electronic Voltmeter and Digital

VoltmeterElectronic Multimeters

Q – Meter

Vector Impedance Meter

Unit- V Oscilloscopes

Cathode ray tube: construction, operation, screens, graticules

Vertical deflection system, Horizontal deflection system, Delay line,

Measurement of frequency, time delay, phase angle and modulation index (trapezoidal meth-od)

Oscilloscope probe: Structure of 1:1 and 10:1

probeMultiple Trace CRO

Unit- VI Transducers

Classification, Selection Criteria, Characteristics, Construction, Working Principles and Application of following Transducers:

RTD, Thermocouple,

Thermistor LVDT, Strain

Gauge

Load Cell

Piezoelectric Transducers

SUGGESTED LEARNING RESOURCES:

S. No.	Title of Book	Author	Publication
1.	Electrical & Electronic Measurement & Instruments	A.K. Sawhney	Dhanpat Rai & Sons, India
2.	Electronic Instrument and Measurement Technique	W.D. Cooper	Prentice Hall International, India.
3.	Electronic Measurement & Instrumentation	J.G. Joshi	Khanna Publishing House, Delhi
4.	Measurement systems application and design	E.O. Doebelin and D. N. Manik	The McGraw-Hill
5.	Electronic Measurements and Instrumentation	Oliver and Cage	The McGraw-Hill
6.	Basic Electrical Measurement	M.B. Stout	Prentice hall of India, India
7.	Electronic Instrumentation	H. S. Kalsi	The McGraw-Hill
8.	Electrical and Electronics Measurement and Instrumentation	Prithwiraj Pukrait, Budhadya Biswas, Santanu Das, Chiranjib Koley	The McGraw-Hill

ELECTRONIC MEASUREMENTS AND INSTRUMENTATION LAB

Course Content:

SUGGESTED PRACTICALS/ EXERCISES

The practical in this section are PrOs (i.e. sub-components of the COs) to be developed and assessed in the student for the attainment of the competency.

S. No.	Practical Outcomes (PrOs)	Unit No.	Approx Hrs. Required
1.	Measure unknown inductance using following bridges (a) Anderson Bridge (b) Maxwell Bridge	I	4
2.	Measure Low resistance by Kelvin's Double Bridge	I	2
3.	Calibrate an ammeter using DC slide wire potentiometer	II	2
4.	Calibrate a voltmeter using Crompton potentiometer	II	2
5.	Measure low resistance by Crompton potentiometer	II	2
6.	Calibrate a single-phase energy meter by phantom loading	III	2
7.	Study the working of Q-meter and measure Q of coils	IV	2

8.	Study working and applications of (i) C.R.O. (ii) Digital Storage C.R.O. & (iii) C.R.O. Probes	V	2
9.	Measurement of displacement with the help of LVDT	VI	2
10.	Draw the characteristics of the following temperature transducers (a) RTD (Pt-100) (b) Thermistor	VI	2
11.	Measurement of strain/force with the help of strain gauge load cell	VI	2

Reference Books:

S. No.	Title of Book	Author	Publication
1.	Electrical & Electronic Measurement & Instruments	A.K. Sawhney	Dhanpat Rai & Sons, India
2.	Electronic Instrument and Measurement Technique	W.D. Cooper	Prentice Hall International, India.
3.	Electronic Measurement & Instrumentation	J.G. Joshi	Khanna Publishing House, Delhi
4.	Measurement systems application and design	E.O. Doebelin and D. N. Manik	The McGraw-Hill
5.	Electronic Measurements and Instrumentation	Oliver and Cage	The McGraw-Hill
6.	Basic Electrical Measurement	M.B. Stout	Prentice hall of India, India
7.	Electronic Instrumentation	H. S. Kalsi	The McGraw-Hill
8.	Electrical and Electronics Measurement and Instrumentation	Prithwiraj Pukrait, Budhaditya Biswas, Santanu Das, Chiranjib Koley	The McGraw-Hill



DIPLOMA WING
RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
DIPLOMA IN IC MANUFACTURING (105)
SEMESTER III

COURSE TITLE	:	ELECTRIC CIRCUITS AND NETWORK
PAPER CODE	:	7459
SUBJECT CODE	:	304
THEORY CREDITS	:	04
PRACTICAL CREDITS	:	00

Course Content:

Unit – 1 Basics of Network and Network Theorem

Node and Mesh
Analysis
Superposition
Theorem Thevenin
Theorem Norton
Theorem
Maximum Power transfer theorem
Reciprocity Theorem

