

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY,
BHILAI**

**DIPLOMA PROGRAMME IN ELECTRONICS & TELE-COMMUNICATION
ENGINEERING**

Semester – VI

COURSE OF STUDY AND SCHEME OF EXAMINATION

S. No	Board of Study	Course Code	Course	Periods/Week (In Hours)			Scheme of Examination					Credit L+(T+P)/2	
				L	T	P	Theory			Practical			Total Marks
							ESE	CT	TA	ESE	TA		
1.	Electronics & Telecomm Engg / computer Engg.	228611 (28/22)	Computer Networking	4	1	-	100	20	20	-	-	140	5
2.	Electronics & Telecomm Engg	228612 (28)	TV – Video Technique & Multimedia Systems	4	1	-	100	20	20	-	-	140	5
3.	Electronics & Telecomm Engg	228613 (28)	Advance Communication	3	1	-	100	20	20	-	-	140	4
4.	Electronics & Telecomm Engg/Computer Engg.	228614 (28/22)	Advance Microprocessors & Microcontrollers	3	1	-	100	20	20	-	-	140	4
5.	Mechanical Engg	200615 (37)	Entrepreneurship Development	4	1	-	100	20	10			130	5
6.	Electronics & Telecomm Engg./ computer Engg.	228621 (28/22)	Computer Networking Lab	-	-	3	-	-	-	40	10	50	2
7.	Electronics & Telecomm Engg	228622 (28)	TV – Video Technique & Multimedia Lab	-	-	2	-	-	-	40	10	50	1
8.	Electronics & Telecomm Engg	228623 (28)	Advance Communication Lab	-	-	2	-	-	-	40	10	50	1
9.	Electronics & Telecomm Engg	228624 (28)	Advance Microprocessors & Microcontrollers Lab	-	-	3	-	-	-	40	10	50	2
10.	Electronics & Telecomm Engg	228625 (28)	Major Project	-	-	3	-	-	-	80	30	110	2
TOTAL				18	5	13	500	100	90	240	70	1000	31

L: Lecture hours; T: Tutorial hours, P: Practical hours.

ESE – End of Semester Exam; CT – Class Test; TA- Teacher's Assessment;

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

- A) **SEMESTER** : **VI**
 B) **SUBJECT TITLE** : **COMPUTER NETWORKING**
 C) **CODE** : **228611 (28/22)**
 D) **BRANCH/DISCIPLINE** : **Electronics & Tele-communication**
 E) **RATIONALE** : The aim of this course is to develop some level of specialization in students of Electronics & Telecommunication engineering. In this age of computer technology where day-to-day business transactions in banks, railway reservations, industrial sale, purchase, industrial automation/process and educational environments are all dependent on computers and other communication devices. This course will enable the students to understand some essential aspects of the various computer-networking systems.

F) TEACHING AND EXAMINATION SCHEME:

Course Code	Periods/Week (In Hours) (Teaching Scheme)			Scheme of Examination						Credit L+(T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
228611 (28/22)	4	1	-	100	20	20	-	-	140	5
228621 (28/22)	-	-	3	-	-	-	40	10	50	2

L : Lecture hours : T : Tutorial hours, P : Practical hours
 ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment

G) DISTRIBUTION OF MARKS AND HOURS:

Sl. No.	Chapter No.	Chapter Name	Hours	Marks
1	1	Network Essential		
2	2	Net Address		
3	3	Internet Protocol		
4	4	UDP And TCP		
5	5	Routing & Internet Multicasting		
6	6	Socket Interface & Domain Name System		
		Total		

H) DETAILED COURSE CONTENTS:

Chapter – 1 : Network Essential

- Introduction, Network Components, Basic of NIC, LAN servers, Hubs (Active and Passive), Repeaters, Types of Switches, Connectors, Bridges, Routers, Gateways, Structured Cabling.
- Local Area Network- components of LAN,
- LAN Access Techniques: - Network Protocols, MAC Sub Layer Access Protocols, ALOHA, CSMA, CSMA/CD (Introduction Only) IEE 802.2, 802.3, 803.4, 802.5 and their Comparisons.

Chapter – 2 : NET Address

- IP address, Network and Broadcast address, Internet addressing Technologies: Advantages and Disadvantages, Dotted Decimal Notations, Loop Back Address.
- Link Control, Need of Link, HDLC Protocol.
- Address Resolution Problem, Resolution Through: Direct Mapping, Dynamic Binding, and Reverse Address Resolution Protocols.

