

## ASTR109 — The Cosmos: Birth and Evolution Course Outline | Ngā Whakamārama

0.125 EFTS    15 Points    First Semester

### Course overview | Whakamahuki

Tēnā koutou katoa!

In this "astronomy for poets" course, we take a grand tour of the universe! We will explore how our societies connect to our place in the cosmos, build your own personal awareness of how the Earth and sky relate, and gain an understanding of astronomy, astrophysics and planetary science, beginning with our Solar System and expanding outward to visit exotic stars, remote planets, and distant galaxies. During the journey we will learn about the ways we build this understanding, from voyaging Te Moana-nui-a-Kiwa | the Pacific to mapping the structure and origin of the Universe itself. Suitable for inclusion in any course of study.

**Me mātau ki te whetū, i mua i te kōkiri o te haere**  
*Before you set out on a journey, be sure you know the stars*

### Contacts | Ngā Tāngata Whakahaere

	<p><b>Dr. Ryan Ridden-Harper</b> <i>Course Coordinator, lecturer</i> ryan.ridden@canterbury.ac.nz (<i>Preferred</i>) Response ETA - 48 hours on working days</p>
	<p><b>Prof. Ray Jayawardhana</b> <i>Erskine Fellow, lecturer</i> West 816 ray.jayawardhana@canterbury.ac.nz (<i>Preferred</i>) Response ETA - 48 hours on working days</p>
	<p><b>Zac Lane</b> <i>Course Tutor</i> zgl12@uclive.ac.nz (<i>Preferred</i>) Response ETA - 48 hours</p>
	<p><b>Kyle Boucher</b> <i>Course Tutor</i> kyle.boucher@pg.canterbury.ac.nz (<i>Preferred</i>) Response ETA - 48 hours</p>

### Learning outcomes | Hua ako

Upon successful completion of this course, you should be able to:

- develop a personal and practical spatial and temporal awareness of the place of the Earth in the Universe
- understand how societies relate to the sky

- be familiar with the known chronology and whakapapa of the Universe, the techniques used in astronomy to gain that understanding, and the physical situations and processes that occur from the scale of planets through stars and galaxies to the Universe itself
- apply physical quantities and their uncertainties in everyday situations in the context of astronomy and the planetary sciences
- communicate your understanding of astronomy-related concepts to a wider audience.

## Course details and requirements | Ngā herenga

There are no prerequisites for this course. Most of what is involved here is problem solving and communications: **you do not need advanced mathematics skills**, though some general familiarity with basic high school mathematics is helpful. For the mathematical first-year astronomy course, see instead ASTR112, which continues through for the ASTR major.

To pass ASTR109 you must meet the following course requirements:

1. Actively participate in course work and tasks
2. Complete assessment activities to a satisfactory level
3. Achieve a grade of at least 50% in the sky diary assessment.

This is a 15 point (0.125 EFTS) course, estimated to take 120 learning hours over 12 weeks.

## Classes | Akoranga

This class has two lectures per week (Monday 3pm and Tuesday 11am), and one two-hour tutorial session (Friday 11am-1pm for those on campus; distance students in the evening). Locations and exact times should be visible on the *MyTimetable* system.

## Study | Ako takitahi

You should expect to spend about 10 hours per week on this course. You will need to schedule about 6 hours per week for self-directed study. In general, the 10 hours each week will be made up as follows:

- Four hours of course contact, as scheduled on *MyTimetable*.
- Around six hours of independent study: reading, reviewing lecture notes/videos, completing the online quizzes, observing for your sky diary, and working on the other assessments.

We expect you to follow up each lecture with your own reading and thinking. Lectures should be considered as the start rather than the end point of your learning. Key readings for each block of lectures will be indicated on LEARN.

An objective of this course is to raise your curiosity. We encourage you to ask questions of and be curious about the material you encounter in class and your own reading. You may also find it helpful to discuss the course material with other students.

## LEARN | AKO (Online content)

LEARN is the University of Canterbury online learning environment: <http://learn.canterbury.ac.nz>

All courses in which you are enrolled at UC should be visible on the left-hand panel when you log-in to LEARN. Click the ASTR109 link to get to the homepage for this course. As they become available, you will find details of assessment tasks (including online quizzes), copies of lecture slides, links to readings and your gradebook (a record of your grades and learning progress) on LEARN.

The **best place to ask questions is on LEARN**. More than one person often has the same

question, and we all learn better together! Both lecturers and tutors see the LEARN posts, making it faster for us to answer you.

## Assessment | Aromatawai

Your learning for ASTR109 will be evaluated through a series of assessments: a sky diary, homework, online quizzes, a science communication activity, and a final exam. It is important to complete all assessment tasks. Further details will be provided throughout the course on LEARN and in the lectures/tutorials.

### Sky diary

You will keep a diary of the sky over most of this course, with entries at least twice a week, each week. The diary is worth 30% of your final grade.

