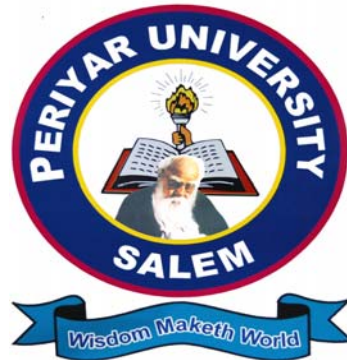


**PERIYAR UNIVERSITY
PERIYAR PALKALAI NAGAR
SALEM – 636 011**



DEGREE OF MASTER OF PHILOSOPHY

CHOICE BASED CREDIT SYSTEM

SYLLABUS FOR M.PHIL. ELECTRONICS & COMMUNICATION

**FOR THE STUDENTS ADMITTED FROM THE
ACADEMIC YEAR 2012 – 2013 ONWARDS**

| Sem | Code | Paper Name | Hrs/ Week | Credits | Marks | | |
|-----|------|--------------------------------|--------------|---------|-------|-----|-------|
| | | | | | CIA | EA | Total |
| I | | Research Methodology | 4 | 4 | 25 | 75 | 100 |
| | | Advanced Electronics | 4 | 4 | 25 | 75 | 100 |
| | | Special Paper (Guide Paper) | 4 | 4 | 25 | 75 | 100 |
| II | | Dissertation – Viva- Voce | | 12 | 50 | 150 | 200 |

PAPER : 1- RESEARCH METHODOLOGY
CODE :

Hrs/Week : 4
Internal : 25 Marks
External : 75 Marks

Unit I INTRODUCTION TO RESEARCH

Research – Definition-Importance and meaning of research – characteristics of research – Types of Research- steps in research- identification, selection and formulation of research problem- Research questions- Research design- Formulation of Hypothesis – Review of Literature.

Unit II DATA COLLECTION AND SAMPLING

Sampling techniques – sampling theory- types of sampling – steps in sampling and non-sampling error- sample size – Advantages and limitations of sampling- collection of Data Primary Data – Meaning –Data collection methods – Secondary data- meaning Relevance’s – Limitations and cautions.

Unit III DISTRIBUTIVE FUNCTIONS AND HYPOTHESIS

Random Variable and cumulative distributive function – Density Functions – Expectations and moments – Discrete Distributions- Continuous distributions .

Simple Hypothesis versus simple alternative –composite Hypothesis – Tests of Hypothesis – Chi-Square tests – sequential Test of Hypothesis.

Unit -IV Z- TRANSFORMS

Transform of standard functions – Convolution –Initial and Final value problems – Shifting Theorem- Inverse transform (Using Partial Fraction- Residues)- Solution of difference Equations using Z-Transform.

Unit – V PREPARATION OF TECHNICAL PAPERS

Preparation of technical papers and thesis writing- art of writing of scientific article- writing a thesis- presentation of data – symbols –

the observations- tables and figures equations- the style – sentence length –word length – page and chapter format- referencing.

Text Books:-

1. Anderson, J. Dusrston, B.h. and Poole, M. Thesis and Assignment, writing, Wiley Eastern (1977)- I Edition
2. Alexander M.Mood, Franklin A, Graybill and Duane C.Boes, Introduction to the theory of statistics. – III Edition Mc-Grawhill
3. M.K.Venkataraman, “Higher Mathematics for Engineering & Science”, National Publishing Company, 2000
4. C. Hawkins and M..sorgi, Narosa, Research- How to plan, speak and write about it, - I Edition Pearson Education,

Unit – IV

EMBEDDED SYSTEMS

Introduction – Application of embedded systems – embedded systems development process – Round Robin – Round Robin with interrupts – Function Queue – Scheduling architecture – Kernel architecture – Types of embedded operating system – RTOS – Mobile handheld operating system

8051 Micro controller architecture – Assembly language programming for 8051 micro controller family- Introduction to ARM processor.

Unit – V

THIN FILM TECHNOLOGY

Introduction to Thin Films – Thin Films growth process – Thermal Evaporation – Resistive Heating – Flash Evaporation – Arc Evaporation – Laser Evaporation – RF Heating – Electro Bombardment Heating

Cathode Sputtering- Glow Discharge Sputtering –RF Sputtering – Ion Beam Sputtering – Chemical Vapor Deposition – APCVD- Substrate Materials – Substrate Cleaning – Thin film Resistors, Capacitors, Diodes and Transistors- Photo Conductive detectors – Thin Films Solar cells – Information storage devices

Text Books:

1. Bernard Sklar , Digital Communication Fundamentals and Applications, II Edition Pearson Education.
2. Neil H.E.Weste, David Harris and Ayan Banerjee, CMOS VLSI Design, III Edition Pearson Education.
3. Tai-Ran Hsu, MEMS and Microsystems: Design and Manufacture, Tata McGraw Hill- .
4. Daniel W. Lewis: Fundamentals of Embedded software, Prentice Hall of India, New Delhi.
5. David E. Simon, An Embedded software primer Pearson Education.
6. Kasturi Lal Chopra and Inderjeet Kaur- Thin film Device Applications – II Edition EEE

7. K.L. Chopra- Thin Film Phenomena, I Edition, Mc Graw- Hill,
New York.

Paper : III- Special Paper
(Guide Paper)

Code :

Hrs/Week : 4

Internal : 25 Marks

External : 75 Marks

Syllabus will be framed by Guide