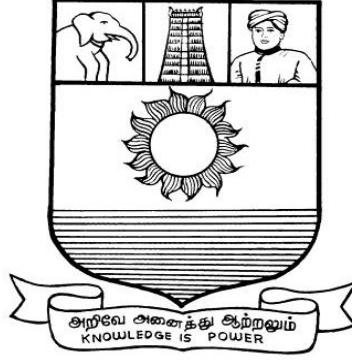


மனோன்மணியம் சுந்தரனார் பல்கலைக்கழகம்
திருநெல்வேலி – 627 012

**Manonmaniam Sundaranar University
Thirunelveli – 627 012.**



கல்விசார் நிலைக்குழுக் கூட்டம்

**MEETING OF THE STANDING COMMITTEE ON
ACADEMIC AFFAIRS HELD ON FRIDAY
THE 27th OCTOBER 2017.**

**Syllabus for Diploma in Electronic Security & CCTV Camera Systems
Course offered through Directorate of Vocational Education
(Community Colleges and Extension Learning Programme)
from 2017 – 2018**

DIPLOMA IN ELECTRONIC SECURITY & CCTV CAMERA SYSTEMS**SCHEME OF EXAMINATIONS**

Subject Code	Title of the Papers	Credit	Hours	Passing Minimum	SCC /GEC
Semester I					
C17ES11/E17ES01	Basic Electronics	6	90	40/100	GEC
C17ES12/E17ES02	Visual & Advanced Security System	6	90	40/100	SCC
C17ES13/E17ES03	Essentials of Computers	6	90	40/100	SCC
C17CE10/E17CE10	Communicative English	6	90	40/100	GEC
C17ESP1/E17ESP1	Basic Electronic – Practical knowledge of Electronic Components	4	90	40/100	SCC
Semester II					
C17ES21/E17ES04	Entrepreneurship and small business	6	90	40/100	GEC
C17ES22/E17ES05	Video Technology for Security system	6	90	40/100	SCC
C17LS23/E17LS05	Life skills	6	90	40/100	GEC
C17ESP2/E17ESP2	Visual and Advanced Security System – Installing and servicing	4	90	40/100	SCC
C17ESPW/E17ESPW	Project	10	60	40/100	SCC

Eligibility for admission: Pass in 12thstd examination conducted by the Govt. of Tamil Nadu Board of Secondary Education, Government of Tamil Nadu or any other equivalent examination.

Examination: Passing Minimum for each paper is 40%. Classification will be done on the basis percentage marks of the total marks obtained in all the papers and as given below:

40 % but less than 50 %	- Third class
50 % but less than 60 %	- Second class
60 % and above	- First class

Syllabus**First Semester :**

Paper-I	: Basic Electronics
Paper-II	: Visual & Advance security system
Paper-III	: Essentials of computers
Paper-IV	: Communicative English
Paper-V	: Practical 1 - Basic Electronics - Practical Knowledge of Electronic components

Second Semester :

Paper-VI	: Entrepreneurship and small business
Paper-VII	: Video Technology for Security System
Paper-VIII	: Visual & Advance security system – Installing & Servicing
Paper-IX	: Life Skill
Paper-X	: Project

***(Semester Pattern for Community College Only)**

(C17ES11/E17ES01) PAPER – I - BASIC ELECTRONICS

UNIT -I Type of materials- Current – Flow Of Electrons – Voltage – Watt – frequency – other measurements and units –

UNIT-II Type of power supplies – DC source – battery types – advantages of DC source – AC source – merits and demerits of AC – AC to DC Conversion - Precautions in working with power supplies.

UNIT-III Resistance - Capacitance - Inductance - Transformer - step Up and step down transformers - Tools and Instruments - Measuring tools - Measurements – Instruments – Volt meter – Ammeter – ohm meter – connection of measurements – using digital multimeter – clamp meter – calculating power and other factors.

UNIT-IV Analog signals – demerits of analog signals –digital signals – merits and demerits of digital signals – basic conversions – storage of digital signals – storage devices – digital capacity Disk and Drives

Reference books:

Basic Electronics – B.L Theraja
Basic Electrical – B.L. Theraja

(C17ES12/E17ES02) PAPER -II VISUAL & ADVANCE SECURITY SYSTEM

UNIT-I Introduction to TV and camera – Picture formation methods – frames and motions – frame rate and flicker – International standards in video formats – digital video formats.

UNIT-II Camera a glance – Camera imaging methods – Type of camera sensors – video format in analog cameras – video formats in digital cameras – frame rate and pixels – selecting camera types – Range of cameras Indoor and outdoor cameras – color and monochrome cameras – IR and night vision cameras – Special cameras – Camera mounting and fixing – Observation cameras – Remote handling of cameras

UNIT-III Video Management: Introduction, CCTV Cameras, CCD Camera Basics, Traditional CCTV System, Video Recording, Drawbacks, Digital Video Recording, Features, Functionalities, Digital Vs Analog Recording, Digital Video Management System – Introduction, Features, Advancements & Differences from Earlier Video Techniques, TCP/IP Networking Fundamentals, System Network Load Calculations, Network Design.

