Programme Structure

SCHOOL OF ENGINEERING & TECHNOLOGY

Diploma in Electronics & Communication Engineering

Programme Code:0113

Batch: 2023-2026

Vision of the University

To be recognized as an Institution of excellence, facilitating learning, fostering creativity, knowledge creation, innovations, consultancy and leadership in multiple areas to build a conscious community that will positively impact living beings for a sustainable future.

Mission of the University

1. **Offers a wide range of Undergraduate and Post graduate Courses.**
   To create conducive environment for an interactive and application oriented experiential learning making the Institute a preferred destination for work and study.
2. **Research, Innovation, Consultancy & Entrepreneurial Culture**
   To Foster creativity, research and innovation orientation in students and faculty in basic and applied areas in all of its disciplines, provide cost effective solutions and nurture entrepreneurial capabilities to accelerate growth.
3. **Social Relevance with local actions on global thoughts**
   To act as a catalyst in social change by developing academic, social, political, technological, scientific, industrial and business leadership in the spirit "Think Globally and Act Locally"; by providing ample opportunities to develop team spirit, sportsmanship and love for culture and national heritage.

Core Values

Integrity
Leadership
Diversity
Community

Vision of the School of Polytechnic

To become a center of excellence for providing quality and value based education in the field of diploma engineering that will produce skilled technocrats to meet industry requirements.

Mission of the School of Polytechnic

- To provide technical knowledge and skills by using latest engineering tools.
- To facilitate industry-institute interaction to explore the industrial knowledge of the students.
- To inculcate ethical and professional values among students.
- To impart quality education to the students coming from rural parts and to conduct different curricular & co-curricular activities to enhance the academic.

Core Values

Integrity
Leadership
Diversity
Community

Programme Educational Objectives (PEO's)

PEO 1. To provide solid foundation in electronics engineering along with good communication and entrepreneurship skills for tackling social issues.

PEO 2. To impart students with good scientific and engineering knowledge in order to analyse, design and create novel products for giving practical solutions to real life problems.

PEO 3. To create engineers with sound technical knowledge for facing all sorts of challenges in industry or in pursuance of higher studies.

PEO 4. To motivate students, to acquire aptitude for lifelong learning along with leadership skills, team spirit and ethical values so that they upgrade themselves with the latest trends in the field of engineering in order to serve the society.

PROGRAMME OUTCOMES (POs)

PO 1. Basic and Discipline specific knowledge: Apply knowledge of basic mathematics, science and engineering fundamentals and engineering specialization to solve the engineering problems.

PO 2. Problem analysis: Identify and analyse well-defined engineering problems using codified standard methods.

PO 3. Design/ development of solutions: Design solutions for well-defined technical problems and assist with the design of systems components or processes to meet specified needs.

PO 4. Engineering Tools, Experimentation and Testing: Apply modern engineering tools and appropriate technique to conduct standard tests and measurements.

PO 5. Engineering practices for society, sustainability and environment: Apply appropriate technology in context of society, sustainability, environment and ethical practices.

PO 6. Project Management: Use engineering management principles individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.

PO 7. Life-long learning: Ability to analyse individual needs and engage in updating in the context of technological changes.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO 1. An ability to design and analyze the concepts and applications in the field of communication/ networking and semiconductor technology.

PSO 2. An ability to learn the courses related to Electronic Devices & Circuits, Digital Electronics, Microprocessors and Communication Systems to develop solutions to real world problems.

PSO 3. An ability to specify, design, implement and test analog and digital electronic systems using the state of the art components and software tools.

PSO 4. An ability to communicate in both oral and written forms, the work already done and the future plans with necessary road maps, demonstrating the practice of professional ethics and the concerns for social and environmental impact.