Chapter – 3 : Internet Protocol

- Virtual Network, Connectionless Delivery System,
- Datagram Format: Datagram, Size Network MTU and Fragmentation, Timestamp Option, IP Routing Algorithm, ICMP: Introduction, Message Format, Ping.
- Proxy ARP, Subnet Addressing, Subnet Mask, Supernet Addressing.

Chapter – 4 : UDP And TCP:

- Introduction to Used Datagram Protocol, Format of UDP Message, PSEUDO Header, Multiplexing And Demultiplexing, Introduction to Transmission Protocol, Ports, Collections and end points, TCP Segment Format, Check sum Computation, Establishing a TCP Connection.

Chapter – 5 : Routing & Internet Multicasting:

- Vector Distance, Gateway-to-Gateway Protocol, Routing Information Protocol (RIP), Open SPF Protocol.
- H/W Broadcast, H/W Multicast, IP Multicast and Address, Mapping IP Multicast to Ethernet Multicast, IGMP and Message Format.

Chapter – 6 : Socket Interface & Domain Name System:

- Creating a Socket, Specifying a Local Address, Sending and Receiving Data.
- Mapping DNS Addresses, Domain Server Message Format, and Applications: TELNET, FTP, HTTP.

I) SUGGESTED INSTRUCTIONAL STRATEGIES:

- Lecture session could be conducted directly in the computer laboratory for enhanced understanding
- Use audio visual aids

The course teachers are expected to demonstrate the application of network in their colleges. They should also demonstrate the use of the various computer-networking

systems. The teacher should allow the students to work on the network-operating environment.

J) SUGGESTED LEARNING RESOURCES.

(a) Reference Books :

Sl. No.	Title	Author, Publisher, Edition & Year
1	Internet Working With TCP/IP	(Douglas E. Comer) PHI
2	TCP/IP Protocol Suite	(B.A. Forouzen) TMH
3	Computer Network	(A.S. Tenenboum) PHI
4	MCSE network essentials	Becky kirsininkas; Tata McGraw Hill, New Delhi, 1998
5	ABCs of Local Area Networks	Dortch; BPB Publication; New Delhi, 1999
6	Networking Essential Study Guide	Perkins; BPB Publication; New Delhi, 2000
7	Networking	Tannenbaum;Mc-Graw Hill International, New York, 1994
8	Local Area Networks	Hodson; BPB Publication; New Delhi, 2000
9	Networking Websites	http://www.Learntosubnet.com http://www.Microsoft.com http://www.Novell.com http://www.Sunsite.metalab.unc http://www.Redhat.com http://www.lttutor.com

(b) Others:

- Lab Manuals.

Subject: Computer Networking Lab

Practical Code : 228621 (28/22)

Hours: 48

LIST OF PRACTICALS / TUTORIALS:

1. Case study of network operating systems: - windows 2000, window-NT, Novell network, and primary domain controllers.
2. Installation and configuring of Novell and NT server.
3. Use IP addressing in networking.
4. Design a network system for an organization with TCP/IP network using.
 1. Class a address
 2. Class b address
 3. Class c address
5. Write a program for demonstrating: -
 1. TELNET
 2. FTP
 3. PING
6. Network administration, network security, securing server, password.
7. Use socket programming for:
 1. Client
 2. Server

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL
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- A) **SEMESTER** : **VI**
 B) **SUBJECT TITLE** : **TV-VIDEO TECHNIQUES & MULTIMEDIA SYSTEMS**
 C) **CODE** : **228612 (28)**
 D) **BRANCH/DISCIPLINE** : **Electronics & Tele-communication**
 E) **RATIONALE** : The aim of the course TV-Video techniques & Multimedia Systems is to provide the basic knowledge of TV transmission and reception circuits and to develop the skill to operate, monitor/control, test, align and to troubleshoot/maintain the TV circuits at transmitter and receivers.

It is necessary for the student of communication engineering to understand the inside of the TV's and video cameras and other related devices. This course fulfills the job requirement in TV/video industries and communication media centers. The course covers basic fundamentals of TV system and circuits. It also covers practical applications and troubleshooting/servicing of TVs. The emphasis is given on practical oriented techniques.

