



**University of Sistan and
Baluchestan**

Department of Mechanical Engineering

Course title: Research Methods

Instructor: Tahereh Fanaei Sheikholeslami

Credits: 3

Description of the Course

This course concerns about research methods in all branch of mechanical engineering. The course introduces the language of research, ethical principles and challenges, and the elements of the research process within different methods. It teaches the students how to successfully design a research and understand the underlying principles of postgraduate research from an engineering perspective.

The students will learn about what constitutes research? What makes research a contribution? Where does research fit in? Also, they will understand the concepts of argument, planning and conducting a research. Finally they will learn and experience different type of scientific writings.

References

- **Reference 1:** “Engineering Research Methodology”, Deb, D., Dey, R., Balas, V. E., 2019.
- **Reference 2:** “Research Methodology_ Methods and Techniques” by C.R. Kothari, Second Revised Edition, 2004.

Course Details

Week	Contents	Works
1	Introduction: What Is Research?	
2	Literature Review and Technical Reading 1	Use AutoFormat in Words
3	Literature Review and Technical Reading 2	Write a Mechanism Description
4	Attributions and Citations: Giving Credit Wherever Due	Write a Process Description
5	Building Intellectual Property Rights	Trace Curves in Excel
6	Ethics in Engineering Research	Write Proposal-first part
7	Technical Writing and Publishing 1	Write Proposal-second part
8	Technical Writing and Publishing 2	Analyze a scientific paper 1
9	Contributions, Arguments, and Dealing with Criticisms	Analyze a scientific paper 2
10	Research Management, Planning and Collaboration	Write a paper 1
11	Communicating Research Work: Presentation Skills 1	Write a paper 2
12	Communicating Research Work: Presentation Skills 2	Write a paper 3
13	Bibliometrics and Research Quality	Prepare a presentation for your paper
14	Seminar	
15	Seminar	
16	Review and Final Exam	

Evaluation

- Proposal: 15%
- Paper: 20%
- Seminar: 15%
- Other Works: 25%
- Final exam: 25%