26932 - Astronomy and Astrophysics

Información del Plan Docente

Academic Year	2016/17
Academic center	100 - Facultad de Ciencias
Degree	447 - Degree in Physics
ECTS	5.0
Course	
Period	First 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

The learning process designed for this subject is based on:

- Participatory master classes

- Learning based on cases

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- Learning based on problems

- Field work

- Preparation of reports

5.2.Learning activities

TRAINING ACTIVITY 1: acquisition of the basics of the contents of the course

TRAINING ACTIVITY 2: solving problems related to the contents of the subject

TRAINING ACTIVITY 3: acquisition of skills for astronomical observation. The practical classes have a special character because they are field works.

- Familiarization with the celestial sphere and different coordinate systems: horizontal, equatorial and galactic systems. Constellations crossing the celestial equator, the ecliptic, and the galactic equator.
- Familiarization with the arms of The Galaxy
- Familiarization with open and globular clusters

5.3.Program

- Positions, motions and distances of the stars
- Structure and kinematics of the stellar system
- Astronomic photometry
- Stellar structure and evolution
- The Sun and the solar system
- The interstellar medium
- The Milky Way constituents
- Normal galaxies and active galaxies

5.4.Planning and scheduling

Hours of master classes (h.m.c) and hours of solving problems and cases (h.p.c.) estimated for each chapter of the subject:

- Positions, motions and distances of the stars: 2 h.m.c.; 1 h.p.c.
- Structure and kinematics of the stellar system: 2 h.m.c.; 2 h.p.c.
- Astronomic photometry: 2 h.m.c.
- Stellar structure and evolution: 12 h.m.c.; 8 h.p.c.
- The Sun and the solar system: 2 h.m.c.
- The interstellar medium: 6 h.m.c.; 4 h.p.c.
- The Milky Way constituents: 2 h.m.c.
- Normal galaxies and active galaxies: 2 h.m.c.

5.5.Bibliography and recomended resources

- Stellar Structure and Evolution (Kippenhahn & Weigent; Springer-Varlag 1994)
- The Solar Sistem (Encrenaz, Bibring & Blanc; Springer-Verlag 1995)
- Physics of the Galaxy and Interstellar Matter (Scheffler & Elsässer; Springer-Varlag 1988)

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- Galactic Astronomy (Binney & Merrifield; Princeton 1998)
- Observational Astrophysics (Harwit; Springer-Verlag 1988)