

Fenner School of Environment & Society
College of Science

Undergraduate degree planner 2021



Australian
National
University



Overview

OK, you're interested in studying environment and sustainability.

What do you do next?

With so many options available, it can be really hard to choose your degree, courses and majors/minors. Start by taking some of our first year courses. After completing any of these you'll have a much better idea of which Major and Minors to take; and that will help you choose your other courses.

Year 1 Stepping through your degree

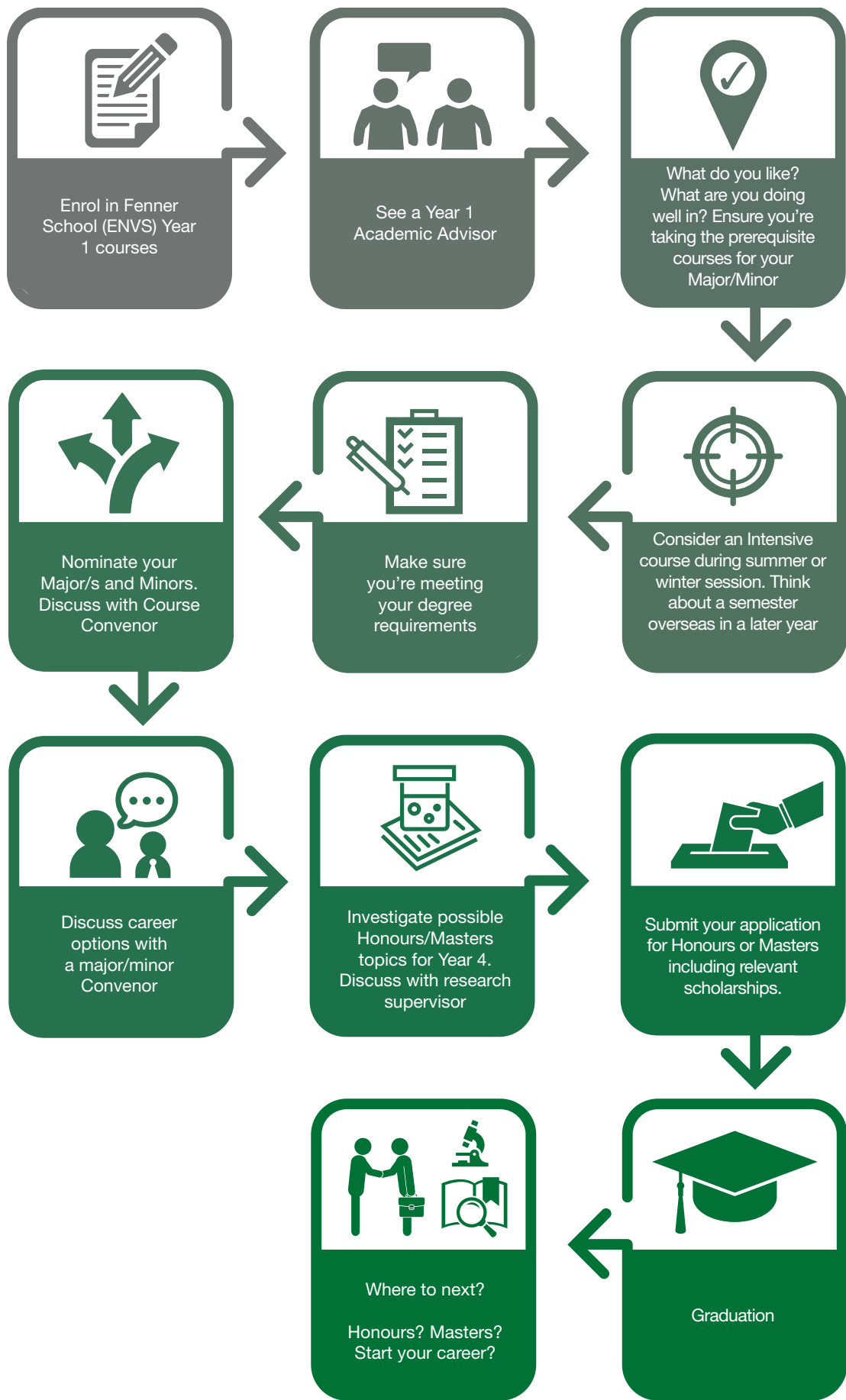
Semester 1	Choose up to five Fenner School 1st year courses to take across both semesters. Check that you're taking prerequisite courses for 2nd year.
Semester 2	Think about majors, minors and prerequisite courses. See a Fenner School Academic Advisor for advice. Think about preparing for a semester overseas with a partner university in 3rd year.