F) TEACHING AND EXAMINATION SCHEME:

Course Code	Periods/Week (In Hours) (Teaching Scheme)			Scheme of Examination						Credit L+(T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
228612 (28)	4	1	-	100	20	20	-	-	140	5
228622 (28)	-	-	2	-	-	-	40	10	50	1

L : Lecture hours : T : Tutorial hours, P : Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher's Assessment

G) DISTRIBUTION OF MARKS AND HOURS:

Sl. No.	Chapter No.	Chapter Name	Hours	Marks
1	1	TV Fundamentals	08	08
2	2	Monochrome TV transmission	12	14
3	3	Monochrome TV reception	15	18
4	4	Colour TV transmission & reception	15	20
5	5	TV Cameras & Picture tube	10	12
6	6	Multimedia as an application of computer in TV/ VIDEO	15	20

Sl. No.	Chapter No.	Chapter Name	Hours	Marks
7	7	Latest development in TV devices	05	08
		Total	80	100

H) DETAILED COURSE CONTENTS:

Chapter – 1 : TV Fundamentals

- Requirements & standards.
 - Introduction to TV systems & their different blocks
 - TV system & standards adopted in India & other countries
 - TV channels
 - TV parameters

Chapter – 2 : Monochrome TV transmission

- Fundamentals
 - Block diagram of monochrome TV Transmitter
 - Scanning
 - Blanking & synchronizing pulses.
 - Composite video signal
 - Positive & negative transmission.

Chapter – 3 : Monochrome TV reception

- Introduction
- Typical circuits of a various stages like tuner, IF amplifier, synchronous detector (video of sound) AC etc.
- Testing & alignment of monochrome
- Troubleshooting. & Servicing of monochrome TV's

Chapter – 4 : Colour TV transmission & reception.

- Colour theory, Colour mixing
- Block diagram with PAL coder
 - Frequency interleaving
 - Colour sub carrier
 - *PAL decoder
 - *NTSC & SECAM
- Testing/alignment in Colour TV receiver.
- Troubleshooting & servicing of Colour TV sets.

Chapter – 5 : TV cameras and picture tubes

- Function
- Types of camera
- Principles of operation
 - Photoelectric effect, image-storing principle, electron scanning beam, video signal generation by photoconduction & photoemission.
 - Vidicon camera tube-construction and working
 - Silicon diode array vidicon- construction and working
 - Camera optics, focal length, lens turret, zoom lens
 - Monochrome T.V. camera system

- Gamma correction in camera system
- Colour T.V. camera system
- Grass man's law & generation of luminance signal
- Monochrome picture tubes- working
 - Colour picture tubes
 - Delta
 - PIL

Chapter – 6 : Multimedia as an application of computer in TV/Video

- Concept of multimedia
- Linking process of TV with computer
- Concept of sound blaster
- Concept of video blaster
- Picture mixing using computer
- Picture handling
- Computer animation concept use of pinned and other animation softwares of multimedia.
- LCD projector
- Video recording techniques
- VCD
- DVD
- MPEG

Chapter – 7 : Latest development in TV devices

- Projection TV
- LCD TV
- Calander TV
- Long persistence TV
- PIP TV's
- FST
- Sorround sound in TV
- HDTV
- LCD, DLP projectors

I) SUGGESTED INSTRUCTIONAL STRATEGIES:

- In this course, only physical explanations of different concepts are expected. Detailed mathematical derivations and analysis is not expected.
- For better understanding of radio receivers, assembly alignment and troubleshooting a visit to a radio receiver assembly unit should be arranged
- Different specifications of radio receivers should be discussed referring to commercial receivers in the market
- Faults are to be created in different stages in one practical period of two hours. Students should be asked to detect minimum three faults
- Minimum five practical experiences should be covered on troubleshooting to include 15 different types of faults

J) SUGGESTED LEARNING RESOURCES.

