

- The M.Sc. program is a two-year program.
- The chairperson of the teaching committee is: **Dr. Anat Bernstein.**
- Students are required to complete the following courses during the two-year program:

Subject	Credits
Courses within the track of study	30
A. Mandatory course (2 credit points)	
B. Core courses (13 credit points)	
C. Departmental and student seminars (1 credit point)	
D. Mandatory Core Courses Within the Track of Study (5 credit points)	
E. Elective courses (5 credit points)	
F. General courses (4 credit points)	
Thesis Writing	12
Total	42

A.Mandatory Course:

Course #	Lecturer	Subject	Credits
001-2-7006	Dr. Shai Arnon and Prof. Jack Gilron	Summarizing, Writing and Presenting Scientific Data	2

or

Course #	Lecturer	Subject	Credits
001-2-0153	Dr. Chris Arnush and Prof. Jack Gilron	Writing a Scientific Paper	2

B. Core Courses:

Students are required to complete 13 credits*.

Course #	Lecturer	Subject	Credits
001-2-0003	Dr. Oded Nir	Chemistry of Water	3

B. Core Courses (Continuation):

Course #	Lecturer	Subject	Credits
001-2-0016	Dr. Roy Bernstein	Physicochemical Technologies for Water Treatment	2
001-2-5024	Prof. Ofer Dahan	Groundwater Hydrology	2
001-2-5033	Dr. Avraham Be'er	Introduction to Desalination Processes	3
001-2-5059	Dr. Osnat Gillor	Water Microbiology+	3

+Nonmicrobiologists may take the course:

Course #	Lecturer	Subject	Credits
001-2-5159	Dr. Osnat Gillor	Introduction to Microbiologists	1

* Students who previously completed courses that were similar/equivalent to certain courses listed above are required to complete the remainder of the required core course credits by enrolling in courses either from the list of Mandatory Core Courses (C) or from the list of Elective Courses (D) or from a combination of both (with the approval of the student's supervisor and the chairperson of the teaching committee).

C. Seminars and Thesis Writing -- Mandatory Courses:

Students are required to attend Departmental Seminars (one seminar per semester).

Course #	Lecturer	Subject	Credits
001-2-5555	Dr. Chris Arnusch (coordinator)	Departmental Seminar A (first year)	0
001-2-5557		Departmental Seminar B (first year)	0
001-2-5556		Departmental Seminar A (second year)	0
001-2-5558		Departmental Seminar B (second year)	0

C. Seminars and Thesis Writing -- Mandatory Courses (continuation):

Students are required to present two seminars (one student seminar per year).

Course #	Lecturer	Subject	Credits
001-2-9995	Prof. Ali Nejdat (coordinator)	Student Seminar (first year)	0.5
001-2-9996		Student Seminar (second year)	0.5

In the third and fourth semesters, students must register for Thesis Writing.

Course #	Lecturer	Subject	Credits
001-2-9991		Thesis Writing A	6
002-2-9992		Thesis Writing B	6

Students who have completed the above Thesis Writing courses and who continue their studies for a fifth semester must register for the following course:

Course #	Lecturer	Subject	Credits
001-2-1000		Thesis Writing – Continuation	0

D. Mandatory Core Courses Within the Track of Study:

Students are required to complete at least 5 credits*.

Course #	Lecturer	Subject	Credits
001-2-5028	Prof. Moshe Herzberg	Microbial Biofilms in Water and Wastewater Treatment Processes (prerequisite: Introduction to Microbiology)	2
001-2-5033**	Dr. Avraham Be'er	Introduction to Desalination Processes	3
001-2-5038	Prof. Amit Gross	Water Sanitation	3
001-2-5060	Prof. Moshe Herzberg	Biological Processes in Wastewater Treatment	2

* Mandatory Core Courses can be also selected as Elective Courses (on top of the required 5 credits).

E. Elective Courses:

This is a partial list. The student is allowed to select other courses that are related to the area of his/her research with the approval of the supervisor. Students are required to complete at least 5 credits.