Year 2

Semester 1	Consider an intensive course during summer or winter session. Which study areas are you enjoying most?
Semester 2	Nominate majors/minors-discuss with Convenors. Ensure you're meeting your degree requirements. Discuss career options with your Year 2 Course Convenors.

Year 3

Semester 1	Check your degree requirements again! Investigate possible Honours or Masters topics for Year 4. Discuss ideas with potential research supervisors.
Semester 2	Submit your Honours (and scholarship) or Masters application.



Which degree is best for me?

Bachelor of Environment & Sustainability

This contemporary cross-disciplinary degree prepares you to address the complex challenges of sustainability by giving you a broad environmental education with a sound basis in theory and methods and a focus on hands-on applications and researched, field-based learning. You will learn to link perspectives from the natural and social sciences with their applications in your chosen major. Focus on areas of particular interest in our minors, which range from Biodiversity to Soil and Land Management, and Climate Change to Sustainable Development or Environmental Policy.

If you care about meeting the challenges and opportunities facing us this century, this degree will prepare you for a range of professional careers in environmental science, sustainable natural resource management or environmental policy.

programsandcourses.anu.edu.au/program/BENSU

Bachelor of Science

Whether your interests are broad or unique, the Bachelor of Science allows you to follow or find your passion. Our flexible program can be tailored to focus on Environment and Sustainability by including a major/minor combination in Environmental Science, Resource and Environmental Management, Sustainability Studies or Environmental Policy and their applications. You can also take selected environment and sustainability courses that allow you to complement and apply your knowledge in biology, chemistry, earth science, maths, physics or science communication.

When you study at Australia's most reputable science university you will learn from leading scientists, and will also benefit from studying in Canberra, where you have unparalleled access to Federal parliament, CSIRO, government departments, and many national and international science organisations.

programsandcourses.anu.edu.au/program/BSC

Bachelor of Arts

The Bachelor of Arts is the most diverse, flexible, and popular degree at The Australian National University. If your interest lies in Environment and Sustainability you can major in Environmental Studies or Geography in your BA degree, and choose a second major or a minor in fields such as Anthropology, Australian Indigenous Studies, Development Studies, Environmental Policy, Human Ecology, International Relations, Sociology and Sustainable Development.

Regardless of your choices, your Arts degree will provide you with core skills in critical analysis and in written and oral communication, while developing your ability to help shape change and preparing you for a multifaceted career or further study.

programsandcourses.anu.edu.au/program/BARTS

Flexible Double Degrees

You can study for two undergraduate degrees at the same time and graduate with two qualifications, taking less time than studying for separate degrees. Enrol in a Flexible Double Degree and combine your interest in Environment and Sustainability with another field to satisfy your intellectual curiosity and tailor your studies to prepare for your dream career!

Combine the Bachelor of Environment and Sustainability with almost any other degree offered by the University, including Asia-Pacific Studies, Computer Science, Economics, Engineering, Finance, Information Technology, International Security Studies, Law and many more. Couple a knowledge of sustainability principles and practices and environmental science, management and policy with one of the diverse range of degrees in science, business and social sciences and give yourself the breadth, flexibility and expertise you need for a successful 21st century career.

If you care about meeting the challenges and opportunities facing us this century, this degree will prepare you for a range of professional careers in environmental science, sustainable natural resource management or environmental policy.

anu.edu.au/study/study-options/flexible-double-degrees

Flexible degrees & study areas

College	Science		Arts
Degree	Bachelor of Environment & Sustainability	Bachelor of Science	Bachelor of Arts

Majors

Environmental Science	●	●	
Environmental Studies			●
Geography		●	●
Quantitative Environmental Modelling	●	●	
Resource & Environmental Management	●	●	
Sustainability Studies	●	●	●
Agricultural Innovation	●	●	
Biodiversity Conservation	●	●	

Minors

Biodiversity Conservation & Management	●	●	●
Climate Science & Policy	●	●	●
Environmental Policy	●	●	●
Forest Science & Policy	●	●	●
Geography	●	●	●
Human Ecology	●	●	●
Soil & Land Management	●	●	●
Sustainable Development	●	●	●
Water Science & Policy	●	●	●



First year courses

After completing any of our first year courses you'll have a much better idea which Majors and Minors to choose.

