

UA 513- Applied Orbital Mechanics

Course Code:	UA-513
UTAA Credit (Theoretical-Laboratory hours/week):	3(3-0)
ECTS Credit:	6.0
Department:	Unmanned and Autonomous System Engineering
Language of Instruction:	English
Level of Study:	Graduate
Offered Semester:	Fall and Spring Semesters.

Course Objectives

This course aims to inform the students about the basic topics in orbital mechanics the basic information about the low Earth orbits, special Earth orbits and the basic information about calculations of the interplanetary orbits.

Course Content

The course content titles are: Dynamics of point masses, Two body problem, Time dependent orbital position, Three dimensional orbits, Orbit determination, Orbital maneuvers, Interplanetary orbits.

Course Learning Outcomes

- 1-Be able to define the natural laws related with orbital mechanics,
- 2-Be able to describe the low earth orbits and their usages,
- 3-Be able to perform the transformations among the coordinate systems,
- 4-Be able to calculate the time passing in orbit,
- 5-Be able to perform calculations the speed changes related with the orbital maneuvers and calculates the basic design parameters (time, speed changes) related with the interplanetary orbits,