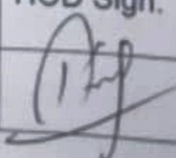


G P Kangra		Department: E.C.E. Subject : Optical Fibre Communication			
SYLLABUS PLANNED		Course :Diploma Duration : Three years		Theory : 52	
No. of Periods	Topic and details	Instruction Reference	Additional Study recommended	Remarks	
1- 12	<p>Introduction Historical perspective, basic optical fiber communication systems, optical frequency range, advantages of optical fiber communication, application of fiber optic communication.</p> <ul style="list-style-type: none"> • Electromagnetic spectrum used, Advantages and disadvantages of optical communication. • Principle of light penetration, reflection, critical angle. <p>Discussion session, Doubt session, Student feedback session.</p>	1. Fiber optics communication technology by Djafar K. Mynbaev, Lowell L. Scheiner,.	www.slietshare.net/mobilesamurederparker-1/losses-in-optical-fiber (PPT)		
13-20	<p>Optical Fibers and Cables</p> <ul style="list-style-type: none"> • Constructional details of various optical fibers, multimode and mono-mode fibers, step index and graded index fibers, acceptance angle, Numerical aperture and types of optical fiber cables. • Optical Fibers cable connectors and splicing techniques (Mechanical, fusion) <p>Discussion session, Doubt session, Student feedback session.</p>	2. Optical fiber communication by John M. Senior 3. Optical Fiber communication (Short term course by Dr. BC Choudhary			
21-28	<p>Losses in Optical Fiber Cable</p> <ul style="list-style-type: none"> • Absorption Losses: Scattering Losses, Radiation losses or Bending losses, Connector losses. • Dispersion: Types and its effect on data rate. • Testing of losses using OTDR (Optical Time Domain Reflectometer). <p>Discussion session, Doubt session, Student feedback</p>	-do-	Losses in optical fiber youtube, optical Losses (PDF)		

		session.	
4	29-38	<p>Optical Sources Characteristics of light used in optical communication, principle of operation of LED, different types of LED structures used and their brief description, Injection laser diode, principle of operation, different injection laser diodes, comparison of LED and ILD. Discussion session, Doubt session, Student feedback session.</p>	-do-
5	39-46	<p>Optical Detectors Characteristics of photo detectors used in optical communication; PIN diode and avalanche photo diode (APD), Noise in detectors . Discussion session, Doubt session, Student feedback session.</p>	-do-
6	47-49	<p>Optical Amplifiers Types of optical amplifiers, semiconductor fiber optical amplifiers Functional types, principal of operation of SOA, types of SOA. FPA, TWA, SOA applications, advantages, Drawbacks, EDFAS, Raman amplifiers Discussion session, Doubt session, Student feedback session.</p>	-do-
7	50-52	<p>Optical Fiber System Application Role of OFC in Fiber to the x (FTTx), Next Generation Network (NGN), Need for Spectrum (NFS), Internet of Things (IOT) Discussion session, Doubt session, Student feedback session.</p>	-do-

Approved	HOD Sign.
Date 10-08-2023	

G P Kangra	Department: E.C.E.Subject : BOM&ED	
	Course :Diploma Duration : Three years	
SYLLABUS PLANNED	Total Periods: 52 Theory : 52	