Environment & Society: Geography of Sustainability

ENVS1001 (semester 1)

An innovative, national award winning course that combines science and social sciences approaches to give you a good understanding of global and local issues around environmental sustainability. Includes a field trip to the ANU coastal campus.

The Blue Planet: An Introduction to Earth System Science

EMSC1006 (semester 1)

An integrated understanding of Earth as a system. Topics include: a history of Earth's environment; systems theory; the biophysical processes that characterise the oceans, atmosphere and land surface; the story of life on land and in the oceans; together with an introduction to the global life support systems.

Introduction to Environmental & Social Research

ENVS1003 (semester 1)

Explore ways in which experiments and other investigations can be made 'robust' - collect and critically examine information about wildlife, plants and humans and the environments in which they occur. Analysis involves graphical exploration, development of statistical methodology to facilitate good scientific decision making and effective presentation of results to technical and lay audiences. Lectures lead students into the theory and practice of quantitative and qualitative analysis essential in research.

Australia's Environment

ENVS1004 (semester 2)

This course is essential knowledge for anyone with a stake in Australia's future. You'll be introduced to the physical, chemical and biological processes that shaped our unique environment as a basis for understanding current environmental issues. You will learn by hands on problem solving and observing, including multiple fieldtrips to a range of environments.

Sustainable Development

ENVS1008 (semester 2)

Some analysts claim we are now living in the Asian Century. What, then, are some of the key social, political and environmental issues facing this region? How are they being discussed, researched and acted upon?

This course explores these two questions, using place-based case studies to expand student's knowledge of the region, enabling in-depth discussion of key concepts such as development, power, resource management, consumption and migration.

International Field Schools

Vietnam Field School

ENVS2017 (summer intensive)

Learn about contemporary Southeast Asia through in-country case studies in Vietnam. We emphasise integrating formal learning with first hand experience that will transform how you see environment and sustainability challenges and solutions.

The in-country work includes fieldtrips, village stay, language training as well as formal classes given by staff from ANU and from Vietnamese universities. The course focuses on understanding the complex relationships between development and environment issues, the impact of contemporary change on the environment, culture, family structure etc. and on specific groups such as villagers, migrants, farmers and women.

Island Sustainable Development: Fiji Field School

ENVS2005 (winter intensive)

Experience Pacific small island culture first hand, and understand the complex social, environmental and cultural challenges that confront Fiji as this island nation works towards sustainable development.

You will gain invaluable first-hand experience of the real-world challenges for fisheries, agriculture, energy, tourism and biodiversity in Fiji, learning from NGOs, practitioners and Australian and Fijian academics. Themes explored include climate change, natural disasters, water availability, gender, population and race relations, governance and globalization.



You are encouraged to enhance your degree by taking complementary courses relevant to your interests in Environment & Sustainability, in one or more of economics and business, statistics, data analysis and computer science, physical or life sciences, law, social sciences such as sociology or anthropology, languages or Asia-Pacific studies.

Majors & minors

After semester 1 year 1, think about your Majors and Minors.

Fenner School Majors and Minors in Environment and Sustainability can be taken as part of a variety of degree programs, including Arts, Science and a range of Flexible Double Degrees. Discuss your options and choices with a Fenner School Academic Advisor or degree program convenor.

Majors

Environmental Science

(only in Science)

The long term survival of humanity relies on the sustainable management of our natural environment; and sustainable management depends on us having a strong scientific understanding of the fundamental processes that interact to shape our planet's complex environmental system.

This major develops that understanding by providing an integration of scientific knowledge with practice in environmental and landscape sciences. It focuses on current knowledge of the science of the environment and landscape processes, as well as a range of response strategies for sustainable management and successful environmental outcomes.

Environmental Studies

(only in Arts)

Reflecting the complexity of human-environment relationships, this major offers study areas ranging from natural ecological and Earth system processes, through environmental management, resource use and policy, to cultural ecology and the history of environmental change, perception and philosophy. Courses from many areas of the University are included, and different coherent

approaches and areas of focus are achieved by grouping these courses to meet students' particular interests. A common theme is the interactivity between humans and their environment at the individual and societal levels, as well as global, regional and local-scale change processes.

Quantitative Environmental Modelling

(only in Science)

The field of environment and sustainability provides multiple examples of complex, wicked problems important to humanity. Using quantitative modelling to help solve environmental problems requires an holistic understanding of environmental and Earth systems, supported by an appropriate level of mathematical training and skill.

