UOW COLLEGE AUSTRALIA

PATHWAYS TO UNIVERSITY OF WOLLONGONG

Diploma of Science

Course Code: 3194 Diploma of Science Standard Session (Domestic)

Year of issue: 2026

Course Outline

UOWC-AQ-REF-2026-V1

Contents

Diploma of Science Course Outline

1 Course Description

The UOW College Australia (UOWCA) Diploma of Science provides students with access to the university experience within a supported context. In the introductory phase of this course, students will complete subjects specifically designed to assist them to develop approaches to effective learning in the higher education context. In Sessions 2 and 3 students are provided with a range of learning experiences and opportunities in science discipline-based subjects which provide students with the experience of working in University of Wollongong (UOW) science laboratories. Students are provided with dedicated support tutorials to prepare them for success in their university studies.

The Diploma of Science provides pathways for entry into the second year of a Bachelor of Science or Bachelor of Marine Science degree at the University of Wollongong (UOW), with specified credit of up to 48 credit points for subjects in the compulsory core components of these degrees. Students can enter either degree from the Diploma.

Diploma qualifications are located at level 5 of the Australian Qualifications Framework. The purpose of the Diploma qualification type is to qualify individuals who apply integrated technical and theoretical concepts in a broad range of contexts to undertake advanced skilled or paraprofessional work and as a pathway for further learning.

2 Graduate Qualities

The Diploma of Science course is designed to assist students in developing the UOW College Australia Graduate Qualities. It helps students become:

1. **Informed:** Have a basic knowledge of an area of study and understand its issues. Know how to apply this knowledge.

2. **Independent Learners:** Begin to engage with new ideas and ways of thinking and critically analyse issues. Seek to extend knowledge through ongoing enquiry and active learning. Find and evaluate information, using a variety of sources and technologies. Acknowledge the work and ideas of others.

3. **Problem Solvers:** Demonstrate introductory levels of creative, logical and critical thinking skills to respond effectively to problems. Be flexible and thorough.

4. **Effective Communicators**: Articulate and convey ideas effectively using a range of media. Work collaboratively and engage with people in different settings.

5. **Responsible:** Understand how decisions can affect others and make ethically informed choices. Appreciate and respect diversity and act with integrity. Take responsibility for one's own learning and completion of assessment tasks.

3 Course Learning Outcomes

Graduates will be able to:

1. Apply critical thinking, analysing, problem-solving and planning skills appropriate to the study of science.
2. Demonstrate academic literacy and communication skills-to convey knowledge and collaborate with others.
3. Utilise information and communication technologies (ICT), including access to and use of data and library resources.
4. Demonstrate an understanding of the body of knowledge underpinning the study of selected core disciplines of science.
5. Articulate the role, relevance and ethical implications of science in society.
6. Recognise and address ongoing learning needs.

4 Course Learning Outcomes Mapped to Graduate Qualities

The table below shows how the graduate qualities are integrated into the course learning outcomes.

Course Learning Outcomes/Graduate Qualities	1. Informed	2. Independent Learners	3. Problem Solvers	4. Effective Communicators	5. Responsible
1. Apply critical thinking, analysing, problem-solving and planning skills appropriate to the study of science.		✓	✓		
2. Demonstrate academic literacy and communication skills-to convey knowledge and collaborate with others.	✓	✓		✓	
3. Utilise information and communication technologies (ICT), including access to and use of data and library resources.		✓			
4. Demonstrate an understanding of the body of knowledge underpinning the study of selected core disciplines of science.	✓				
5. Articulate the role, relevance and ethical implications of science in society.	✓			✓	✓
6. Recognise and address ongoing learning needs.		✓	✓		✓

