



INTRODUCTION TO RESEARCH

PROF. EDAMANA PRASAD

IIT Madras

PROF. PRATHAP HARIDOSS

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TYPE OF COURSE : Rerun | Elective | PG
COURSE DURATION : 8 weeks (21 Feb' 22 - 15 Apr' 22)
EXAM DATE : 23 Apr 2022

PRE-REQUISITES : Students who have completed undergraduate studies (in Engineering or Science) will be in a better position to benefit from this course

INTENDED AUDIENCE : Students of ME/MTech/MS/MSc/PhD can benefit.

COURSE OUTLINE :

Large numbers of students are actively considering and taking up research and associated higher studies. This course aims to introduce students to the important aspects of research. The intent of the course is to make students aware of the details associated with formal research and to help students overcome common misconceptions that may be present in their minds. By going through this course, students are likely to be able to take up research activities in a more systematic and formal manner right from the beginning.

ABOUT INSTRUCTOR :

E. PRASAD, Head, Teaching Learning Centre (TLC) and Associate Professor, Department of Chemistry, IIT Madras. He works in the areas of Fuel Cell and Carbon nanomaterials. He has a B.Tech in Metallurgical Engineering from IIT Madras, and a PhD in Materials Science and Engineering from the University of Wisconsin-Madison, USA. Before he joined as a faculty at IIT Madras, he served as a Senior Scientist at Plug Power, a Fuel Cell company in New York. He has 3 US patents, several International Journal publications, and has published a book titled "Physics of Materials, Essential Concepts of Solid State Physics"

Prof. Prathap Haridoss is a Professor in the Department of Metallurgical and Materials Engineering at IIT Madras. He works in the areas of Fuel Cell and Carbon nanomaterials. He has a B.Tech in Metallurgical Engineering from IIT Madras, and a PhD in Materials Science and Engineering from the University of Wisconsin-Madison, USA. Before he joined as a faculty at IIT Madras, he served as a Senior Scientist at Plug Power, a Fuel Cell company in New York. He has 3 US patents, several International Journal publications, and has published a book titled "Physics of Materials, Essential Concepts of Solid State Physics"

COURSE PLAN :

- Week 1** : A group discussion on what is research; Overview of research;
- Week 2** : Literature survey , Experimental skills;
- Week 3** : Data analysis, Modelling skills;
- Week 4** : Technical writing; Technical Presentations; Creativity in Research
- Week 5** : Creativity in Research; Group discussion on Ethics in Research
- Week 6** : Design of Experiments
- Week 7** : Intellectual Property
- Week 8** : Department specific research discussions