27037 - Mathematical Astronomy

Información del Plan Docente

Academic Year	2018/19
Subject	27037 - Mathematical Astronomy
Faculty / School	100 - Facultad de Ciencias
Degree	453 - Degree in Mathematics
ECTS	6.0
Year	4
Semester	First semester
Subject Type	Optional
Module	---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

- 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.

4.2.Learning tasks

- Lectures for explanation of theoretical contents.
- Practical sessions with oral discussion of proposed problems whose solution the students should previously have handed in.
- Support for learning through documents and links on the page of the subject at ADD, moodle.unizar.es (restricted access, with the PIN and password provided by the University)

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4.3.Syllabus

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

4.4.Course planning and calendar

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

4.5.Bibliography and recommended resources

BB	Abad, Alberto J.. Astrodinámica / Editorial Bubok /www.bubok.es//libro/detalles/219952/Astrodinamica. 2012
BB	Abad, A., Docobo, J.E., Elipe, A.. Curso de astronomía / Prensas Universitarias de Zaragoza, 2002
BB	Bond, V.R., Allman, M.C.. Modern Astrodynamics (Fundamentals and Perturbation methods). Princeton University Press, 1996
BB	Danby, J. M. A. Fundamentals of celestial mechanics / J. M. A. Danby . - 2nd ed., 3rd printing corr. and enl. Richmond, Virginia : Willmann-Bell, 1992
BC	Battin, Richard H.. An Introduction to the Mathematics and Methods of Astrodynamics. Rev. ed. American Institute of Aeronautics and Astronautics. 1999
BC	Elices, T.. Introducción a la Dinámica Espacial. Instituto Nacional de Técnica Aeroespacial. 1991
BC	Green, Robin M.. Spherical astronomy / Robin M. Green . Cambridge [etc.] : Cambridge University Press, cop. 198

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BC	Vallado, David A.. Fundamentals of Astrodynamics and Applications. 3rd. ed. Springer. 2007