

# **Bachelor of Science (Honours) (Deans Scholars) (Ecology & Conservation Biology) | 2020**

Conservation Biology is the study of the Earth's biodiversity with the aim of being able to manage and protect species and ecosystems. At UOW, this degree provides the knowledge and skills to understand and develop strategies to minimise the impact of humans on their environment. You will focus on biology, developing skills in evolutionary physiology, conservation biology and ecology of both marine and terrestrial ecosystems.

Field and laboratory studies are built into appropriate subjects at all levels and take advantage of state-of-the-art laboratory facilities, as well as the superb local marine, freshwater and terrestrial environments on the South Coast and inland regions.

Mid-year entry for the Bachelor of Science (Honours) (Dean's Scholar) (Ecology and Conservation Biology) must be in consultation with the Head of the School. The minimum duration to complete the degree, if the program is commenced mid-year, is 4½ years full-time or part-time equivalent.

## **Major Learning Outcomes:**

On successful completion of this course students will be able to:

1. Demonstrate broad and coherent knowledge in the principles and concepts associated with the ecology and conservation of all biological system
2. Demonstrate skills in analysing, interpreting and evaluating data, methodologies and other information.
3. Apply critical thinking and independent problem solving in experimental design and data analysis
4. Apply knowledge and skills of ecology and conservation biology to solving current problems in either a professional context or in research
5. Communicate knowledge and ideas clearly and coherently to others in both written and spoken form
6. Interpret the role, relevance and ethical implications of science in society.
7. Independently plan, execute and communicate findings of a project/piece of research in relation to an aspect of ecology and conservation Biology

## Course structure

To qualify for award of the degree, the Bachelor of Science (Hons) (DS) (Ecology & Conservation Biology), a candidate must successfully complete at least 192 credit points, as outlined in the table below:

### Year 1:

When selecting 100-level subjects students should note the pre-requisites required for the 200-level subjects they wish to take.

| Subject Code   | Subject name   | Credit points | Session (s) |
|--|--|---------------|-------------|
| <b>AUTUMN Year 1</b>   |  |               |             |
| SCII101  | Global Challenges in Science                                 | 6             | Autumn      |
| BIOL104  | Evolution, Biodiversity and Environment                      | 6             | Autumn      |
| BIOL105  | Functional Biology of Animals and Plants                     | 6             | Autumn      |
| <b>Select One of the following two subjects:</b>   |  |               |             |
| Note: Students who have achieved a mark of 65% or more in NSW HSC Chemistry (or equivalent) must select CHEM101 in Autumn and CHEM102 in Spring. All other students must select CHEM104 in Autumn and CHEM105 in Spring. |  |               |             |
| CHEM101  | Chemistry 1A: Introductory Physical & General Chemistry      | 6             | Autumn      |
| CHEM104  | Foundation Chemistry: Properties of Matter                   | 6             | Autumn      |
| <b>SPRING Year 1</b>   |  |               |             |
| BIOL103  | Molecules, Cells and Organisms                               | 6             | Spring      |
| <b>Select one of the following two subjects:</b>   |  |               |             |
| CHEM102  | Chemistry 1B: Structure and Reactivity of Molecules for Life | 6             | Spring      |
| CHEM105  | Foundation Chemistry: Reactions and Structures               | 6             | Spring      |
| <b>Plus 12 Credit Points of elective subjects from the General Elective Schedule, Science Schedule or from the list of suggested subjects below:</b>   |  |               |             |
| EESC105  | Introductory Geospatial Analysis                             | 6             | Spring      |
| SCIE103  | Climate Change   | 6             | Spring      |



| Subject Code | Subject name                   | Credit points | Session (s) |
|--------------|--------------------------------|---------------|-------------|
| EESC102      | Earth's Interconnected Spheres | 6             | Spring      |

## Year 2:

When selecting 200-level subjects students should note the pre-requisites required for the 300-level subjects they wish to take

| Subject Code  | Subject name   | Credit points | Session (s) |
|---|--|---------------|-------------|
| <b>AUTUMN Year 2</b>  |  |               |             |
| BIOL240   | Biodiversity of Marine and Freshwater Organisms          | 6             | Autumn      |
| BIOL251   | Principles of Ecology                                    | 6             | Autumn      |
| MATH151   | General Mathematics 1A*                                  | 6             | Autumn      |
| *MATH151 MUST be completed by all students who have not completed NSW HSC Mathematics or equivalent at Band 4 or higher.  |  |               |             |
| <b>Plus 6 Credit points (students required to do MATH151) OR 12 Credit Points (if not required to do MATH151) of elective subjects from the General Elective Schedule, Science Schedule or from the list of suggested subjects below:</b> |  |               |             |
| BIOL213   | Principles of Biochemistry                               | 6             | Autumn      |
| GEOS215   | Sedimentology, Stratigraphy and Paleoenvironments        | 6             | Autumn      |
| EESC203   | Biogeography and Environmental Change                    | 6             | Autumn      |
| MARE200   | Introduction to Oceanography                             | 6             | Autumn      |
| EESC207   | Advanced Geospatial Analysis                             | 6             | Autumn      |
| SCIP211   | Earth, Atmospheric and Life Sciences Research Internship | 6             | Autumn      |
| CRLP200   | Career Ready Learning & Practice                         | 6             | Autumn      |
| <b>Students wishing to focus on Ecology and Conservation Genetics should select:</b>  |  |               |             |
| BIOL213   | Principles of Biochemistry                               | 6             | Autumn      |
| <b>SPRING Year 2</b>  |  |               |             |
| BIOL241   | Biodiversity of Terrestrial Organisms                    | 6             | Spring      |



