

The Hebrew University of Jerusalem

Syllabus

Citizen science - Sustainability and climate action - 49611

Last update 19-09-2022

HU Credits: 3

Degree/Cycle: 2nd degree (Master)

Responsible Department: Advanced School for Environmental Studies

Academic year: 0

Semester: Yearly

Teaching Languages: Hebrew

Campus: Mt. Scopus

Course/Module Coordinator: Dr. Hadas Magen-Molho

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Coordinator Office Hours: Tuesdays, 16-17

Teaching Staff:

Dr. Hadas Magenmolho

Course/Module description:

This project-based course is a platform for environmental-social action through citizen science/'living lab' projects dealing with sustainability challenges in the 'real world', particularly in the implementation of climate action plans. Alongside with studying environmental-social issues related to the content worlds of the projects in this course, the students will work on the projects themselves, in cooperation with the stakeholders (decision makers, the community, civil society organizations, researchers, etc.). The practical work is carried out individually and in teams and includes working with data and stakeholders in different focus areas according to the needs and resources, taking into account the background and preferences of the students (and the interdisciplinary synergy). In some of the class meetings (face-to-face/online) we will discuss the issues arising from the practical work. At the end of the course, the students will have to present and submit the results of their practical work, for which a grade (constituting 80% of the final grade in the course) will be given.

Composition of the final grade (general outline):

10% Project Gantt submission at the beginning of the course

10% progress report based on the Gantt

20% initial version of the practical work's results - frontal presentation at the closing meeting

60% results of the practical work - submission of a summary report and products

Course/Module aims:

Imparting knowledge and familiarity with sustainability challenges, in particular around the climate crisis, and with citizen science/'living laboratory' as an influential platform in data-based dealing with the challenges; Practical experience in and contribution to the implementation of policy documents and action plans; Experience in integrative work across fields and sectors to synergistically deal with complex challenges; Contribution to increasing internal commitment among the students to leverage scientific knowledge and insights for significant environmental-social action.

Learning outcomes - On successful completion of this module, students should be able to:

Explain and discuss theoretical and practical aspects of their work within the project; Produce products of their practical work within the project.

Attendance requirements(%):

80%

Teaching arrangement and method of instruction: Teaching and discussions on a face-to-face/digital platform; Learning while doing practical work (that will be partly conducted in the format of a seminar, independently and in groups, in the time periods between the meetings).

Course/Module Content:

The meetings (either frontal or virtual) and practical work schedule (in times not coinciding with Course 49600: Multi-disciplinary workshop on environmental issues) will be determined and published at the beginning of the course. A general framework:

1. Presentation of the course and the projects within it, the academic component, the action component in the various channels of activities, the schedule of the meetings and practical work; citizen science and living lab: citizen involvement in scientific activity - a platform for institutional action across fields and sectors around common challenges; Democratization of knowledge with potential impact for the benefit of all partners -

Citizens, civil society: access to knowledge and understanding, mental/behavioral change, influence, empowerment;

Decision makers: assistance in the design and implementation of policies and action plans;

Academia/private Sector: Research and development, continuous improvement of scientific knowledge and its application.

After the first meeting, the students will have to rate their preferences for the focus areas of their activities during the course and submit them on the course website in Moodle. The assignment to the focus areas and work teams will be determined and communicated by the course staff before the second meeting. The students will be asked to work on a Gantt planning for individual and group task management in the action channels to which they have been assigned and to submit the Gantt after the second meeting. The possible action channels will include focus areas relevant to the project's needs, taking into account the students' profile and preferences (and interdisciplinary synergy), e.g.: high resolution mappings in space/time of data; promoting experimental solutions 'in the field'; mapping stakeholders and recruiting new players for the project; moves to involve the public (including in digital media); Promoting the involvement of vulnerable population groups; making knowledge accessible in educational and other settings; improving the usability of the data and collaborative platforms in the project; preparing operative reviews, recommendations and position papers for decision makers.

2. Practical work - experiencing activities in the projects; Assistance in the planning of the Gants.

Between meeting 2 and meeting 3: submission of detailed Gantts noting all the milestones and a timetable for execution, individually (for each student) and in

group.

3. Environmental-social-economic sustainability challenges, primarily the climate crisis (climate, ecosystems, pollution); mitigation; adaptation; Cities at the forefront of the crisis: the effects of the built environment on the climate, the effects of the climate in the urban environment, health, quality of life; environmental footprint.

4. Practical work.

5. Review of the policy document/action plans to deal with the climate crisis; public participation and involvement; bottom-up & top-down design.

6. Practical work.

Between session 6 and session 7: submission of a progress report.

7. Air pollutants: sources, effects, regulation; air pollution and the climate crisis; Meteorological-climatic variables: trends, effects; urban heat islands, climatic discomfort; Floods, extreme events.

8. Practical work.

9. Data monitoring methods at different resolutions in space and time; use of sensors; remote sensing; close sensing; Data Analysis; data mapping/visualization; geographic information systems; collaborative use of data; network-based software; urban innovation, smart city.

10. Practical work.

11. Green infrastructure to deal with the climate crisis; cooling and shading; carbon fixation; absorption of pollutants.

12. Practical work.

13. Sustainable energy.

14. Closing meeting - presentation of the practical work results.

Submitting the results of the course about two months after the closing meeting.

Required Reading:

To be published on the course website on Moodle.

Additional Reading Material:

Enrichment materials (not part of the mandatory course material) will be uploaded to the course website on Moodle.

Course/Module evaluation:

End of year written/oral examination 0 %

Presentation 0 %

Participation in Tutorials 0 %

Project work 0 %

Assignments 0 %

Reports 0 %

Research project 0 %

Quizzes 0 %

Other 100 %
See Course Description section.

Additional information:

Face-to-face classes will be held at the Mount Scopus campus. Timetable (will not conflict with the meetings in course 49600) and room number will be published later. Course is limited in participants. Preference is given to students of the school for environmental studies (527/815/728/603 programs) and to 3rd- year undergraduate students in the Sustainability, Climate, and Society' minor, and / or for students with a background in environmental-social action.