Sr. No.	No. of Lectures	Chapter/ Unit Description	Topic and details	Instruction Reference	Remarks
1.	1-4	Introduction to Management	Introduction to Management Definitions and concept of Management Functions of management- planning, organizing, staffing, coordinating and controlling. Various areas of management, Structure of an Organization	R1,R2,R3	
2.	5-10	Self-Management and Development	Self-Management and Development Life Long Learning Skills, Concept of Personality Development, Ethics and Moral values Concept of Physical Development; Significance of health, hygiene, body gestures Time Management Concept and its importance Intellectual Development: Reading skills, speaking, listening skills, writing skills (Note taking, rough draft, revision, editing and final drafting), Concept of Critical Thinking and Problem Solving (approaches, steps and cases). Psychological Management: stress, emotions, anxiety and techniques to manage these. ICT & Presentation skills; use of IT tools for good and impressive presentations.	-do-	
3.	11-16	Team Management	Team Management Concept of Team Dynamics. Team related skills, managing cultural, social and ethnic diversity in a team. Effective group communication and conversations. Team building and its various stages like forming, storming, norming, performing and adjourning Leadership, Qualities of a good leader Motivation, Need of Motivation, Maslow's theory of Motivation	-do-	
4.	17-20	Project Management	Project Management Stages of Project Management; initiation, planning, execution, closing and review (through case studies), SWOT analysis concept.	-do-	
5.	21-27	Introduction to Entrepreneurship	Introduction to Entrepreneurship Entrepreneurship, Need of entrepreneurship, and its concept, Qualities of a good entrepreneur Business ownerships and its features; sole proprietorship, partnership, joint stock companies, cooperative, private limited, public limited, PPP mode. Types of	-do-	

6.	28-33	Entrepreneurial Support System (Features and Roles in Brief)	Entrepreneurial Support System (Features and Roles in Brief) District Industry Centers (DICs), State Financial Corporations (SFCs), NABARD, MSME (Micro, Small, Medium Enterprises) – its objectives & list of schemes	-do-	
7.	34-42	Market Study and Opportunity Identification	Market Study and Opportunity Identification Types of market study: primary and secondary, product or service identification, assessment of demand and supply, types of survey and their important features	-do-	
8	42-52	Project Report Preparation	Project Report Preparation Preliminary Report, Techno-Economic Feasibility Report, Detailed Project Report (DPR).	-do-	

Teaching Resources:

- R1. Basics of Management by Poonam Goyal & Dr. K.C. Sharma
R2. Generic Skills & Entrepreneurship Development by Sonika Kalra & Vipin Bansal.
R3. <http://www.ignouhelp.in/ignou-mba-study-material>


Signature of H.O.D. (Approved By)

GP Kangra	Department: ECE	Subject: Microwave & Radar Engg.	
	Course: Diploma	Duration : 03 Years	
Syllabus Planned	Total Periods: 56(T)+ 28(P)		

SYLLABUS PLANNED

S.N	Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks
1	1-4	Introduction to Microwaves: Introduction to microwaves and its applications, Classification on the basis of its frequency bands (HF, VHF, UHF, L, S, C, X, KU, KA, mm, SUB mm). Block diagram and working principles of microwave communication link			
2	5-22	Microwave Devices: Basic concepts of thermionic emission and vacuum tubes, Effects of inter electrode capacitance Lead Inductance and Transit time on the high frequency performance of conventional vacuum tubes, and steps to extend their high frequency operations. Construction, characteristics, operating principles and typical applications of the following devices (No mathematical treatment) - Multi cavity Klystron - Reflex Klystron - Multi-cavity magnetron - Traveling wave tube - Gunn diode and - Impatt diode	<i>Microwave & Radar Engineering by M. Kulkarni</i>		
3	23-29	Waveguides: Rectangular and circular wave guides and their applications. Mode of waveguide; Propagation constant of a rectangular wave guide, cut off wavelength, guide wavelength and their relationship with free space wave length (no mathematical derivation). Impossibility of TEM mode in a wave guide.			
4	30-39	Microwave Components: Constructional features, characteristics and application of tees, bends, matched termination, twists, detector, mount, slotted section, directional coupler, fixed and variable attenuator, isolator, circulator and duplex, coaxial to waveguide adapter			
5	40-44	Microwave antennas: Structural characteristics and typical applications of Horn and Dish antennas.			