5 Course Structure and Subjects

3194: DIPLOMA OF SCIENCE			
SESSION 1*			
Subject Code	**Subject Name**	**Credit Points**	**Contact Hours a Week**
BLOCK A			
PREP030	Launch	2	2
PREP031	Language for Learning	6	8
PREP041	Mathematics for the Sciences A	4	8
Total Block A		**12**	**18**
BLOCK B			
PREP032	Scientific Thinking	6	8
PREP042	Mathematics for the Sciences B	4	8
Total Block B		**10**	**16**
SESSION 2			
Subject Code	**Subject Name *(UOW Equivalent Subject Code)***	**Credit Points**	**Contact Hours a Week**
DSCI105	Planet Earth *(EESC101)*	6	6
DSCI106#	Foundation Chemistry: Properties of Matter *(CHEM104)*	6	6
DSCI108	Evolution, Biodiversity and Environment *(BIOL104)*	6	5
DSCI109	Global Challenges in Science *(SCII101)*	6	4
Total Session 2		**24**	**21**
SESSION 3			
Subject Code	**Subject Name *(UOW Equivalent Subject Code)***	**Credit Points**	**Contact Hours a Week**
DSCI110#	Foundation Chemistry: Reactions and Structures *(CHEM105)*	6	6
DSCI112	Molecules, Cells and Organisms *(BIOL103)*	6	6
DSCI116	Earth's Interconnected Spheres *(EESC102)*	6	4
DSCI125	Functional Biology of Animals and Plants *(BIOL105)*	6	5
Total Session 3		**24**	**21**

* Session 1 subjects will be delivered in Block format. PREP030, PREP031 and PREP041 will be in Block A and PREP032 and PREP042 will be delivered in Block B.

#DSCI106 is a pre-requisite for DSCI110. Students must achieve a minimum result of 50% in DSCI106 before they are eligible to enrol in DSCI110.

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Expected Course Workload

As a guide, the workload for your course is determined by the number of subjects you take each session. Attempting four subjects in a standard session is considered to be a fulltime load i.e. equivalent to working fulltime (35-45hrs a week).

Each subject in this course has designated contact hours where you are required to attend classes including lectures, tutorials, workshops or other structured learning experiences.

To be successful in this course you are also required to undertake independent learning activities outside of your scheduled classes, this includes:

- Preparing for classes: homework, readings and reviewing learning materials.
- Independently researching and/or practicing knowledge and skills.
- Completing all assessment tasks and studying for examinations.
- Attending learning support services.

6 Subjects Mapped to Course Learning Outcomes

Subject/Course Learning Outcomes	1. Apply critical thinking, analysing, problem-solving and planning skills appropriate to the study of science	1. Demonstrate academic literacy and communication skills - oral, written, systems documentation – to convey knowledge and collaborate with	2. Utilise information and communication technologies (ICT), including access to and use of data and library resources.	3. Demonstrate an understanding of the body of knowledge underpinning the study of selected core disciplines of science.	4. Articulate the role, relevance and ethical implications of science in society.	5. Recognise and address ongoing learning needs.
DSCI105 Planet Earth	✓	✓		✓	✓	✓
DSCI106 Foundation Chemistry: Properties of Matter	✓	✓		✓		
DSCI108 Evolution, Biodiversity and Environment	✓	✓		✓	✓	✓
DSCI109 Global Challenges in Science	✓	✓	✓		✓	
DSCI110 Foundation Chemistry: Reactions and Structures	✓			✓		
DSCI112 Molecules, Cells and Organisms		✓		✓		
DSCI116 Earth's Interconnected Spheres	✓	✓	✓	✓	✓	✓
DSCI125 Functional Biology of Animals and Plants	✓	✓		✓		
PREP030 Launch		✓	✓			✓
PREP031 Language for Learning		✓	✓			✓

Subject/Course Learning Outcomes	1. Apply critical thinking, analysing, problem-solving and planning skills appropriate to the study of science	1. Demonstrate academic literacy and communication skills - oral, written, systems documentation – to convey knowledge and collaborate with	2. Utilise information and communication technologies (ICT), including access to and use of data and library resources.	3. Demonstrate an understanding of the body of knowledge underpinning the study of selected core disciplines of science.	4. Articulate the role, relevance and ethical implications of science in society.	5. Recognise and address ongoing learning needs.
PREP032 Scientific Thinking	✓	✓	✓		✓	✓
PREP041 Mathematics for the Sciences A	✓	✓				✓
PREP042Mathematics for the Sciences B	✓	✓				✓