| Subject Code  | Subject name   | Credit points | Session (s) |
|---|--|---------------|-------------|
| BIOL252   | Evolution and Behaviour                                  | 6             | Spring      |
| STAT252   | Statistics for the Natural Sciences                      | 6             | Spring      |
| <b>Plus 6 credit points of elective subjects from the General Elective Schedule, Science Schedule or from the list of suggested subjects below:</b> |  |               |             |
| BIOL215   | Introductory Genetics                                    | 6             | Spring      |
| EESC202   | Shaping Earth's Surface                                  | 6             | Spring      |
| EESC207   | Advanced Geospatial Analysis                             | 6             | Spring      |
| SCIP211   | Earth, Atmospheric and Life Sciences Research Internship | 6             | Spring      |
| CRLP200   | Career Ready Learning & Practice                         | 6             | Spring      |
| <b>Students wishing to focus on Ecology and Conservation Genetics should select:</b>  |  |               |             |
| BIOL215   | Introductory Genetics                                    | 6             | Spring      |

### Year 3:

| Subject Code   | Subject name  | Credit points | Session (s)    |
|--|---|---------------|----------------|
| <b>AUTUMN Year 3</b>   |   |               |                |
| BIOL362  | Ecophysiology   | 6             | Autumn         |
| BIOL361  | Conservation Biology                                  | 6             | Autumn         |
| <b>Plus 12 credit points of elective subjects from the General Elective Schedule, Science Schedule or from the list of suggested subjects below:</b> |   |               |                |
| SCIP310  | Advanced Earth, Atmospheric and Life Sciences Project | 6             | Autumn, Spring |
| BIOL343  | Techniques in Biotechnology and Medical Research      | 6             | Autumn         |
| GEOS309  | Igneous-Metamorphic Geology and Processes             | 6             | Autumn         |
| STAT335  | Sample Surveys and Experimental Design                | 6             | Autumn         |
| EESC321  | Plate Tectonics, Macro-topography and Earth History   | 6             | Autumn         |



| Subject Code   | Subject name  | Credit points | Session (s)    |
|--|---|---------------|----------------|
| EESC323  | Fluvial Geomorphology and Sedimentology               | 6             | Autumn         |
| <b>SPRING Year 3</b>   |   |               |                |
| BIOL365  | Marine and Terrestrial Ecology                        | 6             | Spring         |
| <b>Select one of the following two subjects:</b>   |   |               |                |
| SCII302  | Science Interdisciplinary Project                     | 6             | Spring         |
| BIOL363  | Professional Skills in Ecology                        | 6             | Spring         |
| <b>Plus 12 credit points of elective subjects from the General Elective Schedule, Science Schedule or from the list of suggested subjects below:</b> |   |               |                |
| SCIP310  | Advanced Earth, Atmospheric and Life Sciences Project | 6             | Autumn, Spring |
| BIOL363  | Professional Skills in Ecology                        | 6             | Spring         |
| MARE360  | Fisheries and Aquaculture                             | 6             | Spring         |
| EESC331  | Changing Global Environments                          | 6             | Spring         |
| CHEM325  | Bioinformatics: Genome, Genes and Biomolecules        | 6             | Spring         |
| EESC322  | Coastal Environments: Process and Management          | 6             | Spring         |

## Year 4

| Subject Code         | Subject name                | Credit points | Session (s) |
|----------------------|-----------------------------|---------------|-------------|
| <b>ANNUAL Year 4</b> |                             |               |             |
| BIOL401              | Biology Honours             | 48            | SMAH Annual |
| BIOL407              | Biology Honours (Part-time) | 24            | SMAH Annual |

NOTE: Students may be required to contribute to food, transport and accommodation costs associated with the provision of field trips that form part of the course of study.

## Minors

Students are encouraged to consider taking a *Minor study* as part of the BSc program. Inclusion of a *minor* in support of your *major* area of study allows you to broaden your view, knowledge and expertise while specialising in areas of interest.

Details on Minors can be found at <https://documents.uow.edu.au/handbook/minors/H20008091.html>

Options include (but not limited too): Earth and Environmental Science, Geoscience, Physical Geography, Archaeology, Biochemistry, Biodiversity, Ecology, Molecular Biology, Geology and Marine Biology.

A selection of research internships or project-based subjects may also be available to high-achieving students wishing to complement their coursework with research projects. Entry into these subjects requires approval from the Head of School.

## Entry Requirements and Credit Arrangements

Information on academic and English language requirements, as well as eligibility for credit for prior learning, is available from the Course Finder.

## Other Information:

For further information please email: [smah-students@uow.edu.au](mailto:smah-students@uow.edu.au)

