



UNITED NATIONS  
UNIVERSITY

**UNU-IAS**

Institute for the Advanced Study  
of Sustainability

As of December 2016

# UNU-IAS Postgraduate Degrees

## Credit Requirements and Course Descriptions

### I. Credit Requirements

#### *MSc in Sustainability*

Each student is required to obtain at least 30 credits to receive a master's degree, in keeping with the instructions that will be provided during orientation.

#### *PhD in Sustainability Science*

Each student is required to obtain (i) 14 credits, in keeping with the instructions that will be provided during orientation, and (ii) to complete all degree requirements by July of his/her third year. Students must complete a dissertation on one of the several UNU-IAS research themes focusing on global change and sustainability.

**Note:** The curriculum is reviewed on a yearly basis so that the course offerings may not be identical to the ones listed below.

### II. Course Descriptions

#### **1. Broad Overview Courses (Compulsory)**

These three courses are held over a short period as part of the UNU Intensive Core (IC) Courses:

- **United Nations System and Sustainable Development**  
This course presents the institutional background and policy tasks of the UN system and provides an analytical framework to study complex issues ranging from reducing direct threats to peace to strengthening sustainable development as an indispensable condition for peace.
- **Global Change and Planetary Boundaries**  
This course will cover concepts related to global environmental changes, such as urbanization, climate change and social transformations; their implications on food, water, and health; and various solutions including climate change adaptation and mitigation measures as well as initiatives such as Future Earth and the 2030 Agenda for Sustainable Development.

- **Natural Capital and Biodiversity**

This course provides students with an understanding and a multidisciplinary perspective on natural capital, biodiversity, human well-being, and their interactions.

## **2. Elective Courses**

- **Water Resources Systems**

This course aims to provide a broad understanding of the hydrological processes, global environment changes and how they are related to sustainability of water resources systems. This course will introduce the characteristics of major components of the water cycle, rainfall, groundwater flow, unsaturated zone flow, surface runoff, river flows and the role of remote sensing, GIS, statistical techniques, and simulation models in understanding and managing water resources systems.

- **Sustainable Bioproduction and Ecosystems Management**

This course is designed to learn sustainable approaches for bioproduction and ecosystem management at different levels. The students will be familiarized with the key concepts and practical methods of ecosystem assessment and landscape ecology including the techniques of accounting various ecosystem services, and be able to choose appropriate analysis tools and management options for sustainable society in harmony with nature.

- **Global Governance of Energy, Food, and Climate Change**

This course provides an overview of the main institutions and practices involved in the process of global governance, and explores their application to three pressing issues central to the maintenance of a viable economy and environment as the world's population expands from its current 7.4 billion to more than 9 billion by 2050.

- **Law and Practice of the United Nations**

This course examines the development of the United Nations as demonstrated by interpretations of the UN Charter in practice. By looking at primary materials focused on the normative context within which the United Nations functions, students will develop an understanding of the interaction between law and practice.

- **International Development: Ideas, Experience & Prospects**

This course provides an in-depth examination of international development concepts and theories within their historical contexts, as well as current thinking and real-world evidence relating to international development.

- **Sustainable Energy Governance**

This course examines energy policy and governance with a focus on the question of how public policy could help to steer our contemporary systems of energy consumption and production into more sustainable pathways, taking into account the economic, environmental and social dimensions of sustainable development.

*A wide range of elective courses offered by partner universities are also available to UNU-IAS students through credit exchange arrangements.*

### **3. Competency Courses**

These courses are compulsory for first-year MSc and PhD students:

- **Trans-disciplinary Research Seminar**  
The purpose of this seminar is to equip students with skills that would help them in successfully conducting trans-disciplinary research. The seminar is designed to enhance the research ability of the students in further improving the design and content of their thesis. It is a collective learning environment, in which students exchange ideas and perspectives.
- **Sustainability Science Research Seminar**  
This compulsory research seminar is designed to provide students with opportunities to share their research proposals and progresses, and to receive critical feedback from fellow researchers and faculty members at UNU-IAS. This seminar will function as a common platform for UNU-IAS to share ongoing work on different projects and to promote the interaction of students and researchers beyond the boundary of their projects and thematic areas.
- **Graduate Research Seminar**  
The course aims to provide a platform, where every student will discuss his/her research topics and methodology with fellow students and faculty members to improve the research proposal based on feedback/comments/suggestions. The graduate research seminar is useful to develop and organize a workable research topic and to learn different research approaches from fellow students.

#### Other Courses

- **Remote Sensing and Geographical Information Systems (GIS)**  
Remote Sensing and GIS is a framework for studying spatial phenomena by allowing users to display, query, and analyze large, complex spatial datasets. These courses will introduce Remote Sensing and GIS and the principles of spatial data and their use in many aspects of global environmental analysis from research to management and policy-making.
- **Environmental Statistics and Research Methods (ESRM)**  
The purpose of this course is to understand basic skills for analyzing environmental and social data, and to learn practical research methods and skills that would be useful throughout a research operating cycle, including problem identification, field survey, interpretation, academic writing, and dialogue with end-users (policy-makers, private-sector actors, and citizens).
- **Science Communications**  
This competency building course is designed for graduate students (natural and social scientists) who are concerned about how best to effectively transmit their scientific knowledge and research outputs to policy-makers, journalists, and the public. It covers strategies for dealing with complex research topics and addresses challenges in communicating about topics such as climate change, urban biodiversity, and energy security. The students develop skills in creative writing, giving presentations and media interviews, and in relation to web/social media strategies.