SDGI GLOBAL UNIVERSITY, GHAZIABAD

SCHOOL OF ENGINEERING & TECHNOLOGY

SCHEME OF STUDIES AND EVALUATION FOR DIPLOMA IN ELECTRONICS & COMMUNICATION ENGINEERING

W.E.F : Session : 2025-26 (Batch : 2023-2026) Semester - V

S. No	Status	Paper Code	Subjects	Study Scheme Lec / Week			Hours	Credits	CIE	ESE	Total	Pass Marks
				L	T	P						
1	DC	D061323501	Microprocessor & Peripheral Devices	3	0	0	3	3	50	50	100	40
2	DC	D061323502	Optical Fiber Engineering	3	0	0	3	3	50	50	100	40
3	DC	D061323503	Consumer Electronics	2	1	0	3	2	50	50	100	40
4	OE	D061323504	Programming in C	2	1	0	3	2	50	50	100	40
5	SE	D06SE24505	Industrial Management & Entrepreneurship Development	3	0	0	3	3	50	50	100	40
6	DC	D061323551	Microprocessor & Peripheral Devices Lab	0	0	2	2	1	60	40	100	40
7	DC	D061323552	Optical Fiber Engineering Lab	0	0	2	2	1	60	40	100	40
8	DC	D061323553	Consumer Electronics Lab	0	0	2	2	1	60	40	100	40
9	OE	D061323554	Programming in C Lab	0	0	2	2	1	60	40	100	40
10		D061323556	Minor project work	0	0	4	4	2	60	40	100	40
11		D061323560	Summer Internship / Industrial Training	0	0	0	0	2	0	100	100	40
	Total			13	2	12	27	21	550	550	1100	440

Semester-5th

SCHOOL OF ENGINEERING & TECHNOLOGY

MICROPROCESSOR AND PERIPHERAL DEVICES

(D061323501)

L	T	P
3	0	0

JUSTIFICATION

The study of microprocessors in terms of architecture, software and interfacing techniques leads to the understanding of working of CPU in a microcomputer. The development in microprocessors of 32 bit architecture brings the students face-to-face with mainframe enabling them to get employment in R&D, assembly, repair and maintenance of hardware of microprocessors and computers. Microprocessors find application in process control industry. They also form a part of the electronic switching system between source and destination in long distance telecommunications. Thus the microprocessor is an area of specialization. Students of electronics and related engineering branches often use microprocessors to introduce programmable control in their projects, in industrial training.

LEARNING OUTCOMES

After completing this course, students will be able to:

1. Understand the concept of microcomputer system
2. Describe Architecture and pin details of 8085
3. Write assembly language program using mnemonics
4. Interface various peripheral devices with microprocessor.
5. Use various data transfer techniques
6. Describe architecture and pin detail of 8086
7. Describe the idea of advance microprocessors like Pentium series and dual core.

DETAILED CONTENTS

UNIT 1: Evolution of Microprocessor and Architecture of a Microprocessor **08 Hours**

1.1 Typical organization of a microcomputer system and functions of its various blocks. Microprocessor, its evolution, function and impact on modern society

1.2 (With reference to 8085 microprocessor) Concept of Bus, bus organization of 8085, Functional block diagram of 8085 and function of each block, Pin details of 8085 and related signals,

1.3 Demultiplexing of address/data bus generation of read/write control signals, Steps to execute a stored programme.

UNIT 2: Instruction Timing and Cycles and Programming (with respect to 8085 microprocessor) **08 Hours**

2.1 Instruction cycle, machine cycle and T-states, Fetch and execute cycle, Timing cycle diagram.

2.2 Brief idea of machine and assembly languages, Machines and Mnemonic codes. Instruction format and Addressing mode. Identification of instructions as to which addressing mode they belong. Concept of Instruction set. Explanation of the instructions of the following groups of instruction set. Data transfer group, Arithmetic Group, Logic Group, Stack, I/O and Machine Control Group. Programming exercises in assembly language. (Examples can be taken from the list of experiments).

UNIT 3: Memories and I/O interfacing and Interrupts **08 Hours**

3.1 Concept of memory mapping, partitioning of total memory space. Address decoding, concept of peripheral mapped I/O and memory mapped I/O. Interfacing of memory mapped I/O devices.

