

Title of the course Doctoral Research Methodology for Energy Studies
 Course code EN 721
 Structure: L3 T1 P0 CR 4 Core course

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COs

1. Understanding the importance of research in the field of Energy and its role on sustainable development
2. Capable to plan and execute PhD research in the field of Energy
3. Acquire skill of reporting research outcomes

Units	Topics	No of lecturer
Unit 1	Understanding of research	1
	Type of research: based on area and purpose. Role of research on human development	1
	Understanding of Research procedure	1
	Overview of Energy study: past, present and future	2
	Some examples of landmark research on Energy	2
	Global and regional trends of energy research	2
Unit 2	Selection of research topics: how to avoid re-inventing wheel, Understanding the plan of research work: optimising level of expectation on the basis of resources availability, Preparation of the research plan: essential elements	3
	Essence of reviewing literature, Sources and types of research literature –journal paper and patent search	2
	Introduction of major research data bases, Methods for collection of data Major considerations for data collection: comprehensiveness, accuracy, test of repeatability, Data analysis and its interpretation: uses of software	3
	Research Methodology: Experiments, Quantitative Methods and Computer Applications	3
	Use of statistics of energy research	2
	Use of models for energy research: benefits and limitations	2
Unit 3	Reporting research outcomes Preparation and presentation of Figures, Graphs and Tables Features of technical writing	2
	Process of manuscript preparation, thesis preparation	3
	Use of Software for Plagiarism detection	2

List of tutorials (15-20 Hours)
1. Familiarize the Energy research
2. Recognising the major research organizations of selected areas of the individual scholar
3. Understanding the concept of research funding
4. Understanding the international and national priority of energy research of selected area
5. Familiarization with major publishing houses related to energy research
6. Literature search: patent and journals
7. Manuscript preparation:
8. Submission of research manuscript: Uploading
9. Preparation for seminar presentation
10. Practices Software for Plagiarism detection

Evaluation: As per the normal procedure of the University (Written tests, Assignments, Presentation)

Books and reference materials:

1. Kothari C R (2004) Research Methodology: Methods and Techniques. New Age International Private Limited Publishers, New Delhi
2. Drake P (2010) Practitioner Research at Doctoral Level: Developing Coherent Research Methodologies. Routledge Publisher
3. Bly R W and Blake G (2002) Elements of Technical Writing 1 New ed Edition. Pearson
4. E-contents provided time to time