

## *The Hebrew University of Jerusalem*

### *Syllabus*

## *Solid Waste Management - 89540*

*Last update 29-07-2018*

*HU Credits:* 2.5

*Degree/Cycle:* 1st degree (Bachelor)

*Responsible Department:* Environmental Sciences

*Academic year:* 0

*Semester:* 1st Semester

*Teaching Languages:* Hebrew

*Campus:* E. Safra

*Course/Module Coordinator:* Yoav Goell

*Coordinator Email:* [yoavg@sviva.gov.il](mailto:yoavg@sviva.gov.il)

*Coordinator Office Hours:* Wed. 18:30 – 19:00

*Teaching Staff:*

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Mr. Yoav Goell

Course/Module description:

Knowledge of basic issues concerning the treatment of solid waste

Course/Module aims:

Providing knowledge and understanding of solid waste management in Israel and the developed countries. The course provides tools of solid waste management including environmental, health, technological, economic and social aspects. The course deals with municipal solid waste composition and characteristics, collection methods, storage and transformation, and treatment methods including landfilling waste to energy and recycling. The course introduces the students to the solid waste management policy in Israel and the means to implement it (legislation, planning etc.).

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

1. Recognize the environmental and health impacts of solid waste.
2. Recognize the key concepts in the treatment of solid waste
3. Recognize the fundamentally different methods of solid waste treatment (landfill, thermal treatment, recycling, etc).
4. Recognize the issue of solid waste management in the local authority area (urban section) including the deployment considerations and characteristics retention tanks, waste handling and more.
5. Recognize the solid waste management policy of the State of Israel.
6. Recognize and understand the various policy tools (legislation, planning system, etc.) are used to implement a solid waste management policy.
7. Recognize the issue of construction & demolition waste treatment in Israel.
8. Recognize the future trends in the treatment of solid waste.

Attendance requirements(%):

Mandatory attendance at 80% of the lectures

Teaching arrangement and method of instruction: The course includes 2 frontal lecture hours each week. In addition there will be a day tour.

Course/Module Content:

1. Introduction, Definitions, facts and figures – introducing the course objectives, solid waste definitions, facts and figures from Israel and the rest of the world, solid

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waste as an environmental issue.

2. Solid waste treatments methods:

2.1 Landfilling – description, modern landfill structure, preventing pollution methods and systems, landfill gas, rehabilitation and more

2.2 Thermal treatment – different methods of thermal treatment (mass burn, gasification, pyrolysis etc.), preventing pollution methods and systems, and more

2.3 Recycling – description, development

2.3.1 Recycling of the inorganic components of the waste (dry stream) – plastics, paper, glass etc.

2.3.2 Recycling and treatment of the organic component

2.3.2.1 Composting – aerobic treatment

2.3.2.2 Anaerobic Digestion

3 Waste treatment in the municipal territory – collection, transformation, transport station

4 Solid waste management policy in Israel

5 Implementation tools for solid waste management policy

5.1 Economic tools

5.2 Planning and Building system

6 Construction and demolition (c & d) waste in Israel

7 Additional subjects such as Reducing food waste and more

Required Reading:

None

Additional Reading Material:

None

Course/Module evaluation:

End of year written/oral examination 100 %

Presentation 0 %

Participation in Tutorials 0 %

Project work 0 %

Assignments 0 %

Reports 0 %

Research project 0 %

Quizzes 0 %

Other 0 %

Additional information:

None