

Official course

ENGINEERING FOR INTERNATIONAL SUSTAINABLE DEVELOPMENT

ACADEMIC YEAR 2023 - 2024

PART I SUSTAINABLE DEVELOPMENT AND INTERNATIONAL COOPERATION

1. Lecturer:

Massimo Zortea.

2. Training goals and expected learning outcomes

the Course "Engineering for International Sustainable Development" is structured in 2 semester Modules (I - Methods, II Project). Module I is divided into 2 Parts (I - Sustainable Development and International Cooperation; II - Participatory Projects and Conflicts Management).

Part I has the following **learning goals**: make the student acquire basic knowledge, skills, and competencies to apply concepts, principles, strategies, and theoretical-practical tools of sustainable development in their professional and working activities (in companies, in public administrations, in third sector bodies, in education / training institutions), with particular attention to the international dimension, as well as to cultivate job or volunteer opportunities in the vast field of sustainability and international cooperation. The course is also useful as a professional refresher and retraining path.

Consequently, as **expected learning outcomes**, the student, upon passing the related tests, will be able to:

- a) build and enhance a good critical understanding of specific international and local **contexts** in which sustainable development and in particular environmental sustainability will be applied;
- b) understand and use the basic **concepts** and **principles** related to sustainable development, especially in the environmental sphere, and the advanced ones peculiar to its application in the field of international cooperation;
- c) to know and interact with the many **subjects** involved in various capacities in the areas covered by the course;
- d) understand, analyse, and apply the **sustainable development goals** set by the system of the relevant global and local agendas, as well as the goals of other relevant global agendas (contents and methods);
- e) use and adapt to their contexts the main **tools** and **methods** for sustainable development and international cooperation, with special attention to those for environmental sustainability; in particular, apply the Environmental Mainstreaming Approach.

3. Programme:

the course is divided into 5 sections (see attached sheet).

The course "**Project and environmental mainstreaming in international cooperation**" that the lecturer holds in the second semester, within Module II of the same Course, constitutes a natural and recommendable completion of the entire Module I.

4. Procedure:

- a) lectures by the lecturer, interspersed with: b) readings or video projections, c) discussion forums in the classroom or remotely on topics set by the lecturer, d) testimonials and contributions from experts and operators in the field; e) participatory updating of a general glossary on the subject (Coopedia).

5. Language:

the course is held entirely in English.

6. Study method:

reading of lecture handouts and study/consultation materials made available by the lecturer, review of personal notes, systematic review with the teacher, targeted study of the recommended texts, individual and group-based applied work through exercises and analysis of cases during lectures.

7. Learning assessment procedures:

written and oral exam; the **written test** consists of a multiple choice questionnaire; the **oral test** consists of a dissertation on a real case study chosen from a list drawn up by the lecturers also on the proposal of the students (oral performance evaluation is based on 3 parameters: 1) analytical skills, also taking into account the higher or less data availability; 2) design responsiveness; 3) exhibition capacity).

A twofold alternative is offered for the completion of the exam:

- a) **exam-exercise** in pre-appeal, consisting of an individual written test as above followed by a group project work on the case study (each group shall present the results of their work as a frontal lesson during a final event);
- b) **individual exam**, with written test on questionnaire and oral test on real case study as above.

During the course, official intermediate tests or test simulations will be proposed, on the part of the programm previously carried out (optional).

8. Recommended texts for the preparation:

PREMISE. The subject is vast and so is the relative bibliography; only by attending the lectures students will be able to select and adequately synthesize the material.

After each lecture the lecturer makes available to the students (in electronic format):

- handout summarizing the lecture;
- study materials (useful for the preparation of the tests);
- consultation materials (useful for in-depth analysis and applications to specific contexts / issues).

For the preparation, in addition to the aforementioned handouts and materials, the following texts are recommended:

- a) Chaturvedi S. et alii (2021), *The Palgrave Handbook of Development Cooperation for Achieving the 2030 Agenda*, Palgrave Macmillan, Springer Nature Switzerland AG, Cham
- b) UNDP (2023), *Human Development Report 2023*, New York (expected release: fall 2023)
- c) UNDESA (2023), *The Sustainable Development Goals Report 2023*, New York
- d) UNDP (2018), *Human Development Indices and Indicators. 2018 Statistical Update*, New York
- e) UNEP (2019), *GEO 6 Global Environment Outlook. Summary for Policymakers*, Nairobi

Please note: to facilitate students, only texts available in open access mode are used, made available directly by the lecturer in pdf format.

The lecturer will indicate in the classroom which parts of the texts are strictly necessary for the preparation. Further, more extensive references will be offered during the course.

9. Duration:

40 hours (Part I), 80 hours (all the Course – Module I).

INTRODUCTION AND ORIENTATION

- 1) purpose of the course
- 2) structure and calendar of the course
- 3) teaching methods
- 4) recommended texts and consultation tips
- 5) participants orientation (individual adaptation)

1. CONTEXTS AND SCENARIOS

- 1.1 Defining contexts
- 1.2 Understanding contexts
- 1.3 Monitoring contexts (Global Megatrends EC - UNdata)
- 1.4 FOCUS / LABORATORY: environmental degradation and climate change

2. CONCEPTS AND PRINCIPLES

- 2.1 Basic concepts (sustainable development, human development, sustainability, sustainability engineering, environment, climate change, environmental sustainability, international development, development cooperation)
- 2.2 Advanced concepts (multidimensional poverty, new poverties, inequalities, vulnerability)
- 2.3 Principles (international environmental principles, international principles of cooperation)
- 2.4 FOCUS / LABORATORY: Eco-Poverty (7 main dimensions)

3. SUBJECTS

- 3.1 Public (international, national, local)
- 3.2 Private (international, national, local)
- 3.3 FOCUS / LABORATORY: working with the players of international cooperation

4. GOALS

- 4.1 Goal-oriented planning and action: system of global / national / local agendas
- 4.2 2030 Agenda for Sustainable Development
- 4.3 Other global agendas
- 4.4 FOCUS / LABORATORY: SDGS 6-7 and WEF (WEFE) Nexus Approach

5. TOOLS

- 5.1 Correlating goals and tools
- 5.2 Tools and methodologies for sustainable development
- 5.3 Tools and methodologies for international cooperation
- 5.4 FOCUS / LABORATORY: tools and methodologies for environmental sustainability (Environmental Mainstreaming Approach)