3.2 Concept of interrupt, Maskable and non-maskable, Edge triggered and level triggered interrupts, Software interrupt, Restart interrupts and its use, Various hardware interrupts of 8085, Servicing interrupts, extending interrupt system

UNIT 4: Data Transfer Techniques and Peripheral devices **06 Hours**

4.1 Concept of programmed I/O operations, sync data transfer, async data transfer (hand shaking), Interrupt driven data transfer, DMA, Serial output data, Serial input data

4.2 8255 PPI, 8253 PIT and 8257 DMA controller

UNIT 5: Architecture of 8086 Microprocessor and Advance Microprocessors **06 Hours**

5.1 Block diagram , Minimum and Maximum mode , Pin and Signals ,Addressing Modes

5.2 Introduction to Pentium series processors and core 2 duo, dual core (core i3, i5, i7)

RECOMMENDED BOOKS

1. Microprocessor Architecture, Programming and Applications with 8080/8085 by Ramesh S Gaonker, Willey Eastern Ltd. New Delhi
2. Microprocessor and Applications by Badri Ram: Tata McGraw Hill Education Pvt Ltd , New Delhi
3. Microprocessor programming & applications.by Sudhir Goyal, North Publication.
4. Microprocessor and interfacing by Douglas.V.Hall, McGraw Hill Higher Education, New Delhi.
5. E-books/e-tools/relevant software to be used as recommended by AICTE/NITTTR, Chandigarh.

SCHOOL OF ENGINEERING & TECHNOLOGY

OPTICAL FIBER ENGINEERING

(D061323502)

L	T	P
3	0	0

JUSTIFICATION

Progressing from communication over copper wire to today's fiber optic communication, we have increased our ability to transmit more information, more quickly and over longer distances. This has expanded our boundaries and is finding a good slot in communication system. Optical fiber has replaced existing transmission media due to its advantages. As a result the technicians are supposed to have knowledge of optical communication. This subject will provide basic concepts and requisite knowledge and skill required for optical fiber communication system.

LEARNING OUTCOMES

After completing this course, students will be able to:

1. Understand various components and light propagation methods in optical fiber communication.
2. Demonstrate various types of optical fibers.
3. Identify and test losses in optical fibers.
4. Explain and demonstrate characteristics of optical source and optical detector.
5. Connect and provide joints in optical fibers.
6. Components and tools used in optical fiber.
7. Compare various optical amplifiers.

DETAILED CONTENTS

UNIT 1: Introduction **06 Hours**

1.1 Historical perspective, basic communication systems, optical frequency range, advantages of optical fiber communication, application of fiber optic communication

1.2 Electromagnetic spectrum used, Advantages and disadvantages of optical communication, optical windows.

1.3 Principle of light penetration, reflection, critical angle, numerical aperture, acceptance angle.

UNIT 2: Optical Fibers and losses in optical fiber cable **08 Hours**

2.1 Constructional details of various optical fibers, multimode and mono-mode fibers, step index and graded index fibers, acceptance, angle and types of optical fiber cables.

2.2 Optical Multiplexing (WDM) , Optical Switching

2.3 Absorption Losses: Scattering Losses, Radiation losses, Connector losses, Bending loses. Dispersion: Types and its effect on data rate.

2.4 Testing of losses using OTDR (Optical Time Domain Reflectometer).

UNIT 3: Optical Sources **08 Hours**

3.1 Intrduction to Optical Transport Networks(OTN) Characteristics of light sources (LED and LASER) used in optical communication, principle of operation of LED, different types of LED structures used and their brief description,

3.2 Injection laser diode, principle of operation, different injection laser diodes, comparison of LED and ILD.

UNIT 4: Optical Detectors and Connectors and splicers **08 Hours**

4.1 Characteristics of photo detectors used in optical communication; PN-photo diode, PIN diode and avalanche photo diode (APD),brief idea of Noise in detectors

4.2 Optical Fibers cable connectors and splicing techniques (Mechanical, fusion)

UNIT 5: Optical Amplifiers **06 Hours**

5.1 Types of optical amplifiers, semiconductor & fiber optical amplifiers, principle of operation of SOA, types of SOA.

5.2 EDFA, Raman amplifiers. Comparison of SOA, EDFA and Raman Amplifiers

RECOMMENDED BOOKS

1. Optical fiber Communication by John M Senior, Prentice Hall of India, New Delhi .
2. Optical fiber Communication by J. Gower , Prentice Hall of India, New Delhi
3. Optical fiber Communication by Gerd Keiser, McGraw Hill International Editions
4. E-books/e-tools to be used as recommended by AICTE/NITTTR, Chandigarh.