### Pre-tutorial quiz

Short homework that involves logical thinking and problem solving, with some questions requiring longer written responses, will be given out after each week's lectures and due by the time you start your tutorial session. Each is worth 1%, for a total of 10% of your grade.

### Online quizzes | Patapatai ā-ipurangi

Quizzes have questions of the same kind of style as the homework, to reinforce your understanding. You will take five online quizzes, two in the first term and three in the second term; your four highest scoring quizzes will count for 20% of your final grade. Each of these quizzes will be available online for 7 days and you may choose when to take the quiz. You may attempt each quiz once and your score will count towards your final grade. Once you start the quiz you will be given one hour in which to complete your answers.

### Public science communication creative endeavour

You will create a pdf poster, 3-4 min video, or other media, to communicate an aspect of one of the topics discussed in the first term to a general audience. Creativity in selecting alternative forms of communication is welcomed! This will be due in the first week back after the term break, and will count for 15% of your final grade.

### Final Exam | Pukapuka whakamātautau

The exam will be online on the LEARN site, with a format familiar from the homework and quizzes, and covers content from the entire semester. The quiz will be open for 24 hours in the end of year examination period. Once you start the quiz you will have two hours in which to complete your answers. The exam is worth 25% of your final grade.

### Marks and grades | Taumata ako

The following numbers should be considered as a guide to the expected grades under normal circumstances. The School reserves the right to adjust mark/grade conversions, if necessary.

Please note that for all invigilated assessments (tests and exams) worth 33% and above, failure to obtain a mark of at least 40% will result in a final grade no higher than an R at 100 and 200 level, and a C- at 300 level.

<b>Grade:</b>	<b>A+</b>	<b>A</b>	<b>A-</b>	<b>B+</b>	<b>B</b>	<b>B-</b>	<b>C+</b>	<b>C</b>	<b>C-</b>	<b>D</b>	<b>E</b>
<b>Minimum mark %:</b>	<b>90</b>	<b>85</b>	<b>80</b>	<b>75</b>	<b>70</b>	<b>65</b>	<b>60</b>	<b>55</b>	<b>50</b>	<b>40</b>	<b>0</b>

**For all details of further Physics and Astronomy information (late work, special consideration, academic integrity, and other related topics):**

Please consult the document General Information for Physics and Astronomy Students on the Physics and Astronomy Web Page: <https://apps.canterbury.ac.nz/1/science/phys-chem/PHYS%20-%20Course%20Outlines/General.PDF>

As covered in the guidelines, plagiarism and selling of answers is not permitted.

Have fun! We're delighted to have you here in ASTR109.

## **Support services | Tautoko tangata**

### **Subject librarians | Kaitiaki Kaupapa - Kaitakawaenga**

Need help with assignments? [Subject Librarians](#) are here to help, especially with finding quality sources of information and referencing them. Ask for your Subject Librarian at the info desk or book an appointment online. There are three libraries at UC available to you. The Library also runs helpful workshops throughout the year, has a handy online chat service called AskLive and a range of other useful services. <https://www.canterbury.ac.nz/library/>

### **Academic Skills Centre | Pokapū Pūkenga Ako**

If you want good grades, we HIGHLY recommend you use the UC Academic Skills Centre (free to all UC students), including their online resources, short courses and individual (50-minute) or drop-in (5-minute) appointments: <http://www.lps.canterbury.ac.nz/lsc/>

### **Students with Disabilities | Te Whaikaha**

Students with disabilities should speak with someone at Disability Resource Service. Their office is room 214, Level 2, Puaka-James Hight Building, phone: +64 3 369 3334 or ext. 93334; email: [disabilities@canterbury.ac.nz](mailto:disabilities@canterbury.ac.nz).

### **Student Care | Ratonga Atawhai Ākonga**

Falling behind in your studies? Having problems with your landlord? Feeling like it's all a bit of a struggle? Student Care Advisors are your support team. Their service is free to access and available to all students at the University of Canterbury, including off campus (distance) students. They can talk with you about your situation, help you to figure out your options, and work out the best way forward. Visit <http://www.canterbury.ac.nz/support/needtotalk/> for further information and contact details.

### **UC Health Centre | Te Whare Hauora**

The UC Health Centre offers a range of medical and counselling services to make sure you can keep healthy and well while you study at UC. Find more information at: <http://www.canterbury.ac.nz/healthcentre/>, call 03 039 444, or call in to the Health Centre which is located at the rear of the UCSA carpark beside The Foundry bar.

### **Academic Advice | Tohutohu akoranga**

Not sure which papers to take next semester? Considering changing your major? Get in touch with College of Science undergraduate student advisor Bengu Korkut for any questions regarding academic planning. (Okeover House, email: [bengu.korkutyalcin@canterbury.ac.nz](mailto:bengu.korkutyalcin@canterbury.ac.nz)).

You can find out about the wide range of other support services offered at UC at: <http://www.canterbury.ac.nz/support/get-support/>.