(c) Reference Books :

Sl. No.	Title	Author, Publisher, Edition & Year
1	Electronic communications systems	George Kennedy, McGraw-Hill Ltd., Singapore, 3 rd , 1984
2	Electronic communication	Dennis Roddy & John Coolen, prentice Hall of India Pvt. Ltd. New Delhi, 4 th , 1995
3	Communication systems	D. D. Ahirrao & N.S. Jadhav, Everest Publication Pune, 1 st , 1998
4	Telecommunications principles circuits and systems	S. Rambhadran, khanna Publishers New Delhi, 5 th , 1986
5	Colour TV troubleshooting	RC Vijay
6	Basic TV: Theory and servicing	Zbar – TMH Pub
7	Colour TV and video technology principle & applications	AK Maini – CBS Pub
8	Basic TV transmission and reception	AK Maini – CBS Pub.
9	Television engineering	AK Dhake – TMH Pub.
10	Servicing home video cassette recorders	Hobbs M.
11	Monochrome and colour TV	R.R. Gulati – Welley Pub.
12	Cable television	Maynard

(d) Others:

- Lab Manuals.
- Service Manuals

Subject: TV – Video Technique & Multimedia Lab

Practical Code : 228622 (28)

Hours: 32

LIST OF PRACTICALS / TUTORIALS:

1. Familiarization with consumer and technician control & safety precautions
2. Identify different components and section in TV receiver (B/W & Colour)
3. Signal injection and signal tracing in black & white & Colour TV
4. Voltage and waveform measurements of signal
5. Alignment of RF, VIDIF and SIF sections
6. Study of composite video signal
7. Colour TV adjustments, gray scale tracking, Colour killer, focus, chroma traps, sound traps, saturation control, black level
8. Familiarization with specification, operation and use of TV set equipment, DVM, TVM, Monochrome & Colour pattern generators, sweep generator, X-Y display wobbuloscope etc.
9. Test TV antenna and booster

10. Troubleshoot VCRs for simple faults
11. Study of multimedia and animation
12. Use of various video cameras and its controls.

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL
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- A) **SEMESTER** : **VI**
 B) **SUBJECT TITLE** : **ADVANCED COMMUNICATION**
 C) **CODE** : **228613 (28)**
 D) **BRANCH/DISCIPLINE** : **Electronics & Tele-communication**
 E) **RATIONALE** : The broadband and data communication became advanced with the use of computers and data processing and continues to develop in to a major industry providing the interconnection and transmission services between distant sites.

The course aim is to provide knowledge about advancement in concept, equipment and process of communication at various frequencies. The Subject deals with news way of data transmission i. e. through optical fibre. In addition it covers advanced data networks, satellite communication and RADAR mobile communication. The course will be useful to up date the knowledge of students about new advancement in communication.

F) TEACHING AND EXAMINATION SCHEME:

Course Code	Periods/Week (In Hours) (Teaching Scheme)			Scheme of Examination						Credit $L+(T+P)/2$
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
228613 (28)	3	1	-	100	20	20	-	-	140	4
228623 (28)	-	-	2	-	-	-	40	10	50	1

L : Lecture hours : T : Tutorial hours, P : Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment

G) DISTRIBUTION OF MARKS AND HOURS:

Sl. No.	Chapter No.	Chapter Name	Hours	Marks
1		Optical fiber communication	20	30
2		Data communication	10	20
3		Mobile Communication	12	20
4		Radar	12	15
5		Satellite communication	10	15
		Total	64	100

H) DETAILED COURSE CONTENTS:

Chapter – 1 : Optical fibre communication

- Fundamentals of fibre optics.
 - Fibre optic cables and its characteristics
 - Types of fibres
 - Fibre parameters.
 - Propagation modes
- Optical transmitter and receiver
 - Transmitter and receiver characteristics
 - Block diagram
 - Modulation and demodulation techniques.
 - LEDs and detectors
 - Line coding and decoding
 - Analog bandwidth PC to PC communication
 - Specification criteria in selection of transmitter and receiver.
 - Power meter used in optical fibre link.
 - Special tools and their uses in fibre coning/splicing and cutting.

Chapter – 2 : Data communication

- Introduction
- Transmission mode
 - Simplex
 - Half duplex
 - Full duplex
- Data communication codes
 - Baudot code
 - ASCII code
 - Code error correction
 - Synchronization
- Data communication hardware
 - LCU
 - DCE
 - DTE
 - UART
 - USRT
- Data communication interfaces
 - RS 232C
 - RS 449A
 - DATA MODEMS

Chapter – 3 : Mobile communication

- Modulation techniques for mobile communication
- BPSK, QPSK; transmission & detection techniques
- GSM-global system for mobile; service & features, GSM system architecture, GSM radio sub system, types of GSM channel, GSM frame structure, signal processing in GSM
- Introduction to CDMA digital cellular standard

Chapter – 4 : Radar

- Basic principle
- Basic block diagram.
- General terms
- Range equation
- Effects of noise
- Types of radar pulsed and CW
- Pulse radar, beacon MTI, Doppler effect, FMCW, blind speed.
- Methods of scanning
- Display methods.

