



## Course guides

# 230804 - AIR - Astronomy & Radioastronomy

**Last modified:** 29/04/2020

**Unit in charge:** Barcelona School of Telecommunications Engineering  
**Teaching unit:** 748 - FIS - Department of Physics.

**Degree:** BACHELOR'S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN ELECTRONIC SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).  
BACHELOR'S DEGREE IN TELECOMMUNICATIONS SYSTEMS ENGINEERING (Syllabus 2010). (Optional subject).  
BACHELOR'S DEGREE IN NETWORK ENGINEERING (Syllabus 2010). (Optional subject).  
BACHELOR'S DEGREE IN TELECOMMUNICATIONS SCIENCE AND TECHNOLOGY (Syllabus 2010). (Optional subject).  
BACHELOR'S DEGREE IN TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Optional subject).

**Academic year:** 2020    **ECTS Credits:** 6.0    **Languages:** English

### LECTURER

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**Coordinating lecturer:** Garcia-Berro Montilla, Enrique

**Others:** Garcia-Berro Montilla, Enrique  
Torres Gil, Santiago

### PRIOR SKILLS

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Basic Mathematics and Physics

### REQUIREMENTS

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None

### TEACHING METHODOLOGY

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### LEARNING OBJECTIVES OF THE SUBJECT

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- To provide an introduction to astronomy and astrophysics.
- To apply the basic concepts of physics to studying the universe.
- To provide an introduction to a general knowledge of astronomy and space science.
- Basic contents of the course are: Observational and computational techniques in astronomy.



## STUDY LOAD

Type	Hours	Percentage
Hours large group	52,0	34.67
Self study	98,0	65.33

Total learning time: 150 h

## CONTENTS

1. Spherical astronomy

2. Observational techniques: optical and radioastronomy

3. Celestial mechanics

4. Observational properties of stars

5. Stellar evolution

6. Binary systems

7. The Milky Way

8. Galaxies

9. Origin and evolution of the Universe: the Big Bang

## GRADING SYSTEM

- Final examination 80%
- Practical applications 20%



## BIBLIOGRAPHY

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### Basic:

- Galadí Enríquez, D.; Gutiérrez Cabello, J. *Astronomía general: teoría y práctica*. Barcelona: Omega, 2001. ISBN 842821168X.
- Karttunen, H. [et al.]. *Fundamental astronomy*. 5th ed. Berlin [etc.]: Springer, 2007. ISBN 978-3540341437.
- Comins, N.F.; Kaufmann, W.J. *Discovering the universe*. 8th ed. New York, NY: W. H. Freeman and Co, 2008. ISBN 9781429205191.
- Pasachoff, J.M. *Astronomy: from the earth to the universe*. 6th ed. Australia [etc.]: Brooks/Cole, 2002. ISBN 0030334888.

### Complementary:

- Carroll, B.W.; Ostlie, D.A. *An introduction to modern astrophysics*. 2nd ed. San Francisco: Pearson Addison-Wesley, 2007. ISBN 0805304029.

## RESOURCES

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### Other resources: