

27037 - Mathematical Astronomy

Información del Plan Docente

Academic Year	2016/17
Academic center	100 - Facultad de Ciencias
Degree	453 - Degree in Mathematics
ECTS	6.0
Course	4
Period	Second semester
Subject Type	Optional
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

- Lectures in which the theoretical aspects of the subject are presented.
- Solution and oral or written presentation of theoretical and practical issues of the subject.
- Problems proposed for personal work.
- Sessions in which the students solve the proposed exercises and problems and discuss their solution procedure.

5.2.Learning activities

- Lectures with theoretical contents.
- Practical sessions with oral discussion of proposed problems whose solution student should previously have handed in.

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- Support for training through documents and links on the page of the subject in ADD, moodle.unizar.es (restricted to students registered with the PIN and password provided by the University)

5.3.Program

- Space and time reference frames. Astronomical coordinate systems.
- Two-body problem. Keplerian motion.
- Artificial satellite orbits.

5.4.Planning and scheduling

See the academic calendar of the University of Zaragoza and schedules established by the Faculty of Sciences.

5.5.Bibliography and recommended resources

- Abad, A. (2012) .: *Astrodinámica* . Editorial Bubok (<http://www.bubok.es/libro/detalles/219952/Astrodinamica>)
- Battin, R.H. (1999).: *An Introduction to the Mathematics and Methods of Astrodynamics, Revised Edition* . AIAA Education Series. Published by American Institute of Aeronautics and Astronautics. Inc.
- Danby, J.M. (1992).: *Fundamental of Celestial Mechanics* . Willmann-Bell, Inc. 2^a edición.
- Elices, T. (1991).: *Introducción a la Dinámica Espacial* . Instituto Nacional de Técnica Aeroespacial. Madrid.
- Vallado, D.A. (1997).: *Fundamentals of Astrodynamics and Applications* . Space Technology Series. McGraw Hill.