CONSUMER ELECTRONICS

(D061323503)

L	T	P
2	1	0

JUSTIFICATION

The objective of teaching this subject is to give students an in depth knowledge of various electronic audio and video devices and systems. Further this subject will introduce the students with working principles, block diagram, main features of consumer electronics gadgets/goods/devices. This in-turn will develop in them capabilities of assembling, fault diagnosis and rectification in a systematic way.

LEARNING OUTCOMES

After completing this course, students will be able to:

1. Understand the various types of microphones and loud speakers.
2. To identify the various digital and analog signal.
3. Describe the basis of television and composite video signal.
4. Describe the various kinds of colour TV standards and system.
5. Compare the various types of digital TV system.
6. Understand the various types of consumer goods.

DETAILED CONTENTS

UNIT-1 Audio Systems **08 Hours**

1.1 Microphones and Loudspeakers

1.2 a) Carbon, moving coil, cordless microphone

b) Direct radiating and horn loudspeaker

c) Multi-speaker system

d) Hi-Fi stereo and dolby system.

1.3 Concept to fidelity, Noise and different types of distortion in audio system.

UNIT 2 Digital Audio Fundamentals **06 Hours**

2.1 Audio as Data and Signal, Digital Audio Processes Outlined, Time Compression and Expansion.

UNIT 3 Television **08 Hours**

3.1 Basics of Television

- Elements of TV communication system
- Scanning and its need
- Need of synchronizing and blanking pulses, VSB
- Composite Video Signal

3.2 Colour Television

- Primary, secondary colours
- Concept of Mixing, Colour Triangle

-Camera tube

- PAL TV Receiver
- NTSC, PAL, SECAM (brief comparison)

UNIT 4 Digital Transmission and Reception **06 Hours**

4.1 Digital satellite television, Direct-To-Home(DTH) satellite television, Introduction

to :Video on demand, CCTV, High Definition(HD)-TV.

Introduction to Liquid Crystal and LED Screen Televisions Basic block diagram of LCD and LED Television and their comparison.

UNIT 5 Introduction to different type of domestic/commercial appliances 06 Hours

5.1 Operation of Micro-wave oven

- Food Processors
- Digital Electronic Lock
- Vacuum cleaner
- Xerox Machine
- Scanner

RECOMMENDED BOOKS

1. Modern Television Practice by R. R. Gulai; New Age International Publishers.
2. Audio Video Systems by R. G. Gupta; McGraw Hill Education System.
3. Audio Video Systems Principles Practices and Troubleshooting by Bali & Bali; Khanna Publishing Company
4. Consumer Electronics by S. P. Bali; Pearson Education, New Delhi
5. e-books/e-tools/relevant software to be used as recommended by AICTE/NITTTR, Chandigarh.

SCHOOL OF ENGINEERING & TECHNOLOGY

PROGRAMMING IN C

(D061323504)

L	T	P
2	1	0

JUSTIFICATION

Computers play a vital role in present day life, more so, in the professional life of technician engineers. People working in the field of computer industry, use computers in solving problems more easily and effectively. In order to enable the students use the computers effectively in problem solving, this course offers the modern programming language C along with exposition to various applications of computers. The knowledge of C language will be reinforced by the practical exercises.

