

No.AC.2(S)/378/2020-21

NOTIFICATION

Sub: Continuing the existing Ph.D. course work syllabus from the academic year 2020-21.

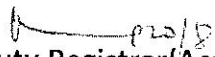
Ref: 1. Decision of Board of Studies in Electronics (PG) meeting held on 04.01.2020.
2. Decision of the Faculty of Science & Technology Meeting held on 18.02.2020.
3. Decision of Academic Council meeting held on 18.06.2020.

The Board of Studies in Electronics (PG) which met on 04.01.2020 has recommended to continue with the existing Ph.D. Course Work syllabus with the Credit Pattern of L:T:P: :4:1:0 from the academic year 2020-21.

The Faculty of Science and Technology and Academic Council meeting held on 18.02.2020 and 18.06.2020 respectively have approved the above said proposal and the same is hereby notified.

The credit pattern of LTP of Ph.D. course work syllabus is annexed. The contents may be downloaded from the University Website i.e., www.uni-mysore.ac.in.

Draft approved by the Registrar


Deputy Registrar(Academic)
Deputy Registrar (Academic)
University of Mysore
Mysore-570 005

To:

1. The Registrar (Evaluation), University of Mysore, Mysore.
2. The Dean, Faculty of Science & Technology, DoS in Psychology, MGM.
3. The Chairperson, BoS in Electronics (PG), DoS in Electronics, Hemagangotri, Hassan.
4. The Chairman, DoS in Electronics, Hemagangotri, Hassan.
5. The Director, College Development Council, Moulya Bhavan, Manasagangotri, Mysore.
6. The Deputy/Assistant Registrar/Superintendent, AB and EB, UOM, Mysore.
7. The P.A. to the Vice-Chancellor/Registrar/Registrar (Evaluation), UOM, Mysore.
8. Office file.



Syllabus of the PhD Programme in Electronics

Title of the Paper: **Research Methodology**

L : T : P :: 4 : 1 : 0

Unit 1: Introduction

Meaning of Research. Objectives of Research. Motivation in Research. Types of Research. Research Approaches. Significance of Research. Research Methods versus Methodology. Research and Scientific Method. Importance of Knowing How Research is Done. Research Process. Criteria of Good Research, Problems Encountered by Researchers in India.

Unit 2: Defining the Research Problem

What is a Research Problem? Selecting the Problem. Necessity of Defining the Problem. Technique Involved in Defining a Problem. An Illustration.

Unit 3: Research Design

Meaning of Research Design. Need for Research Design. Features of a Good Design. Important Concepts Relating to Research Design. Different Research Designs. Basic Principles of Experimental Designs.

Unit 4: Publishing a Scientific Paper

Publication & Peer Review: Deciding to Publish, Submitting Your Paper After Submission, Overview of Peer Review, Purpose of Peer Review How It Works The Role of Editor Limitations and Issues. Writing a Scientific Manuscript: The Scientific: The Abstract, Introduction, The Methods & Materials Section, The Results Section The Discussion Section Figures, Tables, Equations, and References, Writing a Literature Review

Unit 5: Interpretation and Report Writing

Meaning of Interpretation, Why Interpretation? Technique of Interpretation: Precaution in Interpretation Significance of Report Writing. Different Steps in Writing Report. Layout of the Research Report. Types of Reports. Oral Presentation. Mechanics of Writing a Research Report. Precautions for Writing Research Reports. Conclusions.

Unit 6: MATLAB

Matrix algebra, Data analysis, data interpolation, Polynomials, cubic splines, Fourier analysis, optimization, Integration and differentiation, Differential equations, Two dimensional graphics, three dimensional graphics, using color and light, images movies and sounds, printing and exporting graphics, handling graphics, graphical user interface(GUI).

Unit 7: Lab VIEW

Visual instruments. Graphical environment. Building front panel. Building a block diagram. Math Script, Grouping data: Array & Cluster. Debugging and Profiling, VIs.

Unit 8: Instruments

Working principle and types of measurements from SEM, TEM, AFM, EDAX, HRTEM, and XRD. Block diagram, working principle and types of measurements from Digital Storage Oscilloscope, Spectrum analyzer, Logic Analyzer, Vector Network Analyzer.

Reference:

- (1) C.R.Kothari, "*Research Methodology: Methods and Techniques*", New Age International Publishers, 1st Edition, 2004.
- (2) B.S. Murthy, P Shankar, Baldev Raj, B.B Rath, James Murday "*Textbook of and Nanotechnology*". University Press (India) Private Limited, 1st edition, 2012.
- (3) <http://www.jyi.org/resources/320/Guide%20to%20Science%20Writing.pdf>
- (4) Duane Hanselman, Brauce Littlefield "Mastering MATLAB 7", Pearson, 2008
- (5) Nasser Ketharnavaz, "*Digital Signal Processing System Design: LabVIEW Based Hybrid Programming*" Academic press, 2nd edition, 2008.