Chapter – 5 : Satellite communication

- Introduction
- Launches & launch vehicles
- Orbital effects in communication system performance
- Spacecrafts subsystems
- Satellite links
- Earth station- equipment, antenna
- Satellite TV network
- Operation of a typical satellite TV/ cable TV system

I) SUGGESTED INSTRUCTIONAL STRATEGIES:

- Lecture session with question and answer
- Use of audio visual aids
- Assignment on various topics. Moreover, when teaching this course, more applications exercises have to given in laboratory

J) SUGGESTED LEARNING RESOURCES.

(e) Reference Books :

Sl. No.	Title	Author, Publisher, Edition & Year
1	Satellite communications	Aggarwal, Wiley eastern ltd. New Delhi, 1 st , 1994
2	Optical fibre system design and application	Charles K kao, PHI publications, New Delhi, 1 st , 1994
3	Advanced communication system	Ahirrao, D.D. & Jadhav N.S., Vrinda publications Jalgaon, 2 nd , 1999
4	Introduction to telephony & Telegraphy	Jolly E.H., McGraw Hill , International, New York, 1 st , 1990
5	Advance Electronic Communication Systems	Wayne Tomasi Prentice Hall International Edition
6	Principles of Communication Systems	Taub and Schilling Mc Graw Hill International Edition
7	Communication Systems: An Introduction to signal and noise electrical communication	A. Bruce Carlson Mc Graw Hill International
8	Fibre Optics Communication and Other	Henry Zanger & Cynthia Zanger

	Applications	Maxwell Macmillan International Edition
9	Modern Digital Analog and Communication Systems	B.P. Lathi Prism Book Pvt. Ltd
10	Introduction to digital communication switching	John Ronayne Wheeler Publications
11	Communication systems : An Introduction to signals and noise electrical communication	A. Bruce Carlson Mc Graw Hill International Edition

(f) Others:

- Lab Manuals.

Subject: Advance Communication Lab

Practical Code : 228623 (28)

Hours: 32

LIST OF PRACTICALS / TUTORIALS:

1. Study of optical fibre parameters.
2. Study of optical fibre as transmission media.
 - (a) TDM with 16 channels.
 - (b) Measurement of Numerical aperture
 - (c) Framing in TDM
 - (d) Manchester coding and frequency response of a CODEC
3. Study of losses in optical fibre
 - (a) Measurement in optical fibre
 - (b) Measurement of propagation loss.
4. Study of characteristics of fibre optic LED and photo detector.
5. Study of PAM/PPM/PWM signals.
6. Forming simple fibre optic analog link.
7. Study of PC-to-PC communication using optical fibre link and two RS 232 cards.
8. Study of MTI, CW Doppler RADAR
9. Study of cable TV system
10. Study of satellite receiver
11. Study of Dish antenna

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL
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- A) **SEMESTER** : **VI**
 B) **SUBJECT TITLE** : **ADVANCE MICROPROCESSOR & MICROCONTROLLERS**
 C) **CODE** : **228614 (28/22)**
 D) **BRANCH/DISCIPLINE** : **Electronics & Tele-communication**
 E) **RATIONALE** : The aim of this course is intended to help the students to understand the principles and procedures of advance microprocessor and their applications. The micro controller that is a computer on a chip simpler in hardware is capable of having several different functions depending on the wishes of the programmer. Currently, use of micro controller is increasing in industries and therefore, it is necessary for the students to undertake this course.

F) TEACHING AND EXMINATION SCHEME:

Course Code	Periods/Week (In Hours) (Teaching Scheme)			Scheme of Examination						Credit L+(T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
228614 (28/22)	3	1	-	100	20	20	-	-	140	4
228624 (28/22)	-	-	3	-	-	-	40	10	50	2

L : Lecture hours : T : Tutorial hours, P : Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment

G) DISTRIBUTION OF MARKS AND HOURS:

Sl. No.	Chapter No.	Chapter Name	Hours	Marks
1		Architecture of 8086	8	15
2		Advance Microprocessors	8	15
3		Micro Controller 8051	12	25
4		Micro Controller Programming & Designing	18	25
5		Applications	18	20
		Total	64	100

H) DETAILED COURSE CONTENTS:

Chapter – 1 : Architecture of 8086

- Introduction: Features of 8086, Functional block diagram of 8086
- Bus Interface Unit (BIU): Pipelining, Segment register, Rules for segmentation

- Instruction: Instruction Pointer, Address Generation, Execution Unit (EU), Control Circuitry, Instruction Decoder
- ALU: Flag Register, General Purpose Register, Pointers & Index Register, Comparison With 8085
- Operating Modes of 8086: Min Mode, Max Mode, and Pin Definitions.

