

# MA 577- Rotorcraft Design

<b>Course Code:</b>	MA-577
<b>UTAA Credit (Theoretical-Laboratory hours/week):</b>	3(3-0)
<b>ECTS Credit:</b>	6.0
<b>Department:</b>	Mechanical and Aeronautical Engineering
<b>Language of Instruction:</b>	English
<b>Level of Study:</b>	Graduate
<b>Offered Semester:</b>	Fall and Spring Semesters.

## Course Objectives

Overview of V/STOL Aircraft and where Rotorcraft Fit In, Overview of Rotorcraft Configuration Synthesis, Aerodynamics Review, Propulsion Review, Helicopter Preliminary Design Parametric Analysis, Techniques of Configuration Selection, Introduction to Individual Design Project, Introduction to Rotorcraft Structural Design, Rotorcraft Stability&Control Design Considerations Introduction to Team Design Project, Rotorcraft Transmission/Drive System Design Considerations, Rotorcraft Safety & Reliability Design Considerations, Rotorcraft Life Cycle Cost Design Considerations, Rotorcraft Overall Evaluation Criterion (OEC) Considerations

## Course Content

To teach conceptual design of rotorcraft

To carry out a conceptual design as a teamwork.

## Course Learning Outcomes

- 1-Recognize different rotorcraft configurations
- 2-Performs trade study
- 3-Can carry out sub system conceptual design
- 4-Can work as part of a team
- 5-Can carry out conceptual design of a helicopter for a given mission.