LEARNING OUTCOMES

After completing this course, students will be able to:

1. Understand the concepts of C programming language
2. Install C software on the system and debug the programme
3. Identify a problem and formulate an algorithm for it.
4. Identify various control structures and implement them.
5. Identify various types of variables.
6. Use pointer in an array and structure.
7. Implement the language control structure
8. Understand and execute member functions of C in the programme
9. Implement array concept in C programmer execute pointers

DETAILED CONTENTS

UNIT-1	**Algorithm and Programming Development**	**06 Hours**
1.1	Steps in development of a program Flow charts, Algorithm development Programme Debugging Basis of C programming	
UNIT 2	**Program Structure and Control Structures**	**08 Hours**
2.1	I/O statements, assign statements Constants, variables and data types Operators and Expressions Standards and Formatted IOS Data Type Casting	
2.2	Introduction Decision making with IF - statement IF - Else and Nested IF While and do-while, for loop Break. Continue, goto and switch statements	
UNIT 3	**Pointers**	**06 Hours**
3.1	Introduction to Pointers Address operator and pointers Declaring and Initializing pointers, Single pointer,	
UNIT 4	**Functions**	**06 Hours**
4.1	Introduction to functions Global and Local Variables Function Declaration	

Standard functions
Parameters and Parameter Passing
Call - by value/reference
Recursion

UNIT 5 Arrays **08 Hours**

5.1 Introduction to Arrays
Array Declaration, Length of array
Single and Multidimensional Array.
Arrays of characters
Passing an array to function
Pointers to an array

RECOMMENDED BOOKS

1. Let us C by Yashwant Kanetkar
2. Programming in ANSI C by E Balaguruswami, Tata McGraw Hill Education Pvt Ltd, New Delhi
3. Programming in C by Reema Thareja; Oxford University Press, New Delhi
4. Programming in C by Gottfried, Schaum Series, , Tata McGraw Hill Education Pvt Ltd, New Delhi
5. Exploring C by Yashwant Kanetkar; BPB Publications, New Delhi
6. E-books/e-tools/relevant software to be used as recommended by AICTE/NITTTR, Chandigarh

SCHOOL OF ENGINEERING & TECHNOLOGY

INDUSTRIAL MANAGEMENT AND ENTREPRENEURSHIP DEVELOPMENT

(D06SE24505)

L	T	P
3	0	0

JUSTIFICATION

In the present day scenario, it has become imperative to impart entrepreneurship and management concepts to students so that a significant percentage of them can be directed towards setting up and managing their own small enterprises. It may be further added that an entrepreneurial mindset with managerial skills helps the student in the job market. This subject focuses on imparting the necessary competencies and skills of enterprise set up and its management.

LEARNING OUTCOMES

After undergoing this course, the students will be able to:

- Know about various schemes of assistance by entrepreneurial support agencies
- Conduct market survey
- Prepare project report
- Explain the principles of management including its functions in an organization.
- Have insight into different types of organizations and their structures.
- Inculcate leadership qualities to motivate self and others.
- Manage human resources at the shop-floor
- Maintain and be a part of healthy work culture in an organization.
- Use marketing skills for the benefit of the organization.
- Maintain books of accounts and take financial decisions.
- Undertake store management.
- Use modern concepts like TQM, JIT and CRM.

DETAILED CONTENTS

UNIT 1:	**ENTREPRENEURSHIP**	**06 Hours**
1.1	**Introduction**: Concept /Meaning and its need	
1.2	Qualities and functions of entrepreneur and barriers in entrepreneurship	
1.3	Sole proprietorship and partnership forms and other forms of business organization's	
1.4	Schemes of assistance by entrepreneurial support agencies at National, State, District –level, organization: NSIC, NRDC, DC, MSME, SIDBI, NABARD, NIESBUD, HARDICON Ltd., Commercial Banks, SFC's TCO, KVIB, DIC, Technology Business Incubators (TBI) and Science and Technology Entrepreneur Parks	
UNIT2:	**Market Survey and Opportunity Identification/Ideation**	**08 Hours**
2.1	Scanning of the business environment	
2.2	Salient features of National and Haryana State industrial policies and resultant business opportunities	
2.3	Types and conduct of market survey	
2.4	Assessment of demand and supply in potential areas of growth	
2.5	Identifying business opportunity	
2.6	Considerations in product selection	
2.7	Converting an idea into a business opportunity	
2.8	**Project report Preparation** : Preliminary project report	

