SDGs in practice: applying systems thinking

Professor: Silvia Ayuso
Office hours: by appointment
Course Type: Elective
Credits: 3 ECTS
Term: Third

1. COURSE PRESENTATION

Course Description

SDGs in practice builds on the compulsory courses of the Fundamentals of Sustainability module (Sustainability concepts and SDGs and Sustainability Management Systems) and provides a specialized vision of the practical implementation of the 17 United Nations Sustainable Development Goals (SDGs).

In this course students will learn about practical experiences of advancing the SDGs by different societal actors (governments and businesses) and the integrated, indivisible and interlinked nature of the SDGs. Students will be introduced to systems thinking as a useful perspective to analyze and model complex sustainability problems and learn to formulate coherent, multi-stakeholder strategies to address current sustainability problems related to food,water and health.

The course in the study plan

This **elective** course belongs to the subject of **Fundamentals of Sustainability** of the study plan. It takes place in the **third quarter**.

Learning Objectives

At the end of the course, students should:

- Acquire systems thinking skills to address the complex problems of sustainability and learn to design strategies to target their underlying causes and drivers
- Analyze and evaluate progress towards the various, sometimes conflicting,

objectives and challenges of the SDGs
- Understand the roles and responsibilities of different societal actors in the practical implementation of the SDGs
- Critically reflect on the usefulness of existing indicators used to measure the achievement of the different targets related to each of the SDGs

Related SDG

SDG 1: No Poverty
SDG 2: Zero Hunger
SDG 3: Good Health and Well-being
SDG 4: Quality Education
SDG 5: Gender Equality
SDG 6: Clean Water and Sanitation
SDG 7: Affordable and Clean Energy
SDG 8: Decent Work and Economic Growth
SDG 9: Industry, Innovation and Infrastructure
SDG 10: Reduce Inequalities
SDG 11: Sustainable Cities and Communities
SDG 12: Responsible Consumption and Production
SDG 13: Climate Action
SDG 14: Life below Water
SDG 15: Life on Land
SDG 16: Peace, Justice and Strong Institutions
SDG 17: Partnerships for the Goals

2. COURSE LEARNING PLAN

Methodology

The course comprises eight 3-hour sessions, which combine theory lecturing with students' active participation in different planned in-class activities: debates, simulation games, presentations, etc. Activities will entail both individual and group work and will require also autonomous work outside the classroom for readings and homework assignments.

Specifically, students will be given an individual exercise (analysis of the links of their master thesis problem to related topics) and will be assigned to a group project that will consist in analyzing a chosen sustainability problem (related to food,water or health).

Hours devoted by the student (according to ECTS) **75**

Evaluation criteria

Four elements concur in the final mark:

- **Final exam (40%):** the final exam is used to assess the individual level of knowledge and understanding of each student. It will include questions covering topics from all the classes. This item counts for 40% of the final mark. To pass the exam the minimum grade is 5.
- **Individual assignment (20%):** Students will have to identify some topics related to the problem they analyze in their Master Thesis and present the systemic interconnections in class.
- **Group assignment (20%):** Students will apply their knowledge to a reallife situation and will conduct an analysis of a chosen sustainability problem (related to food, water or health) in groups. They will submit a written report to the professor and present their study in class.
- **Class attendance and active participation (20%):** Class attendance is compulsory and will be considered for the final grade, as well as punctuality. Active participation in class entails meaningful participation in the proposed class activities.

Other evaluation criteria to take into consideration:

Retake

Students who fail the course during regular evaluation will be allowed ONE re-take of the examination/evaluation. Students that pass any Retake exam should get a 5 by default as a final grade for the course. If the course is again failed after the retake, students will have to register again for the course the following year.

No-show

In case of a justified no-show to an exam, the student must inform the corresponding faculty member and the director(s) of the program so that they study the possibility of rescheduling the exam (one possibility being during the “Retake” period). In the meantime, the student will get an “incomplete”, which will be replaced by the actual grade after the final exam is taken. The “incomplete” will not be reflected on the student’s Academic Transcript.

Plagiarism

Plagiarism is to use another's work and to present it as one's own without acknowledging the sources in the correct way. All essays, reports or projects handed in by a student must be original work completed by the student. By enrolling at any UPF BSM Master of Science and signing the "Honor Code," students acknowledge that they understand the schools' policy on plagiarism and certify that all course assignments will be their own work, except where indicated by correct referencing. Failing to do so may result in automatic expulsion from the program.

Calendar and contents

The schedule of topics covered in class and the related activities is the following:

Session 1

Introduction to the course

Recap SDGs and systems

SDGs in the cocoa industry

In-class activity:

Systemic analysis of sustainability problems in the cocoa industry

Session 2

Systems thinking basics

Modelling systemic behavior

In-class activity:

Refining systemic analysis of sustainability problems in the cocoa industry

Session 3

SDG implementation by governments

SDG measurement: official and non-official data

In-class activity:

Governmental interventions to tackle the problems in cocoa-producing countries

Session 4

Guest speaker from public administration

In-class activity:

Students' presentations: Systemic story of the problem analyzed in the Master Thesis

Session 5

SDG implementation by companies

Assessing SDG contribution of companies

In-class activity:

Student group presentation: Food

Session 6

Guest speaker from company

In-class activity:

Student group presentation: Water

Session 7

Synergies and trade-offs of the SDGs

Systems archetypes and possible leverage points

In-class activity:

Student group presentation: Health

Session 8

SDG simulation game: New Shores

Concluding remarks of the course

In-class activity:

Systemic analysis exercise from last year's exam

3. PROFESSOR

Silvia Ayuso is a lecturer and researcher in the field of sustainability management and the academic director of the MANGO Chair in Corporate Social Responsibility of ESCI-UPF. Prior to joining academia, she has worked as an environmental consultant and environmental management systems auditor (ISO 14001).

Silvia graduated in Environmental Engineering from Technical University of Berlin and holds a PhD in Environmental Sciences from Autonomous University of Barcelona. Her main research areas are sustainability assessment, social accounting and corporate social responsibility.

4. READING MATERIALS/ BIBLIOGRAPHY/RESOURCES

No textbook is required for this course. All the required material will be provided. Any readings, notes, handouts, dataset, or additional course material will be available through the course website.

At the end of each session, compulsory reading materials will be communicated, and a list of further reading recommendations will be provided.