

# Course Specifications

From the academic year 2017-2018 up to and including the

Course size (nominal values; actual values may depend on programme)  
Credits 6.0 Study time 180 h Contact hrs 52.5 h

Course offerings and teaching methods in academic year 2018-2019

A (semester 2)	Dutch	lecture	30.0 h
		seminar: coached	22.5 h
		exercises	

Lecturers in academic year 2018-2019

Baes, Maarten	WE05	lecturer-in-charge
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Offered in the following programmes in 2018-2019

	crdts	offering
<a href="#">Bachelor of Science in Physics and Astronomy</a>	6	A
<a href="#">Bachelor of Science in Mathematics</a>	6	A
<a href="#">Master of Science in Mathematics</a>	6	A
<a href="#">Preparatory Course Master of Science in Physics and Astronomy</a>	6	A

Teaching languages

Dutch

Keywords

Galaxies, morphology, stellar populations, interstellar matter, dark matter, kinematics, cosmology

Position of the course

This course is a sequel to the course "Introduction to astronomy". Here, the focus lies on galaxies in all their aspects: their morphology, stellar populations, interstellar matter, kinematics, evolution, and their role as building blocks in the Universe. The main goal of the course is to understand the fundamental astrophysical, dynamical and chemical processes that play a role in the evolution of galaxies and link these processes to observational characteristics.

Contents

- The early days of extragalactic astronomy
- Galaxy morphology
- Stellar populations
- The interstellar medium
- Stellar kinematics
- Dark matter in galaxies
- Active galactic nuclei
- Galaxies in the Universe

Initial competences

Final competences of the course Introduction to astronomy

Final competences

- 1 Understand the properties, advantages, disadvantages and constraints of galaxy classification schemes.
- 2 Know the properties of stellar populations and the various components of the interstellar medium and link them to observational characteristics.
- 3 Explain and interpret the fundamental kinematical and dynamical properties of galaxies.
- 4 Describe and interpret the different observational characteristics and potential candidates for dark matter on galaxy and galaxy cluster scales.
- 5 Understand the properties of active galactic nuclei and sleeping supermassive black

- holes and describe their observational signature.
- 6 Understand the evolution of galaxies in a cosmological context.
  - 7 Select and digest data on a chosen extragalactic subject, and present them in a written report using the correct astronomical terminology.

#### Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

#### Conditions for exam contract

This course unit cannot be taken via an exam contract

#### Teaching methods

Lecture, project, seminar: coached exercises

#### Learning materials and price

Dutch syllabus

Estimated price: 10 EUR

Presentations are available via Minerva

#### References

- Galactic Astronomy - ISBN 0691025657
- Galaxies in the Universe: An Introduction - ISBN 0521597404
- Dynamics of Galaxies - ISBN 0521478553

#### Course content-related study coaching

The material is thoroughly explained during the lectures. The lecturer and teaching assistant(s) are available for additional coaching.

#### Evaluation methods

end-of-term evaluation and continuous assessment

#### Examination methods in case of periodic evaluation during the first examination period

Written examination with open questions

#### Examination methods in case of periodic evaluation during the second examination period

Written examination with open questions

#### Examination methods in case of permanent evaluation

Assignment

#### Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible

#### Extra information on the examination methods

Theory: written exam

Exercises: written exam

Homework: concise paper on an extragalactic subject from APOD

#### Calculation of the examination mark

Theory exam: 50%

Exercises: 25%

Homework: 25%