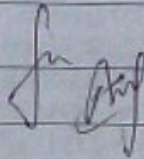
6	45-56	Radar Systems: Introduction to radar, its various applications, radar range equation (no derivation) and its applications. Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross-section and its dependence on frequency. Block diagram and operating principles of FMCW radars and their applications		
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Approved	HOD Sign 
Date	10/05/2023

PLANNED SYLLABUS COVERAGE (Theory)

GP Kangra		Department: ECE Subject : PERSONAL COMPUTER ORGANIZATION				
SYLLABUS COVERAGE		Course : Diploma		Duration: 3 Yrs.		
		Total Period: 56		Theory : 56		
Sr. No.	Period Nos	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1.	1 to 11	Mother Board	1.1 Introduction to different type of mother boards 1.2 Single Board Based System.	<ul style="list-style-type: none"> • PC Organisation by S. Chowdhury, Dhanpat Rai & Sons, Delhi Electronics • Text Book by Mark Minasi 	<ul style="list-style-type: none"> • IBM PC Colons by Govinda Rajalu, Tata McGraw Hill Publishers, New Delhi. Computers by P.Norton 	
2.	12 to 22	Buses and Ports	2.1 Different type of Buses PCI, SCSI and Serial Ports. 2.2 Parallel ports (COM ports) Ports COM 1, LPT1, USB Ports & RS 232 C ports. 2.3 Use of computer for instrumentation	-----do--	-----do-----	
3.	23 to 31	Memory	3.1 Principle and Construction of Floppy Disk Drive and hard disk device (HDD). 3.2 Floppy disk Controller Hard disk controller & Pen Drives. 3.3 Common faults with hard disk drive and floppy disk drive 3.4 RAM Modules	-----do--	-----do--	
4.	32 to 40	Keyboard and Mouse	4.1 Block Diagram of keyboard Controller 4.2 Keyboard switches, keyboard faults, mouse, common faults with mouse. 4.3 Introduction to scanner, digitizer.	Electronics communication by K.S. Jamwal, Dhanpat Rai and Sons, Communication system by A.K. Gautam S.K. Kataria Sons	Electronic Communication Systems by George Kennedy Tata McGraw Hill	

5.	41 to 49	CRT Display Devices	5.1 Block Diagram, Principle of operation of Computer Monitor 5.2 Difference between TV & Computer Monitor, Video display Adaptors (monochrome and Colour), introduction to solid state displays.	-----do--	-----do--)
6.	50 to 56	Printers	6.1 Printing Mechanism, Construction and working principles of Dot Matrix Printer, Inkjet Printer, Laser Printer 6.2 Printer Controller, Centronic Interface, Signals from PC to Printer and Printer to PC.	-----do--	-----do--)

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Date: 09/8/23	


GP Kangra	Department: ECE	Subject: DC
	Course: Diploma	Duration : 03 Years
Syllabus Planned	Total Periods: 56(T) + 28 (P)	Theory: 56

SYLLABUS PLANNED

S. N.	Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks
1	1-3	Introduction Basic block diagram of digital and data communication systems. Their comparison with analog communication systems.			
2	4-15	Coding 2.1 Introduction to various common codes 5 bit Baudot code, 7 bit ASCII, ARQ, EBCDIC 2.2 Code error detection and correction techniques - Redundancy, parity, block check character (BCC), Vertical Redundancy check (VRC), Longitudinal Redundancy Check (LRC), Cyclic Redundancy check (CRC), Hamming code.			
3	16-26	Digital Modulation Techniques Basic block diagram and principle of working of the following: Amplitude shift keying (ASK): Interrupted continuous wave (ICW), two tone modulation - Frequency Shift keying (FSK) - Phase shift keying (PSK), Quadrature Phase Shift Keying (QPSK)	Electronic Communication Systems by George Kennedy Tata McGraw Hill Education Pvt. Ltd. New Delhi	Advanced Communication Systems by Wayne Tomasi, Pearson New Int. Edition	
4	27-31	Characteristics/working of data transmission circuits: bandwidth requirements, data transmission speeds, noise, cross talk, echo suppressors, distortion, equalizers.			
5	32-41	Modems Need and function of modems, Mode of modems operation (low speed, medium speed and high speed modems). Modem interconnection, Modem data transmission speed, Modem modulation method.			
6	42-53	Digital telephone exchange Basic block diagram of digital exchange and its working. Stored program control processor (SPC) and its applications in digital electronic exchanges.			
7	54-56	Space and time switching: Working principle of STS and TST switching.			

Extra Topics to be covered beyond the scope of the syllabus (as required by industry/ as recommended by Teacher which he/ she find as necessary)

S. N.	Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks

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Date	