Chapter – 2 : Advance Microprocessors

- Comparison of different 16 bit microprocessors
- Introduction to microprocessor: Block level study of 8087, Introduction to 80286 Microprocessors, Introduction to 80386, Introduction to 80486
- Pipelining: Elementary idea of Pipeline, Pipelined architecture.
- Brief Introduction of Pentium: Series of Pentium 1, 2, 3 & 4 and their Special Features

Chapter – 3 : Micro Controller 8051

- Introduction to Micro Controller, Comparison between Microprocessor & Micro controller.
- 8051 Micro Controller Hardware: 8051 Block diagram, Function of each block, 8051 Programming model, Internal memory organization, Special function registers, I/O Pin ports, counters & timers.

Chapter – 4 : Micro Controller Programming & Designing

- Assembly Language Mnemonics
- Assembly Language Programming: Data transfer, Logical operations, Arithmetic operations, Jump & Call instructions.
- Micro Controller Specification

Chapter – 5 : Applications

- Interface Keyboards to 8051 Based Micro Controller: Interface LED & LCD display
- Interfacing Key Board, Display LCD & LED Matrix
- Micro Controller System To A/D & D/A Converters
- 8051 Data Communications Modes, Example, Programmes.
- Elementary Idea of Supervisory Control and Data Acquisition (SCADA)

I) SUGGESTED INSTRUCTIONAL STRATEGIES:

Assignments and programming suggested will help the students to get thorough knowledge on the subject. When teaching this course more drill and practice exercises have to be given in laboratory and as well as in home assignments.

J) SUGGESTED LEARNING RESOURCES.

(g) Reference Books :

Sl. No.	Title	Author, Publisher, Edition & Year
1	Advance Microprocessors & peripherals	A.K. Ray & K.M. Bhurchundi (TMH)
2	Programming & Interfacing of 8086/8088	Douglas V. Hall (TMH)
3	The Intel 8086/8088, 80286, 80386, 80486,	Barry B. Brey

	Pentium & Pentium, Pro processor Architecture & Interfacing	
4	Microcomputer systems 8086/8088 family, programming and interfacing	Y. Liu & G.A. Gibson (PHI)
5	Introduction to programmable logic controller	Dunning, Gary, Delmar, Thomson
6	8051 micro controller & embedded systems	M.A. Mazidi & J.G. Mazidi
7	The 8051 micro controller architecture programming & applications	Kenneth J. Ayala
8	Micro controllers	Peathnan (MacGraw Hill)
9	Intel Reference Manuals, Microprocessors' & Microcontrollers	Intel

(h) Others:

- VCDs.
- Learning Packages.
- Lab Manuals.
- Charts.

Subject: Advance Microprocessors & Microcontrollers Lab

Practical Code : 228624 (28)

Hours: 48

LIST OF PRACTICALS / TUTORIALS:

1. Identify different components/unit in 8086 kit.
2. Execute a sample programme
3. Develop 8051 assembly language programmes on trainer kit for addition of two 8 bit numbers and 16 bit numbers
4. Develop 8051 assembly language programmes on trainer kit for subtraction of two 8-bit numbers and 16 bit numbers
5. Develop 8051 assembly language programmes on trainer kit for Byte & bit logical operation
6. Develop 8051 assembly language programmes on trainer kit for multiplication & division of two 8-bit numbers/2 decimal numbers
7. Interface ELC matrix display
8. Interfacing design for A/D & D/A converter
9. Develop 8051 assembly language programmes on trainer kit for OR-ing of two 8-bit numbers
10. Develop 8051 assembly language programmes on trainer kit for AND-ing of two 8-bit numbers
11. Develop 8051 assembly language programmes on trainer kit for Inverse AND-ing of a 8-bit numbers
12. Develop 8051 assembly language programmes on trainer kit for Inverse EX-ORing of 8-bit numbers