2.9	Detailed project report including technical, economic and market feasibility	
2.10	Common errors in project report preparations	
2.11	Exercises on preparation of project report	
2.12	Sample project report	
UNIT3:	**Introduction to Management**	**08 Hours**
3.1	Definitions and importance of management	
3.2	Functions of management: Importance and process of planning, organising, staffing, directing and controlling	
3.3	Principles of management (Henri Fayol, F.W. Taylor)	
3.4	Concept and structure of an organisation	
3.5	Types of industrial organisations and their advantages	
3.6	Line organisation, staff organisation	
3.7	Line and staff organisation	
3.8	Functional organisation	
3.9	**Leadership:** Definition and Need, Qualities and functions of a leader, Manager Vs leader, Types of leadership, Case studies of great leaders	
3.10	**Motivation:** Definition and characteristics, Importance of self-motivation, Factors affecting motivation, Theories of motivation (Maslow, Herzberg, Douglas, McGregor)	
UNIT4:	**Management Scope in Different Areas**	**08 Hours**
4.1	Human Resource Management: Introduction and objective, Introduction to Man power planning, recruitment and selection, Introduction to performance appraisal methods	
4.2	Material and Store Management: Introduction functions, and objectives, ABC Analysis and EOQ	
4.3	Marketing and sales: Introduction, importance, and its functions, Physical distribution, Introduction to promotion mix, Sales promotion	
4.4	Financial Management: Introductions, importance and its functions, knowledge of income tax, sales tax, excise duty, custom duty, VAT, GST	
4.5	**Work Culture** : Introduction and importance of Healthy Work Culture in organization	
4.6	Components of Culture	
4.7	Importance of attitude, values and behavior	
4.8	Behavioral Science – Individual and group behavior.	
4.9	Professional ethics – Concept and need of Professional Ethics and human values	
UNIT5:	**Basic of Accounting and Finance**	**08 Hours**
5.1	Basic of Accounting: Meaning and definition of accounting, Double entry system of book keeping, Trading account, PLA account and balance sheet of a company	
5.2	Objectives of Financial Management: Profit Maximization v/s Wealth Maximization	
5.3	**Miscellaneous Topics** : Total Quality Management (TQM): Statistical process control, Total employees Involvement, Just in time (JIT)	
5.4	Intellectual Property Right (IPR) : Introduction, definition and its importance, Infringement related to patents, copy right, trade mark	

RECOMMENDED BOOKS

1. A Handbook of Entrepreneurship, Edited by BS Rathore and Dr JS Saini; Aapga Publications, Panchkula (Haryana)
2. Entrepreneurship Development and Management by J.S.Narang; Dhanpat Rai & Sons, Delhi.
3. Entrepreneurship Development by CB Gupta and P Srinivasan, Sultan Chand and Sons, New Delhi
4. Handbook of Small Scale Industry by PM Bhandari
5. Entrepreneurship Development and Management by MK Garg

6. E-books/e-tools/relevant software to be used as recommended by AICTE/ NITTTR, Chandigarh.

SCHOOL OF ENGINEERING & TECHNOLOGY

MICROPROCESSOR AND PERIPHERAL DEVICES

LAB

(D061323551)

L	T	P
0	0	2

JUSTIFICATION

The study of microprocessors in terms of architecture, software and interfacing techniques leads to the understanding of working of CPU in a microcomputer. The development in microprocessors of 32 bit architecture brings the students face-to-face with mainframe enabling them to get employment in R&D, assembly, repair and maintenance of hardware of microprocessors and computers. Microprocessors find application in process control industry. They also form a part of the electronic switching system between source and destination in long distance telecommunications. Thus the microprocessor is an area of specialization. Students of electronics and related engineering branches often use microprocessors to introduce programmable control in their projects, in industrial training.