7 Progression Guidelines

Course Progression Requirements

1. PREP041 Mathematics for Sciences A and PREP042 Mathematics for Sciences B are considered as one subject split across two Block sessions
2. Progression from Session 1 to Session 2 requires a Satisfactory Grade for PREP030 and a minimum final subject result of 50% (a Pass Grade) for each of PREP031, PREP032 and PREP041/PREP042.
3. DSCI106 Foundation Chemistry: Properties of Matter is a pre-requisite for DSCI110 Foundation Chemistry: Reactions and Structures. Students are required to achieve a minimum result of 50% in DSCI106 to enrol in DSCI110
4. To qualify for the award of the Diploma of Science, students must achieve a minimum result of 50% for each subject.
5. Students who meet the requirements for the award of the Diploma can progress to the second year of the Bachelor of Science or Bachelor of Marine Science at UOW with up to 48 points of UOW credit transfer.

   Students who are eligible to progress to UOW may apply to the Faculty of Science, Medicine and Health for consideration for entry to a specialised Science degree. Any credit transfer must be applied for within the faculty.

   Please refer to the Credit transfer arrangements page for more detailed information - https://www.uowcollege.edu.au/courses-pathways/admissions-information/credit-transfer-arrangements/
6. There is no UOW credit transfer for the following subjects: PREP030; PREP031; PREP032; PREP041 /PREP042.
7. Students may exit the Diploma course early and enter the relevant degree ('Accelerated Exit') if they meet conditions. Please refer to the UOW Admissions Procedures (Coursework) document for more detailed information.

   Note: Where a student has opted for Accelerated Exit – Incomplete Award, they will not be eligible for the Diploma award until they successfully complete the outstanding equivalent subjects in their UOW degree. Once a student has completed the equivalent subjects at UOW, the student can submit an Application for Credit for Prior Learning directly to UOW College for the Diploma qualification to be awarded.

8 Entry Requirements / Admissions Guidelines

Entry requirements for this course can be viewed online at:

https://coursefinder.uow.edu.au/information/index.html?course=diploma-science-uow-college

9 Assessment

Students are required to complete a number and variety of assessment tasks related to their streams of study.

Each subject has a subject outline that is issued to students. Subject outlines contain an overview of subject objectives, an assessment schedule, a list of learning resources and a weekly topic outline. Subject outlines also contain an explanation of assessment components.

All assessment tasks with a weighting of 10% or greater have marking criteria and an answer/marking guide.

All aspects of assessment are governed by Policy, Procedures and Guidelines, which can be viewed at: https://www.uowcollege.edu.au/support-resources/policies-procedures/

10 Quality Assurance

The College applies formal quality assurance processes to its design of courses, subjects and their assessments. These processes include:

- Clear subject outlines that align with the objectives of the course and support consistent delivery of content;
- Mandatory inclusion of clear and appropriate marking criteria in assessment tasks;
- Moderation of marking of student assessment tasks, ensuring that the assessment criteria have been applied consistently and there is equity across individual markers;
- A regular schedule of audits on student assessment tasks using randomly-selected samples of student work; and
- The use of feedback from students and teachers to inform continuous improvement of curriculum, delivery, policies and procedures.

11 Subject Descriptions

DSCI105 Planet Earth

How does the solid planet Earth function and of what does it consist? This subject provides an introduction to Earth science by considering topics such as geological time, the solar system, the interior of Earth, tectonics and structural geology, crystals, minerals, volcanoes and volcanic processes, and characteristics of igneous, sedimentary and metamorphic rocks.