Course #	Lecturer	Subject	Credits
001-2-0004	Prof. Noam Weisbrod	Vadose Zone Hydrology	2.5
001-2-0006	Prof. Jack Gilron	Membrane Process A	2
001-2-0007	Prof. Jack Gilron	Membrane Process B	2
001-2-0009	Dr. Avraham Be'er	Physics of Bacterial Communities	3
001-2-0012	Prof. Daniel Ronen	Selected Issues Related to Groundwater Hydrology: Quality & Quantity	1
001-2-0015	Dr. Roy Bernstein	Membrane Preparation and Characterization	3
001-2-0017	Prof. Ron Kasher	Polymer Science and Polymeric Membranes	3
001-2-0021	Dr. Christopher Arnusch	Biomimetic Innovation Approaches	2
001-2-0022	Dr. Anat Bernstein	Stable Isotope Application in Contaminant Hydrology	2
001-2-0030	Dr. Anat Bernstein and Prof. Amit Gross	Lab Methods in Soil Science	3
001-2-0032	Dr. Christopher Arnusch	Advanced Chemistry in Water Technologies	3
001-2-2015	Prof. Dina Zilberg and Prof. Amit Gross	Introduction to Desert Aquaculture	3
001-2-2017	Dr. Simon Barak	Plant Perception, Transduction and Response to Environmental Signals	2
001-2-2036	Prof. Gideon Grafi	Molecular Biology and Epigenetics	2
001-2-2038	Prof. Naftali Lazarovitch	Soil Physics	3

E. Elective Courses (continuation):

Course #	Lecturer	Subject	Credits
001-2-2040	Prof. Gideon Grafi	Lab Course in Epigenetics	4
001-2-2046	Prof. Aaron Fait	Analysis of Biological Networks	4
001-2-3021	Dr. Itamar Giladi	Bio-Statistics - ANOVA and Design of Experiments	3
001-2-4010	Prof. Georgy Burde, Prof. Isaak Rubinstein	Topics in Environmental Fluid Mechanics	3
001-2-4012	Prof. Isaak Rubinstein	Electro-Diffusion of Ions and Membrane Desalination Processes	3
001-2-4022	Prof. Ehud Meron	Pattern Formation and Spatial Ecology	3
001-2-4028	Prof. Arnon Karnieli	Remote Sensing for Agriculture, Rangelands, and Forestry (no prerequisites required)	3
001-2-5004	Prof. Noam Weisbrod, Prof. Ofer Dahan	Field Methods in Hydrology	3
001-2-5006	Prof. Alex Yakirevitch	Migration Processes in the Unsaturated Zone of Soil	3
001-2-5010	Prof. Zeev Ronen	Groundwater Microbiology	2
001-2-5012	Prof. Zeev Ronen	Biodegradation Process of Synthetic Organic Compound in Water Soil	2
001-2-5014	Prof. Shaul Sorek	Introduction to Modeling Transport Phenomena in Heterogeneous Media	3
001-2-5026	Prof. Ali Nejidat	Nitrogen Transformations and Environmental Quality	2
001-2-5029	Prof. Noam Weisbrod	Rural Water Development	2
001-2-5030	Dr. Nurit Agam	Hydrometeorology	3
001-2-5034	Prof. Yoram Oren	Environmental Oriented Electrochemistry	2

E. Elective Courses (continuation):

Course #	Lecturer	Subject	Credits
001-2-5040	Dr. Eli Zaady	Soil Microbial Ecology	2
001-2-5041	Dr. Menachem Sklartz	Practical Bioinformatics for Environmental Studies	3
001-2-5042	Dr. Roni Kasher	Amino Acids and Peptides: Chemistry and Biology	2
001-2-5055	Prof. Naftali Lazarovitch, Prof. Ofer Dahan	Operation and Analysis of Environmental Monitoring Systems	1
001-2-5061	Dr. Edo Bar-Zeev	Nexus of the Desalination Industry and the Aquatic Environment	3
001-2-5062	Dr. Edo Bar-Zeev	Microbial Sociology: From a Single Bacterium to Biofilm and Biofouling	3
001-2-5064	Prof. Jack Gilron and Dr. Oded Nir	Unit operations in water treatment processing	2
001-2-5068	Dr. Oded Nir	Aqueous Chemistry Modeling with PHREEQC	2
001-2-5100	Dr. Genadi Carmi	Introduction to Surface Hydrology	2
001-2-5129	Prof. Noam Weisbrod	Rural Water Development (field trip) - Prerequisite: Course # 001-2-5029	2
001-2-6002	Dr. Aviva Peeters	Theory and Applications of Geographic Information Systems (GIS) (limited to 15 students)	3
001-2-7010	Dr. Menachem Sklartz	Hands-on Introduction to R: Programming, Graphing and Statistical Exploration	2
205-2-5021	Dr. Moshe Kiflawi	Methods in Ecology	3

F. General Courses:

Students are required to complete at least 4 credits.

Course #	Lecturer	Subject	Credits
001-2-1103	Dr. Hadas Hawlena	Introduction to Dryland Ecology	4

F. General Courses (Continuation):

Course #	Lecturer	Subject	Credits
001-2-4016	Dr. Leah Orlovsky	Geography of Desertification	2
001-2-4029	Prof. Yossi Ashkenazy	Introduction to Statistics and Probability	3