UNIT-IV Digital video recorders – Recording method – backup devices interfacing devices – connection with cameras – Cable type and distance of coverage – connectors - Noise control in transmission – Display

UNIT-V Additional security systems – Motion detection – proximity detection – Unauthorised access control - biometric security systems – remote access through internet and mobile phones – Access managements in remote access.

Reference books:

1. Reinhold A. Carlson Robert A. Di Giandomenico, 'Understanding Building Automation Systems: Direct Digital Control, Energy Management, Life Safety, Security Access Control, Lighting, Building', 1st edition (R.S. Means Company Ltd), (1991)

(C17ES13/E17ES03) PAPER – III ESSENTIALS OF COMPUTERS

UNIT-I Introduction to Computers- Introduction, Characteristics of Computers, Block diagram of computer. Types of computers and features, Mini Computers, Micro Computers, Mainframe Computers, Super Computers. Types of Programming Languages (Machine Languages, Assembly Languages, High Level Languages). Data Organization, Drives, Files, Directories. Types of Memory (Primary And Secondary) RAM, ROM, PROM, EPROM. Secondary Storage Devices (FD, CD, HD, Pen drive) I/O Devices (Scanners, Plotters, LCD, Plasma Display) Number Systems Introduction to Binary, Octal, Hexadecimal system Conversion, Simple Addition, Subtraction, Multiplication.

UNIT-II Operating System and Services in O.S. Dos – History, Files and Directories, Internal and External Commands, Batch Files, Types of O.S. Windows Operating Environment Features of MS – Windows, Control Panel, Taskbar, Desktop, Windows Application, Icons, Windows Accessories, Notepad, Paintbrush.

UNIT-III Editors and Word Processors Basic Concepts, Examples: MS-Word, Introduction to desktop publishing. Spreadsheets and Database packages Purpose, usage, command, MS-Excel, Creation of files in MS-Access, Switching between application, MS-PowerPoint.

Reference books:

1. Fundamental of Computers – By V.Rajaraman B.P.B. Publications
2. Fundamental of Computers – By P.K. Sinha
3. MS-Office 2000(For Windows) – By Steve Sagman
4. Introduction to computer.

(C17CE10/E17CE10) Paper IV Communicative English

Unit I: Learning context

Concept of learning – Learning style – Grammatical framework – sentence framing – paragraph and texts

Unit II: Reading

Basic concept – Purposes of reading-Decoding-Reading materials – Barriers of reading

Unit III: Writing

Basic concept-Writing style-Terminology-stages-English spelling and punctuation – Written texts

Unit IV: Speaking

Language functions-Conversation- Features of spoken English – Types of English course: functional English, English literature, advance English – Phonetic

Unit V: Developing Communication Skills

Meaning –Classroom presence- Features of developing learning process-
Practical skills and Listening- uses of communicative English

References Books:

1. Raman, m.&S. Sharma (2011) communication skills, OUP,New Delhi: India
2. Lata, P.&S. Kumar(2011) communication skills, OUP,New Delhi: India,
- 3.Leech,G&J.Svartvik(2002) A communicative grammar of English,
Pearson,India,
4. Sethi, J. and P.V. Dharmija (2007) A course in Phonetics and spoken
English. Second
edition, Prentice hall: New Delhi

(C17ESP1/E17ESP1) PAPER V- PRACTICAL I

Basic Electronics - Practical Knowledge of Electronic components

Semester II

(C17ES21/E17ES04)Paper VI ENTREPRENEURSHIP AND SMALL BUSINESS

UNIT-I Er.-Entrepreneurship-Enterprise: Conceptual issues. Entrepreneurship vs. Management. Roles and functions of er in relation to the enterprise and in relation to the economy. Entrepreneurship is an interactive process between the individual and the environment. Small business as seedbed of Entrepreneurship. [The teachers should emphasize to students the desirability as well as feasibility of a career in Entrepreneurship in the Indian scenario.] Entrepreneur competencies, Entrepreneur motivation, performance and rewards.[The teachers may make use of Entrepreneurship Development Institute of India's Inventory of Entrepreneur Competencies and National Institute of Entrepreneurship and Small Business Developments training kit for arousing Entrepreneur motivation and capacity and capability building].

UNIT-II Opportunity scouting and idea generation: role of creativity and innovation and business research. Sources of business ideas. Entrepreneur opportunities in contemporary business environment, for example opportunities in net-work marketing, franchising, business process outsourcing in the early 21 century.[The students be advised to visit various product/service franchises, BPO concerns and meet up/down links in the net-work marketing.] The process of setting up a small business: Preliminary screening and aspects of the detailed study of the feasibility of the business idea and financing/non-financing support agencies to familiarize themselves with the policies/programs and procedures and the available schemes.] Preparation of Project Report and Report on Experiential Learning of successful and unsuccessful entrepreneurs. [The students may be advised to develop a structured instrument [questionnaire] for conducting surveys of the various aspects of entrepreneur/enterprise. They may also be advised to prepare a comprehensive business plan. The desirability and feasibility of liaison with relevant funding and non-funding agencies may also be explored.

