



# ASTR1010

## Introductory Astronomy: Our Place in the Universe

Session 1, Weekday attendance, North Ryde 2020

*Department of Physics and Astronomy*

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#### Disclaimer

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

## General Information

Unit convenor and teaching staff

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Credit points

10

Prerequisites

Corequisites

Co-badged status

Unit description

This is a foundation unit in astronomy, suitable for aspiring physicists/astronomers and non-scientists alike. No prior knowledge of astronomy or physics is required. This unit gives a broad underpinning of basic astronomical subjects and concepts with minimal mathematical content. A diverse range of astronomical topics are covered, starting with Galactic stars including the Sun and then increasing in scale to the interstellar medium, our own Milky Way galaxy, galaxy clusters, quasars, black holes and basic cosmology. Key fundamental physical principles, theories and observational technologies are covered. Experimental work is both hands-on and computer based, and covers such areas as galaxy classification, eclipses, spectroscopy and geometrical optics. A session at the Macquarie University Observatory forms a recommended part of the practical work.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

**ULO1:** describe the structure and lifecycle of stars, including our Sun.

**ULO2:** demonstrate knowledge of the layout and contents of our Solar System.

**ULO3:** discuss how galaxies form, their basic structure and how they relate to the cosmology of the universe.

**ULO4:** explain practical and conceptual topics in observational astronomy.

**ULO5:** conduct hands-on experimental work, and analyse and draw conclusions from data.

## Assessment Tasks

### Coronavirus (COVID-19) Update

Assessment details are no longer provided here as a result of changes due to the Coronavirus (COVID-19) pandemic.

Students should consult [iLearn](#) for revised unit information.

[Find out more about the Coronavirus \(COVID-19\) and potential impacts on staff and students](#)

## General Assessment Information

Note that the 'estimated time on task' for each assessment item listed above is an estimate of the *additional* time needed to complete each assessment outside of all *scheduled* learning activities. These estimates assume that you actively engage with all scheduled learning activities *and* spend an additional 56 hours of self-led study during the session.

### Assignment 1 - Short Questions

This assignment will consist of short-answer questions. Assignments must be submitted on iLearn. The due date is 5pm Friday 3<sup>rd</sup> April 2020.

### Assignment 2 - Observations

This assignment will require observing the sky at night. Assignments must be submitted on iLearn. The due date is 5pm Friday 29<sup>th</sup> May 2020.

### Assignment 3 - Quiz

This assignment will be an online multiple-choice quiz. The assignments must be submitted on iLearn. The due date is 5pm Friday 5<sup>th</sup> of June 2020.

## Labs

Due: **See below**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

Each student **must attend five (5) practical sessions and complete five (5) laboratory exercises** starting in **Week 5**. The lab assessment is based on in-lab work only. The lab schedule is presented below (see 'Delivery and Resources').

**Attendance at labs is a hurdle requirement. You must attend at least 5 lab sessions to have the potential to pass the unit.**

## Exam

A two-hour final exam consisting of multiple-choice and short-answer questions will take place in the university examination period. No material will be allowed in the exam room.

If you receive [special consideration](#) for the final exam, a supplementary exam will be scheduled after the end of the normal examination period. By making a special consideration application for the final exam you are declaring yourself available for a resit during the supplementary examination period and you will not be eligible for a second special consideration approval based on pre-existing commitments. Please ensure you are familiar with the [policy](#) prior to submitting an application. Approved applicants will receive an individual notification one week prior to the exam with the exact date and time of their supplementary examination.

## Delivery and Resources

### Coronavirus (COVID-19) Update

Any references to on-campus delivery below may no longer be relevant due to COVID-19.

Please check here for updated delivery information: [https://ask.mq.edu.au/account/pub/display/unit\\_status](https://ask.mq.edu.au/account/pub/display/unit_status)

## Lectures:

- Monday 4-5 PM - 23 Wallys Walk - P. G. Price Theatre
- Friday 12-2 PM - 23 Wallys Walk - P. G. Price Theatre

Lectures are automatically recorded and will be available on iLearn, along with the lecture slides. Lectures will also be live streamed. The following link provides all information on lecture recordings and live streaming.