Unit- 2 Graph Theory

Graph of network, tree, incidence matrix
F- Tie Set
Analysis F-Cut
Set Analysis
Analysis of resistive network using cut-set and tie-set
Duality

Unit- 3 Time Domain and Frequency Domain Analysis

Solution of first and second order differential equations for Series and parallel R-L, R-C, R-L-C circuits
Initial and Final conditions in network elements
Forced and Free response, time constants
Steady State and Transient State Response
Analysis of electrical circuits using Laplace Transform for standard inputs (unit, Ramp, Step)

Unit- 4 Trigonometric and exponential Fourier series

Discrete spectra and symmetry of waveform
Steady state response of a network to non-sinusoidal periodic inputs, power factor, effective values
Fourier transform and continuous spectra

Unit- 5 Two Port Network

Two Port Network
Open Circuit Impedance
Parameters Short Circuit
Admittance Parameters
Transmission Parameters
Hybrid Parameters
Interrelationship of Two Port
Network Inter Connection of Two
Port Network

SUGGESTED LEARNING RESOURCES:

SUGGESTED SOFTWARE/LEARNING

WEBSITES

S. No.	Title of Book	Author	Publication
1	Networks and Systems	Ashfaq Husain	Khanna Publishing House
2	Network Analysis	M. E. Van Valkenburg	Prentice Hall of India
3	Engineering Circuit Analysis	W. H. Hayt, J. E. Kemmerly and S. M. Durbin	McGraw Hill
4	Electrical Circuits	Joseph Edminister	Schaum's Outline, Tata McGraw Hill
5	Basic Circuit Theory	Lawrence P. Huelsma	Prentice Hall of India
6	Network & Systems	D. Roy Choudhury	Wiley Eastern Ltd
7	Linear Circuit Analysis	De Carlo and Lin	Oxford Press



DIPLOMA WING
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DIPLOMA IN IC MANUFACTURING (105)
SEMESTER III

COURSE TITLE	:	INTRODUCTION TO VLSI FABRICATION
PAPER CODE	:	7561
SUBJECT CODE	:	305
THEORY CREDITS	:	03
PRACTICAL CREDITS	:	00

Course Content:

Unit 1– Introduction: History of IC’s; Operation & Models for Devices of Interest: CMOS and MEMS. Electronic Materials: Crystal Structures, Defects in Crystals, Si, Poly Si, Si Crystal Growth. Clean room and Wafer Cleaning: Definition, Need of Clean Room, RCA cleaning of Si.

Unit 2– Oxidation: Dry and Wet Oxidation, Kinetics of Oxidation, Oxidation Rate Constants, Dopant Redistribution, Oxide Charges, Device Isolation, LOCOS, Oxidation System

Unit 3– Lithography: Overview of Lithography, Radiation Sources, Masks, Photoresist, Components of Photoresist Optical Aligners, Resolution, Depth of Focus, Advanced Lithography: E-beam Lithography, X-ray Lithography, Ion Beam Lithography

Unit 4– Diffusion: Pre-Deposition and Drive-in Diffusion Modeling, Dose, 2-Step Diffusions, Successive Diffusion, Lateral Diffusion, Series Resistance, Junction Depth, Irvin’s Curves, Diffusion System. Ion Implantation: Problems in Thermal Diffusion, Advantages of Ion Implantation, Applications in ICs, Ion Implantation System, Mask, Energy Loss Mechanisms, Depth Profile, Range & Straggle, Lateral Straggle, Dose, Junction Depth, Ion Implantation Damage, Post Implantation Annealing, Ion Channeling, Multi Energy Implantation

Unit 5– Thin Film Deposition: Physical Vapor Deposition: Thermal evaporation, Resistive Evaporation, Electron beam evaporation, Laser ablation, Sputtering Chemical Vapor Deposition: Advantages and disadvantages of Chemical Vapor deposition (CVD) techniques over PVD techniques, reaction types, Boundaries and Flow, Different kinds of CVD techniques: APCVD, LPCVD, Metalorganic CVD (MOCVD), Plasma Enhanced CVD etc.

Unit 6– Etching: Anisotropy, Selectivity, Wet Etching, Plasma Etching, Reactive Ion Etching.

