BARCELONA SCHOOL OF MANAGEMENT

ESCI School of International Business

MSc in Sustainability Management

Climate change: facts, emergency, political and legal context

Professor: Ilija Sazdovski
Office hours: 24
Course Type: Compulsory
Credits: 3 ECTS
Term: First

1. COURSE PRESENTATION

Course Description

Humanity is facing an unprecedented challenge to preserve life on Earth as we know it. The effects of climate change are undeniable today even for the biggest sceptics of the last decade.

Global international treaties managed to solve many environmental threats before, however, the climate change problem remains unsolved even after 30 years of multinational negotiations guided by the United Nations.

The main aim of the course is to increase the awareness of the students of the importance of climate change as a global threat and to provide them with applicable knowledge that they can use during their professional careers.

The course provides students with the fundamentals of climate change, and key concepts about mitigation, adaptation, and vulnerability to climate change and it explains the importance of achieving a global agreement for solving the climate emergency.

The course in the study plan

This **compulsory** course belongs to the subject of the **Environmental Dimension of Sustainability** of the study plan. It takes place in the **first trimester**.

Learning Objectives

The students will understand the institutional setup of the climate negotiation in theframe of the UNFCCC, the main processes, the agreed climate emergency goals, and the international progress achieved.

They will understand the main methodological difference between climate mitigation,

adaptation, and vulnerability.

Also, the course will provide them with skills for the establishment of monitoring reporting and verification systems and basic knowledge of the emission trading scheme.

They will be introduced to the best practical examples of the three levels of climate mitigation and adaptation actions: international, national, and regional/local. As well as the importance of reducing the personal carbon footprint as a prerequisite for the success of the upper-level policy actions.

During the study visit, they will recognize the importance of long-term, mid-term and short-term climate predictions and their purpose in the development of appropriate climate services mainly used in the renewable energy sector, agriculture, and adaptation to climate change.

Related SDG

Climate change is closely linked to several Sustainable Development Goals (SDGs) as outlined in the United Nations 2030 Agenda for Sustainable Development. Here are the primary SDGs that are directly related to climate change: that will be directly or indirectly related to the course content:

- **SDG 13: Climate Action:** This goal is the most directly related to climate change. It calls for urgent action to combat climate change and its impacts. Targets under this goal include strengthening resilience and adaptive capacity to climate-related disasters, integrating climate change measures into national policies, and promoting education, awareness, and capacity-building on climate change mitigation and adaptation.
- **SDG 7: Affordable and Clean Energy:** Access to affordable and clean energy is essential for mitigating climate change. This goal aims to ensure access to affordable, reliable, sustainable, and modern energy for all. Transitioning to clean and renewable energy sources is a crucial part of reducing greenhouse gas emissions.
- **SDG 6: Clean Water and Sanitation:** Climate change can affect water availability and quality, making this goal relevant. Ensuring clean water and sanitation for all is essential for climate adaptation and reducing vulnerability to climate-related disasters.
- **SDG 11: Sustainable Cities and Communities:** Cities are significant contributors to greenhouse gas emissions and are vulnerable to climate change impacts. This goal focuses on making cities inclusive, safe, resilient, and sustainable, including through improved urban planning and management.
- **SDG 15: Life on Land:** Climate change can have profound impacts on terrestrial ecosystems. This goal aims to protect, restore, and promote sustainable use of terrestrial ecosystems and combat desertification and land degradation.
- **SDG 14: Life Below Water:** Ocean ecosystems are threatened by climate change, particularly through ocean acidification and rising sea levels. This goal focuses on conserving and sustainably using marine resources.

- **SDG 9: Industry, Innovation, and Infrastructure:** Innovation and infrastructure development play a role in addressing climate change. This goal calls for the development of sustainable and resilient infrastructure, as well as fostering innovation to support sustainable industrialization.
- **SDG 12: Responsible Consumption and Production:** Sustainable consumption and production patterns are essential for reducing greenhouse gas emissions and minimizing the environmental impact of economic activities.
- **SDG 17: Partnerships for the Goals:** Collaboration and partnerships at local, national, and global levels are critical for achieving all the SDGs, including those related to climate action.

It's important to recognize that climate change has cross-cutting impacts and is interconnected with many aspects of sustainable development. Achieving climate action (SDG 13) is central to the success of multiple other SDGs, as climate change can exacerbate poverty, inequality, and environmental degradation. Addressing climate change is integral to the broader agenda of sustainable development.

2. COURSE LEARNING PLAN

Methodology

The course comprises eight 3-hour sessions, which combine theory lecturing and student active participation in the classes. During the course, the students will be assigned to a group work exercise and different homework assignments where the practical application of learned concepts will be applied. Activities will require both individual and group work.

Also, complex issues like personal impacts on climate or the importance of climate data monitoring will be introduced through group games.

A study visit will be organized to the most powerful supercomputer in Spain used for complex climate predictions (Mare Nostrum).

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

Evaluation criteria

Three elements concur in the final mark:

- **Final exam (50%).** 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 50% of the final mark. To pass the exam the minimum grade is 5.

- **Group work and homework presentation (10% for the homework presentation and 20% for the group work).** Students will apply their knowledge to real-life situations during the development of the homework and the group work exercise. They are expected to use the topics they learned to use during the classes.