13. Develop 8051 assembly language programmes on trainer kit for finding 1's and 2's complements of 8-bit numbers

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL
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- A) **SEMESTER** : **VI**
 B) **COURSE TITLE** : **ENTREPRENEURSHIP DEVELOPMENT**
 C) **CODE** : **200615 (37)**
 D) **BRANCH/DISCIPLINE** : **Electronics & Tele-communication**
 E) **RATIONALE** : It has been experienced in most parts of the world that entrepreneurship development is a means of rapid economic development vis-à-vis creation of gainful employment of masses. The myth that entrepreneurs are born and not made no longer holds good. Experiences of last few decades in India show that it is possible to develop entrepreneurs through planned efforts. These designed efforts are more essentially required in polytechnics where increasing unemployment has necessitated promoting self-employment/entrepreneurship as career option thereby creating more job providers than job seekers. This course focuses on inputs required for students to undertake entrepreneurial activities as career option.

F) TEACHING AND EXMINATION SCHEME:

Course Code	Periods/Week (In Hours)			Scheme of Examination						Credit L+(T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
200615 (37)	4	1	-	100	20	10	-	-	130	5

L: Lecture hours; T: Tutorial hours, P: Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher’s Assessment

G) DISTRIBUTION OF MARKS AND HOURS:

Sl. No.	Chapter No.	Chapter Name	Hours	Marks
1.	1.	Entrepreneurship Development	10	12
2.	2.	Forms of business organization	8	10
3.	3.	Institutional support for SSI	8	10
4.	4.	Planning a small scale industry	10	18
5.	5.	Management of small business firms	8	12
6.	6.	Project selection, formulation and appraisal	12	10
7.	7.	Problems of small industries	12	12
8.	8.	Entrepreneurial motivation training	12	10
		Total	80	100

H) DETAILED COURSE CONTENTS:

Chapter –1 : Entrepreneurial Development

- Definition of entrepreneurship,
- Characteristics of entrepreneurs,
- Factors influencing entrepreneurship,
- Need for promotion of entrepreneurship and small business
- Entrepreneurial Environment
- Environmental analysis.
- Government policies for setting up new small enterprises
- Opportunities in service industries.

Chapter – 2 : Forms Of Business Organization

- Forms of ownership
- Sole Proprietorship
- Partnership
- Cooperative society
- Joint – stock company
- Private Limited Companies
- Public Limited Companies

Chapter – 3 : Institutional support to SSI

- Institutional set up
- Industries centers,
- Industrial estates
- Institutional support at National level
- Institutional support at State level
- Commercial banks and financial institutions

Chapter – 4 : Planning a SSI

- What is planning?
- Types of planning
- Importance of planning
- Steps in planning
- Steps in planning a SSI
- Technical dimensions for setting up an enterprise

Chapter – 5 : Management of Small Business Firm

- Functional areas of small business firm
- Fundamentals of Management
- Managerial effectiveness
- Essential data for effective control of small business
- Resource management
- Office management
- Employees Welfare & safety
- Factory rules and Labour Laws related to SSIs
- Sales Tax and Income Tax laws related to SSIs

Chapter – 6 : Project selection, Formulation & Appraisal

- Project selection & formulation
- Scope of project report
- Content & Format of Project report
- Need of Project Appraisal
- Steps of Project Appraisal

Chapter – 7 : Problems of Small industries

- Power shortages
- Project planning
- Finance
- Raw material
- Production constraints
- Marketing
- Personal constraints
- Regulations

Chapter – 8 : Entrepreneurial Motivation Training

- Achievement Motivation
- Creative thinking
- Risk taking abilities

I) SUGGESTED INSTRUCTIONAL STRATEGIES:

- Lecture Method.
- Industrial visits.
- Simulation
- Role play
- Interaction with successful entrepreneurs
- Demonstration.
- Games

J) SUGGESTED LEARNING RESOURCES:

(a) Reference Books :

Sl. No.	Title	Author, Publisher, Edition & Year
1.	Starting your own Business, A step-by-step Blue print for the First-time Entrepreneur	Stephen C. Harper, Mc Craw-Hill
2.	Harward Business Review on Entrepreneurship	Harvard Business School Press
3.	Entrepreneurship Development in small scale proceedings of National Seminar, DCSSI, New	Patel V.G.