UNIT-III Management roles and functions in a small business. Designing and re-designing business process, location, layout, operations planning and control. Basic awareness on the issues impinging on quality, productivity and environment. Managing business growth. [The pros and cons of alternative growth options: internal expansion, acquisitions and mergers, integration and diversification. Crisis in business growth.

UNIT-IV Principles of double-entry book-keeping: journal entries, cash-book, pass book, and Bank Reconciliation Statement, ledger accounts, trail balance and preparation of final accounts: Trading and Profit and Loss Account; Balance-sheet. Brief introduction to Single-Entry system of record keeping. Sources of risk/venture capital, fixed capital, working capital and a basic awareness of financial services such as leasing and factoring.

UNIT-V Issues in small business marketing. The concept and application of product life cycle [plc], advertising and publicity, sales and distribution management. The idea of consortium marketing, competitive bidding/tender marketing, negotiating with principal customers. The contemporary perspectives on Infrastructure Development, Product and Procurement Reservation, Marketing Assistance, Subsidies and other Fiscal and Monetary Incentives. National state level and grass-root level financial and non-financial institutions in support of small business development.

Reference books:

1. Brandt, Steven C., The 10 Commandments for Building a Growth Company, Third Edition, Macmillan Business Books, Delhi, 1977
2. Bhide, Amar V., The Origin and Evolution of New Business, Oxford University Press, New York, 2000.
3. Dollinger M.J., 'Entrepreneurship strategies and Resources', 3rd edition, Pearson Education, New Delhi 2006.
4. Desai, Vasant Dr. (2004) Management of small scale enterprises New Delhi: Himalaya Publishing House,
5. Taneja, Gupta, Entrepreneur Development New Venture Creation, : 2nd ed. Galgotia Publishing Company
6. Holt, David H., Entrepreneurship: Strategies and Resources, Illinois, Irwin, 1955.
7. Panda, Shiba Charan, Entrepreneurship Development, New Delhi, Anmol Publications.
8. Patel, V.G., The Seven Business Crises and How to Beat Them, Tata-Mcgraw, New Delhi, 1995.
9. SIDBI Report n Small Scale Industries Sector[latest edition]
10. Verma, J.C., and Gurpal Singh, Small Business and Industry-A Handbook for Entrepreneurs, Sage, New Delhi, 2002 11. Vesper, Karl H., New Venture Strategies, [Revised Edition], New Jersey, Prentice Hall, 1990

(C17ES22/E17ES05)Paper VII : Video Technology for Security system

Unit.1: Video Protection – Asset protection – Emergency and disaster plan- Security Investigations- safety – the role of the Guard – Employee Training and Education – Synergy through Integration – Applications- Video system solutions- overt vs Covert Video – Security Surveillance Applications – Safety applications- Video Access Control

Unit.2: Video system - Role of Light and Reflection – The Lens function – camera function- transmission function – monitor function – recording function - Scene illumination- Natural light – Artificial light – scene characteristics – target size – reflectivity- effects of motion – scene temperature

Unit.3: Lenses – Fixed focal length lens – Zoom lens – Veri-focal lens- Panoramic -360o lens – convert Pinhole lens – special lenses – Cameras – Scanning Process – Raster- Digital & progressive scan – solid-state cameras – Analog-digital-Internet – Low-light- level-intensified camera- thermal imaging camera

Unit.4: Transmission – hard-wired- Coaxial cable- Unshielded Twisted Pair- LAN, WAN, Intranet and Internet – Wireless – Fiber Optics – Standard Switchers – Microprocessor- Controlled Switchers

Unit.5: Monitors- Monochrome-color-CRT, LCD, Plasma Displays – Audio/video – Recorders – Video Cassette Recorder (VCR)- Digital Video Recorder (DVR)- Optical Disk

Reference books:

1. Herman Kruegle, CCTV surveillance Video Practices and Technology, (2nd Ed), Butterworth- Heinemann Publications.

(C17LS23/E17LS05) PAPER VIII (LIFE SKILL)

(Common to All Courses)

UNIT-I ATTITUDE : Positive thinking – Goal setting – Problem Solving and Decision making – Leadership and Team Work.

UNIT-II COMMUNICATION SKILLS: Oral communication: Concept of English language – Fluency – Verbal communication in official and public situations.

UNIT-III COMMUNICATION SKILLS: Written Communication: Comprehension – Writing a formal letter like application for Job, enquiry, reply, complaint and such others – preparation of Resume, Curriculum Vitae.

UNIT-IV COMPUTING SKILLS – 1: Introduction to Computers, its various components and their respective functions – Memory storage devices – Microsoft (MS) Office – MS Word.

UNIT-V COMPUTING SKILLS – 2 Internet Basics – Origin of Internet – MODEM – ISP – Upload – Download – e-mail – Origin of worldwide web (www) Browsers – Search engines.

Reference books:

Life skill, Manonmaniam Sundaranar University Publications Division (2011)

(C17ESP2/E17ESP2) PAPER IX - PRACTICAL II

Visual & Advance security system – Installing & Servicing

(C17ESPW/E17ESPW) PAPER X : PROJECT