DSCI106 Foundation Chemistry: Properties of Matter

This subject provides an introduction to core chemistry knowledge and skills as required for studies of biology and applied sciences. The subject develops the use of chemistry language, symbols and other representations, and the quantitative (numeracy, mathematical) skills required. The concepts include matter, introduction to atoms, ions and molecules, chemical nomenclature and quantities in chemistry; molecular scale concepts, electrons and the chemical bond, molecular shape, intermolecular forces; matter macroscale, the nature and properties of materials resulting from their molecular level character, with specific biological / polymeric / new materials-based examples. Concepts about changing matter follow, considering the energetics and rate of chemical change. The topics are presented in contemporary contexts exploring chemical phenomena and specifically designed for students without senior high school chemistry.

DSCI108 Evolution, Biodiversity and Environment

This subject aims to provide students with a comprehensive introduction to whole organism biology, from species to populations, communities and ecosystems. Specifically, the subject explores the identity, anatomical and life-history characteristics of the main groups of organisms, their patterns of diversity across Earth, the processes of evolution and speciation, ecology and conservation biology. In addition, through a series of practical and tutorial classes, the subject equips students with an understanding of the scientific process, ways in which experiments are designed and implemented, the processes of data collection, analysis and hypothesis testing, and scientific writing.

DSCI109 Global Challenges in Science

Every major challenge of modern life, such as ensuring energy, food, health and water security in a sustainable world has complex science and technology underpinnings that span beyond geographical barriers whilst being dependent upon often complex political and financial structures. Students in Global Challenges in Science will work within interdisciplinary teams to investigate projects related to such modern challenges. Student learning in this subject is facilitated through engaging online material, in combination with face-to-face lectures and workshop classes.

This subject will bring all students from the SMAH Bachelor of Science program together in one subject. This subject will be utilised to provide course advice and

guidance to help students map their program of study and navigate their transition to university. The projects undertaken in this subject will foster a sense of community amongst science students and have students explore different aspects of science and how science contributes to society.

You will explore the method of science and how science informs debate and decision-making on public issues whilst also understanding the responsibilities of the public in having scientific understanding and how you can contribute to a better future using your scientific knowledge.

DSCI110 Foundation Chemistry: Reactions and Structures

This subject follows on from essential chemical principles studied in DSCI106/CHEM104 and provides a suite of compound groups and reaction types across inorganic and organic chemistry, with application in contemporary contexts suited to the study of Biology and the applied sciences. The subject begins by applying the equilibrium concept in the context of dissolution / precipitation, acid base and redox reactions. The chemistry of transition metal complexes, especially as applied in biochemical and catalytic systems, is studied. The chemistry of non-metals, P, N, and S is studied, highlighting biological environmental and industrial contexts. Organic chemistry is introduced via hydrocarbon structures and then functional groups and classes of reactions pertinent to biological systems are studied. The application of structure concepts and reaction types is used to understand the properties of natural and synthetic polymers. The topics are presented in contemporary contexts, exploring structures and reactions. This subject is specifically designed for students without senior high school chemistry.

DSCI112 Molecules, Cells and Organisms

This subject involves the study of molecules, cell and organisms fundamental to biology. It provides an introduction to the topic areas of cell biology, biochemistry, biotechnology, genetics, microbiology and immunology. During this subject, students will look closely at the links between structure and function in cells and important biological molecules, while investigating cellular division and mechanisms to control the cell cycle and prevent cancer. Students will hear about techniques in genetic engineering and breakthroughs in biotechnology. They will learn about different microorganisms and their role in human, animal and/or plant health and explore the physiology of the immune system. Through engagement in group research projects, students will develop skills in effective research and communication, teamwork, self-reflection and peer assessment while developing digital literacy skills in presenting their research through PowerPoint (or similar tools) and generation of an electronic portfolio.

DSCI116 Earth's Interconnected Spheres

This subject examines the processes that occur within, and the interactions and feedbacks that occur between the various components – or spheres – of the Earth system. There is a focus on Earth's landforms as the product of tectonics, climate, and erosion; topics also include: the composition and behaviour of the atmosphere; global weather and climatic patterns; the character of the oceans and their interaction with the landmasses; and the role of humans in shaping the Earth system. Laboratory classes focus on developing and applying statistical data analysis, and field surveying and mapping skills to a variety of geographical contexts.