	Delhi	
4.	Entrepreneurship : Strategies & Resources	Abrams Grant Pass, Oregon: Oasis Press
5.	The Business Planning Guide	David H. Bangs Upstart Publishing Company, In Chicago
6.	Entrepreneurship development in India	Dr. C.B. Gupta Dr. N.P. Srinivasan Sultan Chand & Sons

LIST OF TEAM WORK

Team Work will consist of collecting following information by the students:

1. Collect State industrial policy
2. Report of interaction with successful entrepreneurs/industrial visits
3. Prepare list of opportunities for business, service and industrial ventures
4. Whom to approach for What?
5. Facilities and incentives available from various support agencies

**CHHATTISGARH SWAMI VIVEKANAND TECHNICAL
UNIVERSITY, BHILAI**

- A) **SEMESTER** : **VI**
 B) **SUBJECT TITLE** : **MAJOR PROJECT**
 C) **CODE** : **228625 (28)**
 D) **BRANCH/DISCIPLINE** : **Electronics & Tele-communication**
 E) **RATIONALE** : Project work is the area in which a student can show his creativity resourcefulness, knowledge and various skills attained through the labs and workshop during the course duration.

Project work leads the student to develop his original thinking, group-discussion, leadership, interpersonal relations, inter disciplinary relation and polishes his behavior in the society.

He/she is also exposed to market-survey for procurement of components, suiting to the circuit, their equivalents, the process of try outs of circuits, modification of circuit values and finally getting the desired result.

An electronics & telecommunication diploma student has very vast scope of preparing project, as electronics has entered in every walk of life of the society and every hour of one's daily life.

The support of the institution, faculty members and supporting staff is of paramount importance and their quality is also reflected in the quality of the final shape of the project.

A good project-work earns credit for all concerned and increase scope of employment/self employment when presented to potential employer. With this view curriculum cannot be bound in any limits & boundary on papers. Reasonable freedom has to be given for selecting the project work as far as the project is feasible and economically viable and socially useful.

F) TEACHING AND EXAMINATION SCHEME:

Course Code	Periods/Week (In Hours) (Teaching Scheme)			Scheme of Examination						Credit L+(T+P)/2
	L	T	P	Theory			Practical		Total Marks	
				ESE	CT	TA	ESE	TA		
228625 (28)	-	-	3	-	-	-	80	30	110	2

L : Lecture hours : T : Tutorial hours, P : Practical hours

ESE – End of Semester Exam.; CT – Class Test; TA- Teacher's Assessment

G) DETAILED COURSE CONTENTS:

Suggested Topics /Areas for preparation of Projects for Electronics and Tele-communication:-

- Alphanumeric/Graphic display boards with or without using microprocessor.
- AM/FM Transmitter and receiver set for point-to-point communications, preferably with some modern features.
- Add on features for an existing T.V. receiver sets (i.e.) S-Band/Hyper-Band, Multi-screen, Video games, Remote control etc.)
- PAL to VGA converters (to use TV as computer monitor) & VGA to PAL converters (to use computer monitor as TV)
- Electronics/digital intercom-exchanges.
- Telephone handset modifications with some advance-features (i.e. auto dialing, auto-answering, memory dialing etc.)
- Infra-Red remote/Radio controls for domestic as well as display, using ADC-DAC for various appliances.

However the care should be taken that the project work should depict the following abilities & skills of the students.

1. Identification of project by market survey and industrial survey.
2. Selection/Design of a circuit for desired output.
3. Try-out & modification of the selected circuit/given circuit.
4. Design & fabrication of PCB & component mounting.
5. Procurement of components & equivalents.
6. Working skill of fabrication of the cabinet/chasis and mounting components & controls displays.
7. Testing of product and test report.
8. Market survey for product sales & economic viability of product (for entrepreneurship)
9. Costing of the project/product
 - i) Capital costs
 - ii) Material & production cost (for entrepreneurship)
10. Identify and approach various agencies for financial and technical assistance (for entrepreneurship)
11. Documentation of project report
 - i) Drafting
 - ii) Sketching
 - iii) Layout
 - iv) Presentation

J) SUGGESTED LEARNING RESOURCES.

(b) Reference Books :

Sl. No.	Title	Author, Publisher, Edition & Year
1	Electronics Magazines & journals	
2	District Industries Center	
3	Industrial problems discussed during industry visit / training	
4	Entrepreneurship development board magazine	
5	“Prime Minister Rojgar Yojana” projects from District collectorate	
