

ABOUT COLLEGE OF ENGINEERING (A), OU

The University College of Engineering (UCE) has the distinction of being the oldest and the biggest among the Engineering Colleges of the State of Andhra Pradesh. Established in the year 1929, eleven years after the formation of Osmania University, it was the 6th Engineering College to be established in the whole of British India. The College moved to its present permanent building in the year 1947. Today it is the biggest among the campus colleges of Osmania University. The Golden Jubilee of the College was celebrated in 1979, the Diamond Jubilee in 1989 and the Platinum Jubilee in 2004. The College was made autonomous in 1994. The College offers four-year engineering degree courses leading to the award of Bachelor of Engineering (B.E.) in Biomedical Engineering, Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communications Engineering and Mechanical Engineering. The College also offers courses leading to Master of Computer Applications, Master of Science by Research and also Master of Engineering and Ph.D., in the various branches of Engineering. Part-time courses are offered at postgraduate levels. As of today, there is a yearly intake of 320 undergraduate students (full-time) and 290 postgraduate students (full-time and part-time). There are 109 teaching staff members, including 24 professors.

ABOUT THE DEPARTMENT

The Department of Mechanical Engineering was established in the year 1939 at University College of Engineering, Osmania University to offer five year Degree Program with an initial intake of 50 students. It has since then grown significantly by spreading its academic activities in offering courses at Undergraduate level as well as Post Graduate level. Currently each year the department admits 60 students for the Undergraduate programme and 64 for the Post Graduate courses (Production Engineering, Turbo machinery and Automation & Robotics) in regular stream and 45 in part time Production Engineering, Automation & Robotics & Turbo machinery stream. The Department also admits 50 students for Post Graduate courses (CAD/CAM and Tool Design) offered in Collaboration with CITD. The Department receives research and modernization grants from UGC, MHRD, AICTE and TEQIP. So far the department has produced 117 Ph.D.s. The department has well equipped laboratories to facilitate opportunities for experimentation in the areas of Rapid Prototyping, CAD/CAM, Machine Tools & Metrology, Production Technology, Material Testing, Metallurgy & Material Science, Thermal Engineering and Heat Transfer.

TOPICS COVERED IN STTP

- Research Methodology
- Defining the Research Problem
- Literature Survey and Review
- Research Design
- Exploration of Data
- Data Analysis
- Research Report Writing
- Research Proposal Preparation

RESOURCE PERSONS

The resource persons are drawn from the Staff within the Department of Mechanical Engineering, Renowned persons from other faculties of Osmania University and other prestigious organizations.

REGISTRATION FORM

SHORT TERM COURSE ON ENGINEERING RESEARCH METHODOLOGY

(18-22, June 2018)

1. Name.....
2. Designation
3. Name of the Organization.....
4. Address for Correspondence:
5. Phone No.....
6. E-Mail.....

REGISTRATION

All the research scholars of CIVIL and Mechanical Engg. departments are eligible for the registration of this course work.

CONTACT DETAILS

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Course Director ERM 2018

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ORGANIZED BY

Dept. of Mechanical Engineering
University College of Engineering (Autonomous)
Osmania University
Hyderabad – 500 007

CHIEF PATRON

Prof. S. Ramachandram
Vice Chancellor, Osmania University

PATRONS

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Dean, FOE,UCE, OU &

Prof. Sameen Fathima
Principal, UCE, OU.

COURSE DIRECTOR

Prof. P. Laxminarayana
MED, UCE, OU

COURSE COORDINATORS

Prof. Sriram Venkatesh
Dr. K. Buschaiah
MED, UCE, OU

ENGINEERING RESEARCH METHODOLOGY

Unit-I

Research Methodology: Objectives and Motivation of Research, Types of Research, Research Approaches, Significance of Research, Research Methods verses Methodology, Research and Scientific Method, Important of Research Methodology, Research Process, Criteria of Good Research, Problems Encountered by Researchers in India, Benefits to the society in general.

Defining the Research Problem: Definition of Research Problem, Problem Formulation, Necessity of Defining the Problem, Technique involved in Defining a Problem.

Unit - II

Literature Survey: Importance of Literature Survey, Sources of Information, Assessment of Quality of Journals and Articles, Information through Internet. **Literature Review:** Need of Review, Guidelines for Review, Record of Research Review.

Unit - III

Research Design: Meaning of Research Design, Need of Research Design, Feature of a Good Design Important Concepts Related to Research Design, Different Research Designs, Basic Principles of Experimental Design, Developing a Research Plan, Design of Experimental Set-up, Use of Standards and Codes.

Unit - IV

Data Collection: Collection of primary data, Secondary data, Data organization, Methods of data grouping, Diagrammatic representation of data, Graphic representation of data. Sample Design, Need for sampling, some important sampling definitions, Estimation of population, Role of Statistics for Data Analysis, Parametric V/s Non Parametric methods, Descriptive Statistics, Measures of central tendency and Dispersion, Hypothesis testing, Use of Statistical software.

Data Analysis: Deterministic and random data, Uncertainty analysis, Tests for significance: Chi-square, student's t-test, Regression modeling, Direct and Interaction effects, ANOVA, F-test, Time Series analysis, Autocorrelation and Autoregressive modeling.

Unit - V

Research Report Writing: Format of the Research report, Synopsis, Dissertation, Thesis its Differentiation, References/Bibliography/Webliography, Technical paper writing/Journal report writing, making presentation, Use of visual aids. **Research Proposal Preparation:** Writing a Research Proposal and Research Report, Writing Research Grant Proposal.

Suggested Reading:

1. C.R. Kothari; Research Methodology, Methods & Technique; New age international publishers, 2004
2. R. Ganesan; Research Methodology for Engineers; MJP Publishers; Chennai, 2011
3. Y.P. Agarwal; Statistical Methods; Concepts, Application and Computation; Sterling Publishers Pvt. Ltd; New Delhi; 2004
4. Dr. Vijay Upagade and Dr. Aravind Shende; Research Methodology; S. Chand & Company Ltd.; New Delhi; 2009
5. P. Ramdass and A Wilson Aruni; Research and Writing across the disciplines; MJP Publishers; Chennai, 2009