

ETH-500 Scientific Research Methods and Ethics

Course Code:	ETH-500
UTAA Credit (Theoretical-Laboratory hours/week):	2(2-0)
ECTS Credit:	6.0
Department:	Mechanical and Aeronautical Engineering
Language of Instruction:	English
Level of Study:	Graduate
Offered Semester:	Fall and Spring Semesters.

Course Objectives

1. To learn what is science, scientific research methods
2. To learn scientific methodology, research design and data gathering
3. To learn types of scientific publications (thesis, scientific article, report etc.),
4. To learn ethical principles that need to be carried out in scientific researches and publications
5. Evaluating outstanding presentation techniques, systematically transferring the current developments in the area or one's own work to other groups in and out of the area; in written, oral and visual forms

Course Content

Definition and development of science, scientific research approach, literature survey, research design, quantitative and qualitative research methodologies, data gathering, writing techniques for thesis, project, and scientific article, ethical principles to be followed when conducting research, ethical principles to be followed when publishing, citation ethics, tips for a successful presentation, students presentations within the scope of their thesis topics/own engineering field.

Course Learning Outcomes

- 1-To learn what science, scientific knowledge, and historical development of science are
- 2-To learn scientific research methods and to be able to apply them
- 3-To be able to carry on a literature survey and analysis
- 4-To learn about various types of scientific publications and their basic properties
- 5-To learn, to anticipate and to follow ethics while pursuing a scientific work
- 6-To prepare presentations about technical or non-technical subjects.
- 7-To learn how to address the audience orally and audio-visually
- 8-To appreciate the importance of communication during presentation, to acquire the skill to perform presentations in front of communities