DSCI125 Functional Biology of Animals and Plants

Students will investigate the form and function of living things with a comparative approach that recognises evolutionary origins and how this affects the way they overcome challenges to their day-to-day existence. Body plans of plants and animals. How plants and animals obtain the energy and nutrients they need for growth. Reproduction in plants and animals. Sensory systems in plants and animals. Parasitic plants & animals. How do plants and animals interact and respond to their environment? Animal behaviour. Please note that this subject involves animal dissections. While direct participation is not mandatory, all students will be examined on the material.

PREP030 Launch

This subject explores the common expectations and experiences of university study in order to assist students to transition effectively to a higher education learning environment. Students will be introduced to the technological platforms and skills required to effectively complete their studies, the importance of academic integrity, available support services and resources, and strategies to develop capabilities of independent learning. Students will be engaged in presentations and activities related to these aspects of academic life to cultivate the development of their student identity in the context of a learning community.

PREP031 Language for Learning

This subject provides students with opportunities to develop their knowledge of, and competence and confidence in the use of text-based language in preparation for future studies. Students will be introduced to a variety text types and genres commonly used in tertiary study, with a focus on engaging with, and critically analysing, sources of information in terms of purpose for writing, the style employed and writing techniques evident in the text. The focus is on developing language skills and improving students' capability to both evaluate the content of a variety of texts, and to employ that knowledge in their own written and spoken tasks.

PREP032 Scientific Thinking

This subject provides students with a functional understanding of the basic tenets of science, the underlying cognitive skills that allow us to solve complex problems, and strategies to investigate and interpret the world around us. Students will be challenged with problem-solving activities relevant to the sciences to develop a range of key cognitive capacities, including critical, logical and creative thinking, and an understanding of concepts such as objectivity, variables, theory, and Occam's razor. The focus is on developing skills required to design, conduct, analyse and present the findings of primary research related to a United Nations Sustainable Development Goal (UN SDG). Students will also develop their global citizenship through evaluating the significance of this issue, and its relevance to their future study and career pathways.

PREP041 Mathematics for the Sciences A

PREP041 – Mathematics for the Sciences A, and PREP042 – Mathematics for the Sciences B, together provide an introductory study of mathematics for students entering a selection of Science, Technology and Education degrees at an undergraduate level. The focus of these subjects is on developing mathematics skills and improving competencies and confidence in the language and techniques of mathematics. The general topic areas covered in PREP041 are arithmetic, algebra, and equations. Where possible, science and technology applications will be used to demonstrate the relevance of these skills.

PREP042 Mathematics for the Sciences B

PREP041 – Mathematics for the Sciences A, and PREP042– Mathematics for the Sciences B, together provide an introductory study of mathematics for students entering a selection of Science, Technology and Education degrees at an undergraduate level. The focus of these subjects is on developing mathematics skills and improving competencies and confidence in the language and techniques of mathematics. The general topic areas covered in PREP042 are functions, trigonometry, limits, and calculus. Where possible, science and technology applications will be used to demonstrate the relevance of these skills.

12 Version Control Table

Version Control	Date Effective	Approved By	Amendment
1.0	09/09/2021	UOWCA Academic Board	Initial release – 2022 delivery
2023_1.0	01/12/2022	UOWCA Education Committee	Minor Course variation – amend subject schedule New issue 2023
2023_2.0	22/08/2023	Academic Program Manager	Minor update to clarify course progression information.
2024_1.0	01/12/2023	No Change	New release 2024
2024_1.1	25/06/2024	Program Manager Academic	Update to the URL links
2025_1.0	03/01/2025	Program Manager Academic	New release 2025
2025_1.1	13/02/2025	UOWCA Education Committee | 45th Meeting	Update to the Course Description and Learning Outcomes
2025_2.0	07/04/2025	Program Manager Academic	Minor update to course progression requirements
2025_3	12/08/2026	Program Manager Academic	Update to Accelerated Exit information
2026_1	23/02/2026	Program Manager Academic	Administrative Update includes Block delivery structure for session 1