EE541: Research Methodology in Electrical Engineering

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<tr>
<th>Teaching Scheme</th>
<th>Credits</th>
<th>Marks Distribution</th>
<th>Total Marks</th>
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Course Content:

1. **How to Start Research:**

   - Find what is expected of the you: Identify specific requirements for evaluation/review and what constitutes completion of your work.
   
   - Decide which sources you will need: Differentiate between journals, conferences, books, magazines and their Quality, Understand how to establish their quality and authenticity.
   
   - Finding Information: How to conduct effective searches, How to find relevant papers related to your area of research, How to capture critical information.
   
   - Identify main ideas in scholarly literature: Understand and identify the bias, theoretical position and evidence produced.
   
   - Write notes to organize your ideas: Compare ideas and concepts from different papers.
   
   
   - References: Understand the importance of distinguishing your work from others works and acknowledging such references, Learn international standards of referencing.

2. **Focus to Problem & Understand the Direction of Research:**

   - Identify Problem and Methods to Solve it: Analyze the question, Identify key areas in your field, Determine the nature and extension of papers that you should read.
   
   - Identify the gaps: Learn to Critique existing knowledge and how to find the gap.
   
   - Formulate the Problem Statement: Understand what should be the key aspects of your problem statement Examples of effective and ineffective Titles.
Validation: Identify problem and experimental/theoretical data for comparison with your model, earn how to extrapolate/scale data for validation, Find what acceptable level of error and justification thereof is.

3  **Publishing Research:**

Writing your Assignment: Identify the key features of any written work, Structure your assignment.

Build your argument: Recognize the importance of emphasizing your point, Distinguish between your point and the evidence available, Acknowledge the evidence.

Review and finalize your work: Know and follow the Process of reviewing and proof reading your work.

Writing your Assignment: Identify the key features of any written work, Structure your assignment.

Build your argument: Recognize the importance of emphasizing your point, Distinguish between your point and the evidence available, Acknowledge the evidence.

Review and finalize your work: Know and follow the Process of reviewing and proof reading your work Use feedback to improve your work.

4  **Showcasing the Research:**

Delivering Your Presentation

Check the logistics of your presentation: Identify the key message of your presentation, Understand the expectations and what will be the key review points.

Develop the structure of your presentation: Understand the key components of an oral presentation, Know the usual structure of a good presentation.

Putting together the support material: Identify all the material you need to carry as supporting material.

Get feedback on oral presentation: Prepare for delivery of your Oral presentation, Rehearse and time your presentation.

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Write notes to organize your ideas: Compare ideas and concepts from different papers.


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| Total Hrs. | 16 |

**Reference Books:**