LEARNING OUTCOMES

After completing this course, students will be able to:

1. Understand the concept of microcomputer system
2. Describe Architecture and pin details of 8085
3. Write assembly language program using mnemonics
4. Interface various peripheral devices with microprocessor.
5. Use various data transfer techniques
6. Describe architecture and pin detail of 8086
7. Describe the idea of advance microprocessors like Pentium series and dual core.

DETAILED CONTENTS

1	Familiarization of different keys of 8085 microprocessor kit and its memory map
2	Steps to enter, modify data/program and to execute a programme on 8085 kit
3	Writing and execution of ALP for addition and subtraction of two 8 bit numbers
4	Writing and execution of ALP for multiplication and division of two 8 bit numbers
5	Writing and execution of ALP for arranging 10 numbers in ascending/descending order
6	Writing and execution of ALP for 0 to 9 BCD counters (up/down counter according to choice stored in memory)
7	Interfacing exercise on 8255 like LED display control
8	Interfacing exercise on 8253 programmable interval timer
9	Interfacing exercise on 8279 programmable KB/display interface like to display the hex code of key pressed on display
10	Writing and execution of different ALP for 8086 (any four)
11	Generation of square wave of desired frequency using 8255.

SCHOOL OF ENGINEERING & TECHNOLOGY

OPTICAL FIBER ENGINEERING LAB

(D061323552)

L	T	P
0	0	2

JUSTIFICATION

Progressing from communication over copper wire to today's fiber optic communication, we have increased our ability to transmit more information, more quickly and over longer distances. This has expanded our boundaries and is finding a good slot in communication system.

LEARNING OUTCOMES

After completing this course, students will be able to:

1. Understand various components and light propagation methods in optical fiber communication.
2. Demonstrate various types of optical fibers
3. Identify and test losses in optical fibers
4. Explain and demonstrate characteristics of optical source and optical detector
5. Connect and provide joints in optical fibers
6. Components and tools used in optical fiber
7. Compare various optical amplifiers

DETAILED CONTENTS

1	To identify and use various components and tools used in optical fiber communication
2	To set up fiber analog link
3	To set up optic digital link
4	To measure bending losses in optical fibers
5	To observe and measure the splice or connector loss
6	To measure and calculate numerical aperture of optical fiber
7	To observe characteristics of optical source
8	To observe characteristics of optical detector
9	To splice the available optical fiber
10	To connect a fiber with connector at both ends

SCHOOL OF ENGINEERING & TECHNOLOGY

CONSUMER ELECTRONICS LAB

(D061323553)

L	T	P
0	0	2

JUSTIFICATION

The objective of teaching this subject is to give students an in depth knowledge of various electronic audio and video devices and systems. Further this subject will introduce the students with working principles, block diagram, main features of consumer electronics gadgets/goods/devices. This in-turn will develop in them capabilities of assembling, fault diagnosis and rectification in a systematic way.

LEARNING OUTCOMES

After completing this course, students will be able to:

1. Understand the various type of microphones and loud speakers.
2. To identify the various digital and analog signal.
3. Describe the basis of television and composite video signal.
4. Describe the various kind of colour TV standards and system.
5. Compare the various types of digital TV system.
6. Understand the various type of consumer goods

DETAILED CONTENTS

1	To plot the directional response of a Microphone
2	To plot the directional response of a Loud Speaker
3	To study public address system and its components.
4	To perform fault identification in TV.
5	Installation of Dish Antenna for best reception.
6	Installation of CCTV system.
7	To study the various parameters in the Smartphone and Tablet, PC

SCHOOL OF ENGINEERING & TECHNOLOGY

PROGRAMMING IN C LAB

(D061323554)

L	T	P
0	0	2

JUSTIFICATION

Computers play a vital role in present day life, more so, in the professional life of technician engineers. People working in the field of computer industry, use computers in solving problems more easily and effectively. In order to enable the students use the computers effectively in problem solving, this course offers the modern programming language C along with exposition to various applications of computers. The knowledge of C language will be reinforced by the practical exercises.