<https://students.mq.edu.au/support/study/tools-and-resources/ilearn/ilearn-quick-guides-for-students/lecture-recordings>

## Labs:

The labs will be held in 14 SCO (formerly known as E7B) rooms 213 and 209 (enter through 213). Students are required to do 5 labs, but have the option of doing a 6th (which they can do in the extra week). Only marks from the best 5 labs will be counted. The lab schedule is as follows - **note that this schedule is subject to change, and will be updated as necessary on iLearn:**

	Week 5	Week 6	Week 7		Week 8	Week 9	Week 10
Monday (2 PM - 4 PM)	Lab 1	Lab 2	Lab 3	Mid Semester Break	Lab 4	Lab 5	Extra Week
Wednesday (11 AM - 1 PM)	Lab 1	Lab 2	Lab 3		Lab 4	Lab 5	Extra Week
Thursday (11 AM - 1 PM)	Lab 1	Lab 2	Lab 3		Lab 4	Lab 5	Extra Week

**A mandatory lab notebook will be available from the bookstore after Week 3.**

Please note that health and safety regulations specify that fully-enclosed footwear must be worn in the labs. (i.e., you will **not** be admitted if you are wearing sandals, thongs, open-toed shoes, etc.)

## Textbook:

The lectures are based upon the following textbook, which is not absolutely required for the course, but is *strongly* recommended to enhance the learning process:

- *Foundations of Astronomy*, 14th Edition Michael A. Seeds and Dana Backman  
ISBN-10: 1337399922 / ISBN-13: 978-1337399920

Several copies of the textbook are on reserve at the University Library. Earlier editions of the textbook are acceptable, although please be aware that chapter numbers and some content may be different.

## Unit Schedule

### Coronavirus (COVID-19) Update

The unit schedule/topics and any references to on-campus delivery below may no longer be relevant due to COVID-19. Please consult [iLearn](#) for latest details, and check here for updated delivery information: [https://ask.mq.edu.au/account/pub/display/unit\\_status](https://ask.mq.edu.au/account/pub/display/unit_status)

Week	Lecturer	Topic	Textbook Chapters
1	D. Zucker	Introduction, the night sky and celestial motions, moon phases & eclipses	1, 2, 3
2	D. Zucker	Origins of modern astronomy, gravity, light & atoms (1)	4, 5, 7
3	D. Zucker	Light & atoms (2), telescopes, the Sun	7, 6, 8
4	D. Zucker	Introduction to stars, the interstellar medium	9, 10
5	D. Zucker	Star formation, Stellar structure and evolution	11, 12
6	D. Zucker	Stellar death, neutron stars & black holes	13, 14
7	D. Zucker / A. Lopez-Sanchez	Origin of the Solar System and extrasolar planets, Earth and other planets	18 - 25
8	A. Lopez-Sanchez	The Milky Way Galaxy	15
9	A. Lopez-Sanchez	Other Galaxies	16
10	A. Lopez-Sanchez	Active galaxies & supermassive black holes	16
11	A. Lopez-Sanchez	Modern cosmology I	17
12	A. Lopez-Sanchez	Modern Cosmology II	17
13	All	Revision Week	

**N.B. This schedule is flexible, and subject to change.**

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4*

*December 2017 and replaces the Disruption to Studies Policy.)*

Students seeking more policy resources can visit the [Student Policy Gateway](https://students.mq.edu.au/support/study/student-policy-gateway) (<https://students.mq.edu.au/support/study/student-policy-gateway>). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central>).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](https://ask.mq.edu.au)

If you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Changes since First Published

Date	Description
16/02/2020	The laboratory schedule was corrected to reflect the fact that 27 April is not observed as a holiday on the university academic calendar.