Unit 7 - Overview of Interconnects, Contacts, Metal gate/Poly Gate, Metallization, Problems in Aluminum Metal contacts, Al spike, Electromigration, Metal Silicides, Multi-Level Metallization, Planarization, Inter Metal Dielectric

SUGGESTED LEARNING RESOURCES :

S.No	Title of Book	Author	Publication
1.	Silicon VLSI Technology	Plummer, Deal and Griffin	1st Edition, Pearson Education,2009
2.	. Fundamental of Semiconductor Fabrication	Sze and May	2nd Edition, Wiley India, 2009
3.	Silicon Process Technology	S K Gandhi	2nd Edition, Wiley India,2009



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DIPLOMA IN IC MANUFACTURING (105)
SEMESTER III

COURSE TITLE	:	SEMICONDUCTOR LAB FAMILIARIZATION
PAPER CODE	:	--
SUBJECT CODE	:	--
TREORY CREDITS	:	00
PRACTICAL CREDITS	:	02

Course Content:

Demonstrations/MOOC of the following processes

1. RCA Cleaning
2. Piranha Cleaning
3. Dry Oxidation
4. Wet Oxidation
5. Spin Coating
6. Lithography
7. Thermal/E-beam Evaporation
8. Sputtering
9. Wet etching
10. Dry etching

SUGGESTED LEARNING RESOURCES:

S.No	Title of Book	Author	Publication
1.	Silicon VLSI Technology	Plummer, Deal and Griffin	Pearson Education , 1st edition ,2009
2.	Fundamental of Semiconductor Fabrication	Sze and May	Wiley India , 2 nd edition, 2009
3.	Silicon Process Technology	S K Gandhi	Wiley India , 2 nd edition , 2009



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DIPLOMA IN IC MANUFACTURING (105)
SEMESTER - III

COURSE TITLE	:	SUMMER INTERNSHIP - I
PAPER CODE	:	--
SUBJECT CODE	:	--
TREORY CREDITS	:	00
PRACTICAL CREDITS	:	02

SUMMER INTERNSHIP -

3-4 weeks summer internship after IInd Semester.

It should be undertaken in an industry/Govt. or Pvt. Certified Agencies which are in social sector/Govt. Skill Centers/Schemes.

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



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DIPLOMA IN IC MANUFACTURING (I05)
SEMESTER - III

COURSE TITLE	:	PROFESSIONAL DEVELOPMENT
PAPER CODE	:	--
COURSE CODE	:	--
TREORY CREDITS	:	00
PRACTICAL CREDITS	:	00

Course Objectives:

Following are the objectives of this course:-

- (1) To learn the principles of Professional and Social ethics.
- (2) To know the concept of Lifelong learning and Self-directed learning.
- (3) To present self for employment.
- (4) To introduce the need of industrial visits.
- (5) To understand CV, Resume, Bio-data and Interview and their significance.
- (6) To develop the skills of Group Discussion.

Course Content:

Unit – I Professional and Social Ethics

Professional ethics, its need and importance, general code of ethics for engineers, ethical issues for engineers.

Need and importance of social skills, social skills for better group performance, important social skills such as social perceptiveness, coordination, negotiation, persuasion etc.

Unit – II Lifelong learning and Self-directed Learning

Lifelong learning, its examples, self-directed learning, its examples, important steps in lifelong learning.

Need for planning self-directed learning, planning self-directed learning plan, examples.

Unit – III Career Planning

Importance of career planning, major career opportunities in concerned branch of engineering , study of the important career opportunities regarding qualification, knowledge, skills, experience required for them, role of personal factors like personal life style, interest areas, desires, personal preferences in career planning.

Identification and detailing of important career opportunities in relation to branch of diploma, identification and detailing of important self-personal factors and self-personal preferences, development of self-career plan.

Unit – IV Industrial Visits

Necessity of exposure to environment and practices, lectures by industry experts.

Importance of Students' industrial visits, learning through observing real life industrial systems, planning and organizing the industrial visits.

Unit – V CV, Resume, Bio-data and Interview

Need of presenting self for employment, salient features and formats of bio-data, CV, resume, comparison of the three for their merits, limitations and specific uses, study of cases and examples of bio-data, CV, resume and covering letter by all students for self of for the given cases.

Importance of employment related interviews, purpose of interview, dress code, body language and posture of interviewee, do's and don'ts for interviews, interview checklist, practice of facing employment related interviews for all students.

Unit – VI Group Discussion

Need and importance of group discussion in professional work, ideal group discussion and skills needed to effectively participate in group discussion, practice of group discussion skills.

Course Outcomes:

After completing this course, the student will be able to:-

- (1) Demonstrate his/her understanding of Professional and Social ethics.
- (2) Plan self-learning and self-directed learning for completing the task.
- (3) Suggest an action plan for his career planning.
- (4) Demonstrate his/her learning from visits to industry.
- (5) Prepare CV, Resume and Bio-data along with a covering letter for a job.
- (6) Effectively face an interview.
- (7) Participate in Group discussion.