LEARNING OUTCOMES

After completing this course, students will be able to:

1. Understand the concepts of C programming language
2. Install C software on the system and debug the programme
3. Identify a problem and formulate an algorithm for it.
4. Identify various control structures and implement them.
5. Identify various types of variables.
6. Use pointer in an array and structure.
7. Implement the language control structure
8. Understand and execute member functions of C in the programme
9. Implement array concept in C programmer execute pointers

DETAILED CONTENTS

1	Programming exercises on executing and editing a C program.
2	Programming exercises on defining variables and assigning values to variables.
3	Programming exercises on arithmetic and relational operators.
4	Programming exercises on arithmetic expressions and their evaluation.
5	Programming exercises on formatting input/output using printf and scanf and their return type values.
6	Programming exercises using if statement.
7	Programming exercises using if - Else.
8	Programming exercises on switch statement
9	Programming exercises on do - while, statement.
10	Programming exercises on for - statement.
11	Programs on one-dimensional array.

SCHOOL OF ENGINEERING & TECHNOLOGY

MINOR PROJECT WORK

(D061323556)

L	T	P
0	0	4

JUSTIFICATION

Minor project work aims at exposing the students to various industries dealing with computers. It is expected from them to get acquainted with computer environment. For this purpose, student during middle of the course are required to be sent for a period of two to four weeks at a stretch in different establishments

LEARNING OUTCOMES

After completing this course, students will be able to:

1. Use effectively oral, written and visual communication
2. Demonstrate skill and knowledge of current information and technological tools and
3. Techniques specific to the professional field of study.
4. Identify, analyze and solve problems creatively through sustained critical investigation.
5. Develop co-worker and leadership abilities.
6. Apply fundamental and disciplinary concepts and methods in ways appropriate to their
7. Areas of study.

DETAILED CONTENTS

1	Industrial practices in installation and maintenance of computers and computer networks
2	Fabrication of computers
3	Fault diagnosis and testing of computers
4	Industrial practices in respect of documentation and fabrication
5	A variety of computers and peripherals in assembly organizations
6	Software package development organizations
7	Maintenance of database
8	Write procedure or functions which can be attached as the library objects to the main projects
9	Write a procedure function to convert number of words.
10	Write a procedure function to convert all data function (create your own) Database connectivity, (SQL server, Oracle, Access), Library classes in C++ (same application).

SCHOOL OF ENGINEERING & TECHNOLOGY

INDUSTRIAL TRAINING/INTERNSHIP

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JUSTIFICATION

It is needless to emphasize further the importance of Industrial Training of students during their 3 years of studies at Polytechnics. It is industrial training, which provides an opportunity to students to experience the environment and culture of industrial production units and commercial activities undertaken in field organizations. It prepares student for their future role as diploma engineers in the world of work and enables them to integrate theory with practice. Polytechnics have been arranging industrial training of students of various durations to meet the above objectives.

This document includes guided and supervised industrial training of 4 weeks duration to be organised during the semester break starting after second year i.e. after 4th semester examinations. The concerned HODs along with other teachers will guide and help students in arranging appropriate training places relevant to their specific branch. It is suggested that a training schedule may be drawn for each student before starting of the training in consultation with the training providers. Students should also be briefed in advance about the organizational setup, product range, manufacturing process, important machines and materials used in the training organization.

Equally important with the guidance is supervision of students training in the industry/organization by the teachers. Students should be encouraged to write daily report in their diary to enable them to write final report and its presentation later on.

An external assessment of 50 marks has been provided in the study and evaluation scheme of 5th Semester. Evaluation of professional industrial training report through viva-voce/presentation aims at assessing students understanding of materials, industrial process, practices in industry/field organization and their ability to engage in activities related to problem solving in industrial setup as well as understanding of application of knowledge and skills learnt in real life situations.

Teachers and students are requested to see the footnote below the study and evaluation scheme of 4th semester for further details. The teacher along with field supervisors will conduct performance assessment of students. The components of evaluation will include the following:

a) Punctuality and regularity 15%
b) Initiative in learning new things 15%
c) Presentation and VIVA 15%.
d) Industrial training report 55%