

**The University of Jordan**  
**Mechanical Engineering Department**  
**Faculty of Graduate Studies**

**Research Methodology (0904709)**

**Instructor:**

**Outline:**

In this course, the student learns how to conduct a scientific research, starting from developing the research idea up to writing and presenting a technical report. The course starts by attending a number of lectures given by faculty and invited speakers where models of researches and case studies in advanced fields of mechanical engineering are presented. Meanwhile, students undertake limited researches of their own under the supervision of faculty staff members to learn how to define the problem; how to make literature review, searching through various resources such as the Engineering Index and Internet. Methods of Solution: Analytical, Numerical and Experimental methods. Report writing: Introduction; Analysis; Description of the experiment; Experimental procedure; Results; Discussion Conclusions; Recommendations; References; Abstract. At least one report/ paper will be prepared and presented by the student in front of colleagues and staff.

**Objectives:**

The student is expected to gain the following skills during this course:

- Understand the steps involved in conducting research in the different fields of Mechanical Engineering
- Select a research problem
- Prepare a thorough literature review
- Develop a research proposal
- Do the intended research (data collection, analysis, comparisons, ...)
- Prepare a research report
- Present and defend the research work.

**Grade Distribution:**

Assignments & Participation: 30 %

Mid-Term Exam (Proposal) : 30%

Final Exam (Final Report): 40%