You will develop the necessary mathematical understanding for environmental quantification, including the knowledge of differential equations and vector calculus that are the foundation of most dynamical environmental modelling. The experience in spatial analysis and/or measurement of environmental data that is fundamental in environmental and Earth system science is also part of this major.

Resource and Environmental Management

(only in Science)

If you are seeking a career as an environmental and natural resource manager able to meet 21st century sustainability challenges and opportunities, this major is a perfect fit. It is structured around a core of natural and social sciences courses, and links that set of knowledge and skills with a range of applications in environmental conservation and sustainable resource management.

Sustainability Studies

(Arts or Science)

High quality, integrative research plays a critical role in identifying pathways to sustainability. This major builds the fundamental understandings and skills necessary to develop research projects that effectively address complex problems of environment and sustainable development. It contains a core set of courses focused on research skills and design, with key options in areas of quantitative, qualitative and spatial approaches.

The skills developed in these courses are extended and applied in a wide range of research and policy relevant courses. This is a 'hands-on' major, with many opportunities to conduct small-scale research built into its components.

Agricultural Innovation

(only in Science)

With a major in Agricultural Innovation you will have the skills required to solve the complex challenges facing society. Globally agriculture will need to feed over nine billion people by 2050. With a changing climate and increasing competition for land, water and energy resources, the agricultural sector will need to find innovative ways to do more with less. To achieve this, interdisciplinary and co-innovation approaches to problem solving will be required.

By completing courses in agricultural systems, environmental management, sustainability, innovation, entrepreneurship, design thinking, engineering and systems design, you will have the skills to integrate and adapt knowledge from different disciplines to design novel solutions to complex problems.

Biodiversity Conservation

(only in Science)

The United Nations concluded that human actions threaten more species with extinction than ever before. Conserving biodiversity in the face of ongoing population growth, resource consumption and climate change represents a major challenge to society.

This major is intended for students that aspire to engage in evidence-based solutions to conserve biodiversity. This major offers field trips to several of The ANU's long-term research sites around Australia, interactions with practicing professionals and opportunities to obtain practical experience that will improve your employment opportunities in areas such as park and reserve management, threatened species conservation, managing pest plants and animals, environmental impact assessment, or restoration and rehabilitation of degraded lands.

Minors

Biodiversity Conservation & Management

This minor equips students to meet the challenges associated with biodiversity conservation and management and conservation biology. Relevant courses address elements from theoretical to practical, and from qualitative to quantitative, and emphasise fieldbased learning and solving topical environmental problems with a focus on biodiversity.

Climate Science & Policy

Climate change is recognised as one of the critical challenges to the sustainability of human society and the environment. Expertise in the science and policy areas relevant to understanding climate change and its impacts, and to managing natural resources and both human and natural environments under global warming, is in demand in the private sector, at all levels of Australian government, and in research organisations.

This minor combines a strong understanding of climate science with relevant knowledge in environmental policy, economics and governance, a combination that is essential to tackling the critical challenges in areas such as climate vulnerability and adaptation, water resource management and natural resource management under climate change.

Environmental Policy

Policy expertise is scarce in the rapidly expanding areas of natural resource management, urban environmental management, and sustainable development.

There are significant career opportunities in all three levels of Australian government, as well as in the expanding regional organisations, and in the private sector. In particular, graduates with substantial policy skills matched with a sound background in areas such as climate science, water science, landscape ecology and similar areas are highly sought after, in Australia and internationally.

Forest Science & Policy

The minor in Forest Science and Policy offers students a focus on aspects of forest science and policy fundamental to the conservation and sustainable management of forests. Courses in the minor emphasise field-based and experiential learning, and practical approaches to addressing forest science, management and policy challenges.

Geography

Students undertaking the minor in Geography have the opportunity to explore some of the theoretical and practical perspectives geography offers. The minor in Geography will equip students with a good grounding in aspects of the discipline and will complement a wide range of majors offered across different colleges at the ANU. The minor also allows students taking the major in Geography to tailor a program that will further develop their particular interests in the discipline.

Human Ecology

The health and wellbeing of humans depends upon the capacity of the biosphere to provide the ecosystem services that sustain them. The challenge is for societies to change so as to put themselves on pathways towards sustainable futures.

However, initiatives designed to do this must take into account the social and cultural dimensions of such change. The challenge is to couple knowledge about biospheric processes and limits with consideration of human values, judgments and motivation, health, wellbeing and dignity, and ethical dimensions of justice and fairness.

