



Full Syllabus



Course Title

EWB (Engineers without borders) – challenges in developing countries

Lecturer

Prof. Alexander Golberg and Dr. Opher Mendelsohn

Semester

A

Course requirements

Course components:

Lectures (1-2h a week) on theoretical aspects of food security, food production technology and community engagement.

Practical workshops: on: 1) academic research, writing and presentation, 2) team based project planning and management 3) Project impact analysis.

Work groups: students will form 3 work groups dealing with the three aspects of that topic 1) Food security, 2) Technology and 3) Community, and prepare relevant parts of the whole field project. Weekly working group representatives will report on the group project development. A time for group work will be allocated each week.

Seminar paper: Each student will prepare a personal seminar paper, focused on an issue related to the her.his work group topic

Field project: The course will be focused on a real life project in Nakuru county (Kenya), based at that stage on three components of improving protein and other nutritional ingredients production to rural communities - 1) R&D of appropriate technologies and ongoing production of Spirulina at a community level in Keriko highschool 2) Setting of a regional demonstration center of Spirulina and maybe also duckweed and 3) Setting of an R&D center for duckweed production and incorporating it into laying hens feed

Independent material reading, presentation, class report and submission of seminar paper.

*There is a requirement for 80% (8 meetings) attendance, physically in class or in zoom with open camera. All meetings will be available in zoom and reordered, but attendance in zoom is allowed only for justified reasons.

Final grade components

Individual paper presentation: Students will present their personal seminar paper progress twice during the semester (15% score).

Group project presentation. As part of the seminar, students will present three reports in groups: (1) Food security, 2) Technology and 3) Community, related to the seminar paper of their choice. This report will be weighted with a final score of 15% and should include: A clear reference to a food security/technology/community impact assessment. Students will present topics and answer participants' questions.

Final paper presentation and report. By the end of the seminar, the seminar paper (70%), based on at least 10 peer reviewed papers, will be submitted in accordance with each university's rules.



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Course schedule, subject to changes	
Date & Leading lecturers	Subject and Requirements (assignments, reading materials, tasks, etc.)
<p>4.1.2024. Prof. Alex Golberg Dr. Opher Mendelsohn Michal Dolev Hashimshony</p> <p>Prof. Alex Golberg</p>	<p>Course structure and requirements (schedule, works structure, grades). Presentation of EWB and its activity in communities in developing countries to promote sustainable adoption of appropriate technologies.</p> <p>Practical workshop 1. academic research, writing and presentation</p>
<p>11.1.2024. Prof. Eliot Berry</p> <p>Dr. Opher Mendelsohn Michal Dolev Hashimshony</p>	<p>Pandemics, Plenty and Poverty: combating food Insecurity & malnutrition in Developing Countries</p> <p>Practical workshop 2. Team based project planning and management</p>
<p>18.1.2024 MKU Dr. Opher Mendelsohn Michal Dolev Hashimshony Tova Makhani- Belkin</p>	<p>Food security challenges in rural Kenya, with special focus on Nakuru area</p> <p>Practical workshop 3. Project impact analysis</p>
<p>25.1.2024 Zoom meeting with pupils and staff of Keriko Elana Sztokman Dr. Opher Mendelsohn Michal Dolev Hashimshony</p>	<p>Acquaintance with Keriko and the Spirulina projects Integrating Spirulina in Kenyan cousine Guided work in groups</p>
<p>1.2.2024 Prof. Alex Golberg Dr. Opher Mendelsohn Michal Dolev Hashimshony</p>	<p>Alternative proteins Guided work in groups</p>
<p>8.2.2024 Zipora Nusbaum Dr. Opher Mendelsohn Michal Dolev Hashimshony</p>	<p>Women growing of mushrooms in Tanzania to beat poverty Guided work in groups</p>
<p>15.2.2024 MKU Dr. Opher Mendelsohn Michal Dolev Hashimshony</p>	<p>Relationship between media and food security in Kenya: Its roles and challenges Guided work in groups</p>
<p>22.2.2024. Dr. Mark Poli Dr. Opher Mendelsohn Michal Dolev Hashimshony</p>	<p>Duckweed Guided work in groups</p>



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<p>29.2.2024 . EWB-US project manager operating in Africa Dr. Opher Mendelsohn Michal Dolev Hashimshony</p>	<p>EWB implementation strategies Guided work in groups</p>
<p>7.3.2024 Dr. Opher Mendelsohn Michal Dolev Hashimshony</p>	<p>Individual project presentations</p>
<p>14.3.2024 Dr. Opher Mendelsohn Michal Dolev Hashimshony</p>	<p>Individual project presentations</p>
<p>Required course reading</p>	
<p>Rafael Pérez-Escamilla (2015) Food Security and the 2015-2030 Sustainable Development Goals: From Human to Planetary Health: Perspectives and Opinions, Akubue, A. (2000). JOTS v26n1 - Appropriate Technology for Socioeconomic Development in Third World Countries. 1–20. Alim, et al. (2020). Suitability of roof harvested rainwater for potential potable water production: A scoping review. Journal of Cleaner Production, Vol. 248. https://doi.org/10.1016/j.jclepro.2019.119226 B. Amadei, (2009) A model for sustainable humanitarian engineering projects.</p>	
<p>Comments</p>	
<p>Changes may be made to the composition of instructors and lecturers</p>	