- **Class attendance and active participation (20%).** Attendance in every session is expected and recorded using an attendance sheet. It is your responsibility to comply with this measure. Class attendance is compulsory and will be considered in your final grades; punctuality is a must. Note that unexcused absences reduce your score on the "attendance and participation" element of your final grade. Two or more unexcused absences will result in an automatic score of zero and, likely, a failure mark for the course asa whole.

Attended all the sessions + actively and consistently participated in the class discussions during the entire course period	**20**
Attended all the sessions + actively and consistently participated in most of the class discussions	**15-19**
No more than one unexpected absence + often participated in the class discussions	**10-14**
No more than one unexpected absence + participated in some class discussions	**5-10**
No more than one unexpected absence + limited or no participation in class discussions	**1-5**
Otherwise	**0**

Other evaluation criteria to take into consideration:

- **Retake**

Students who fail the course during the regular evaluation will be allowed ONE re-take of the examination/evaluation. Students who 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 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 an automatic expulsion from the program.

Calendar and contents

To achieve the course objectives that will equip the students with the necessary future skills, the following work plan will be conducted:

Week 1: October 4th

Topics: Introduction of the course, historical aspects of climate change, and theoretical aspects of greenhouse gases.

Week 2: October 11th

Topics: Theoretical basis of mitigation, adaptation, and vulnerability, National determent contributions, and overall mitigation goals.

Homework for the student's group work:

"News related to COP 29 - Following the developments for the preparation of the Conference of Parties (COP) 29"

The students would have to follow the political statements, expectations, and greenwashing presented in the media and prepare a presentation. The students will present their findings before the presentation of the high-level guest lecturer on October 25th. A discussion will follow on the expectations for COP and a comparison of the media statements and the technical expectations for the COP.

(COP 29 is organized in Baku, Azerbaijan, between November 11th and November 22nd).

Week 3: October 18th

Topics: Legal and social aspects of climate change;

European policy for fighting climate change (objectives, main strategic documents);

Presentation of the Group work:

"Evaluation of different climate change mitigation policies";

During the session, the students will be divided into groups (Local inhabitants, Environmental NGOs, State Institutions, and International Financial Institutions). They will have to prepare their standpoints and actively participate in the discussions, debating various points of view based on their assigned roles. The main aim of the exercise is to provide the students with basic knowledge about the complexity of the evaluation of different mitigation measures against a set of pre-defined evaluation criteria.

Game: How climate-neutral are we?

(https://footprint.wwf.org.uk/#/)

After class: Preparation for the Group work (Group 1: Local Inhabitants)

Week 4: October 25th

Topics: Main processes of climate negotiations

Presentation of the homework: News related to COP29

Guest lecture/discussion on expectations from the COP29 (UN official or guest professor)

History of UNFCCC processes, main bodies, climate mechanisms, and importance of the Paris Accord.

After class: Preparation for the Group work (Group 2: Environmental NGOs)

Week 5: November 8th

Topics:

Key legal and financial climate change mechanisms;

National, Local/Municipal, and initiatives from the private sector;

After class: Preparation for the Group work (Group 3: State Institutions)

Week 6: November 15th

Topics:

Monitoring, Verification and Reporting Systems, Emission Trading Scheme, Carbon Pricing

Game: International Network of Terrestrial Stations in the Cold North (game developed under the INTERACT Horizon 2020 project)

After class: Preparation session for the Group work (Group 4: IFIs)

Week 7: November 22nd

Topics: Study visit to the Barcelona Supercomputing Centre ***(TBC)***

Importance of the climate predictions and complexity of climate models. The practical importance of climate modelling in agriculture, renewable energy, and climate adaptation. A special aspect will be given to climate services that are crucial for solving the climate challenge.

Week 8: November 29th

Topics:

Group work: Evaluation of different climate change mitigation policies (Role-play and

oral presentations).

Preparatory activities for the test.

Additional online activities (optional or during class)

News from COP29 (live call from COP29)

Final exam: December 13th

Multiple choice question test.

3. PROFESSOR

Ilija Sazdovski is a member of the International Association of Energy Engineers and between 2012 and 2018 he was part of the Scientific Advisory Board of the Conference for Sustainable Development of Energy, Water and Environmental Systems.

His previous work has been led by the urgent need to address climate change by putting it at the centre of public policy.

He is an experienced researcher with a demonstrated history of 16 years working in the international development sector. During his engagement with GIZ, he provided technical support to energy-related ministries, and partners within the EU Energy Community Secretariat, in harmonizing the monitoring and verification methodologies for the National Energy Efficiency Plans.

Also, on a local level, he provided support to the capital cities of Southeast Europe in the EU initiative of the Covenant of Mayors in achieving the 20% greenhouse gas (GHG) reduction commitments.

Ilija is a co-author of the III National Energy Efficiency Action Plan for 2016-2018 for Macedonia and a national sub-law for Monitoring and verification of energy and GHG reductions. He authored and supported the development of several software solutions for energy monitoring and GHG Monitoring Reporting and Verification (MRV) systems. He was employed as an International Expert by the United Nations for designing GHG MRV systems for the buildings sector.

He has authored numerous technical reports, strategies, and conference and scientific papers.

4. READING MATERIALS / BIBLIOGRAPHY / RESOURCES

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