Soil & Land Management

There is an increasing need for the development of sustainable land and soil management techniques and practices in the Australian context. The emphasis in this minor is on the applications of a thorough understanding of basic physical, chemical and biological properties and ecological processes involving soils and landscapes, and the functions and outputs they provide. Students who complete this minor will have developed the knowledge necessary to understand and contribute to the design and implementation of scientifically valid soil and land management practices.

Sustainable Development

With global population expected to reach nine billion by 2050 our capacity to develop sustainably is even more urgent, though progress to date has been patchy. The minor in Sustainable Development is concerned with understanding what it means to develop sustainably, and what factors shape our prospects and policies for a transition towards sustainability. Students gain an appreciation for how international trends, whether they are economic, social or political, create both opportunities and limitations for sustainable development.

Water Science & Policy

Water is a critical issue for societies and the environment in Australia, in our region, and in many other parts of the world. This issue will continue to be one of the highest priorities for governments in the future due to the pressures exerted by population growth and climate and environmental change. The minor in Water Science and Policy provides students with the opportunity to develop knowledge central to the understanding and management of water resources, and to develop expertise and undertake research relevant to water within the biophysical sciences and from a policy perspective.

Biodiversity Conservation & Management

This minor equips students to meet the challenges associated with biodiversity conservation and management and conservation biology. Relevant courses address elements from theoretical to practical, and from qualitative to quantitative, and emphasise fieldbased learning and solving topical environmental problems with a focus on biodiversity.

Fourth year: Honours or Masters



Fiji Field School, 2019

Maximise the value of your degree

If you care about the environment and sustainability and want to take your three year undergraduate degree to the next level, enrol in Honours or a Master degree at the Fenner School.

In Honours you will undertake original research, work with a small group of like minded people, develop and apply your analytical thinking skills, mix with other researchers as equals and gain unique insights into what life in research is like. Our Master degrees open up a range of postgraduate course opportunities together with research experience.

- Fourth-year Honours or a Master degree gives you a strong competitive edge in employment.
- A good Honours grade allows you direct admission to many Masters and PhD programs, and credit towards an ANU Master degree. A research-focused Masters is also a pathway to a PhD.
- Open to students with a wide range of disciplinary backgrounds with interests in environment and sustainability research.
- Enrol to start in semester 1 or semester 2.



Future careers

ANU graduates go on to pursue interesting and impactful careers across a range of sectors, including government, private industry and not-for-profits. From small business and start-ups, to international corporations and NGOs, our graduates are shaping the future.

Fenner School graduates are employed in -

- Policy making within local, state, and federal government
- Environmental consulting across a range of organisations
- Water resources management
- Science journalism
- Green and ethical financial planning
- Fire management and planning
- Indigenous Australian land management
- Food security and agricultural consulting
- Urban planning and sustainability
- Climate modelling and adaptation
- National park management
- Energy and natural resources sectors
- Forestry
- International development and aid
- Intelligence and national security
- Education
- Tourism



Erin Kirsch, a recent graduate of the Fenner School of Environment & Society, at the ANU

Graduate spotlight: Erin Kirsch

(Bachelor of Environment & Sustainability)

Erin commenced the graduate program at the Department of Agriculture, Water, and the Environment at the start of 2021. As a graduate she has the opportunity to rotate through four different areas of the department and experience what roles and subject matter areas are of the most interest to her, building skills and expertise. Erin's first rotation gave her the opportunity to work for six months in the area of air quality policy. She's now moved to an external education programs role at the National Museum of Australia, and hopes to move into water policy in her next rotation.

Erin says the hands on experiences she had studying at the Fenner School gave her edge for pursuing her graduate career.

“The Fenner School provided many unique opportunities that I believe has set me apart from other graduates. A highlight was participating in two overseas field schools (to Vietnam and Fiji) during my degree which encouraged a hands-on cross-cultural learning approach.”

“I was also fortunate to be given the opportunity to undertake an Independent Research Project under the tutelage of Professor Jamie Pittock and Dr Matt Colloff. Thanks to their efforts and mentoring I was co-author of a paper published in the Journal of Marine and Freshwater Research. This research project was an integral component of my degree and gave me the confidence I now take into my workplace.”



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Contact us

Fenner School of Environment & Society

T 06125 2579

E fennerschool@anu.edu.au

W fennerschool.anu.edu.au



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