HYDROLOGY AND WATER QUALITY

TIME TABLE FOR THE SPRING SEMESTER (B)- ACADEMIC YEAR 2020/2021

A. Mandatory Courses:

Students are required to complete one of the courses from the list below during in their first or second semester of studies:

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-0153	Prof. Shai Arnon and Dr. C hris Arnush	Writing a Scientific Paper	2	Mon	09:00-10:45	Sede Boqer	School	1	Average of Home Assignments

Students are required to complete the courses from the list below during in their **first** semester of studies:

900-5-5001 Educational Software on Getting to Know the Law for the Prevention of Sexual Harassment - MANDATORY for all students. The course is in the MOODLE system **(Hebrew -** https://moodle2.bgu.ac.il/moodle/ **; English -** http://moodle2.bgu.ac.il/?lang=en). Registration: **Hebrew** - https://bgu4u.bgu.ac.il/pls/scwp/!app.gate?app=csh ; **English -** https://bgu4u.bgu.ac.il/pls/scwp/!app.gate?app=csh&lang=en .

900-5-2002 Training in Chemical & Biological Safety - MANDATORY for Students Who Work in Chemical and Biological Labs (Students should take the course every year). Registration for the course is in the first semester of each academic year. The course is in the MOODLE system **Hebrew -** https://moodle2.bgu.ac.il/moodle/ and **English -** http://moodle2.bgu.ac.il/?lang=en.

470-2-0100 The Care and Use of Animals in Research - MANDATORY for Students Who Work with Animals

MICROBIOLOGY AND WATER QUALITY

B. Core Courses:

Students are required to complete all courses from the list below*.

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-0003	Dr. Oded Nir	Chemistry of Water	3	Tue	10:15-13:00	Sede Boqer	Water Inst.	Seminar Room	Exam

* 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) and Student Seminars (one seminar per year).

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room
001-2-5555	Dr. Chris Arnusch and Dr. Scott K. Hansen (Coordinator)	Departmental Seminar A (first year)	0	Wed	13:00-14:00	Sede Boqer	Old Admin. Build.	Seminar Room
001-2-5557		Departmental Seminar B (first year)						
001-2-5556		Departmental Seminar A (second year)						
001-2-5558		Departmental Seminar B (second year)						
001-2-9995	Prof. Ali Nejidat (Coordinator)	Student Seminar (first year)	0.5	Wed	09:00-10:00	Sede Boqer	Water Inst.	Seminar Room
001-2-9996		Student Seminar (second year)	0.5					

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

Course No.	Lecturer	Subject	Credits
001-2-9991	--	Thesis Writing A	6
001-2-9992	--	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 course.

Course No.	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 7 credits**.

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-0004	Prof. Noam Weisbrod	Vadose Zone Hydrology (The course will be taught if at least six students are enrolled)	2.5	Mon	08:30-11:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-5060	Prof. Moshe Herzberg	Biological Processes in Wastewater Treatment	2	Thu	15:15-17:00	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper
001-2-5062	Dr. Edo Bar-Zeev	Microbial Sociology: From a Single Bacterium to Biofilm and Biofouling	3	Mon	16:15-19:00	Sede Boqer	Water Inst.	Seminar Room	Exam

** Mandatory Core Courses can be also selected as Elective Courses (on top of the required 7 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 8 credits.

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-0009	Prof. Avraham Be'er	Physics of Bacterial Communities	3	Mon	13:15-16:00	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper
001-2-0012	Prof. Daniel Ronen	Selected Issues Related to Groundwater Hydrology: Quality & Quantity	1	A two-day intensive workshop offered during the SUMMER break, September, 2021, 9:00-16:00. Course registration takes place during the registration period for the SUMMER semester.					Final Term Paper
001-2-0021	Dr. Christopher Arnusch	Biomimetic Innovation Approaches	2	Tue	16:00-17:45	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper
001-2-0015	Dr. Roy Bernstein	Membrane Preparation and Characterization	3	Tue	13:15-16:00	Sede Boqer	Water Inst.	Seminar Room	Mid Term Exam, Lab, Final Term Paper
001-2-4031	Prof. Isaak Rubinstein	Topics in Physico-Chemical Hydrodynamics and Electrodiffusion (A)	2	Flexible - according to the schedules of the students					Final Term Paper
001-2-5012	Prof. Zeev Ronen	Biodegradation Process of Synthetic Organic Compound in Water Soil	2	Thu	10:15-12:00	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper
001-2-5026	Prof. Ali Nejidat	Nitrogen Transformations and Environmental Quality	2	Mon	11:15-13:00	Sede Boqer	Water Inst.	Seminar Room	Interm Exam + presentation and Final Term Paper
001-2-5038	Prof. Amit Gross	Water Sanitation	3	Thu	12:15-15:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-5040	Dr. Eli Zaady	Soil Microbial Ecology (upon the request of at least 5 students)	2	Thu	08:30-10:00	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper
001-2-5044	Prof. Shai Arnon	Biogeochemical Processes in Surface Water Sy	3	Tue	12:15-15:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-5063	Dr. Edo Bar-Zeev	Lab-course: New Methods in Biofilm Characterization	3	An intensive course offered during the SUMMER break, ==========, Water Building, Seminar Room. Course registration takes place during the registration period for the SUMMER semester.					Final Term Paper and Exam
001-2-5065	Prof. Shai Arnon	Flow and Water Quality in Streams: Theory and Practice	2	Tue	08:30-10:00	Sede Boqer	Water Inst.	Seminar Room	Field Work Report

E. Elective Courses (Continuation):

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-5067	Dr. Scott K. Hansen	Introduction to Contaminant Hydrology	3	Sun	13:15-16:00	Sede Boqer	Water Inst.	Seminar Room	A final exam and problem sets
001-2-5068	Dr. Oded Nir	Aqueous Chemistry Modeling with PHREEQC	2	An intensive workshop offered during the SUMMER break (limited to 16 students).					Final Term Paper
001-2-5070	Dr. Scott K. Hansen	Practical Data Science and Machine Learning	3	Wed	10:15-13:00	Sede Boqer	Water Inst.	Seminar Room	Take-Home Problem Sets
001-2-6002	Dr. Aviva Peeters	Theory and Applications of Geographic Information Systems (GIS)	3	Thu	09:15-12:00	Sede Boqer	Man in Drylands	Computer Room	Final Term Paper

WATER RESOURSES

B. Core Courses:

Students are required to complete all courses from the list below*.

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-0003	Dr. Oded Nir	Chemistry of Water	3	Tue	10:15-13:00	Sede Boqer	Water Inst.	Seminar Room	Exam

* 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, Courses - Mandatory Courses:

Students are required to attend Departmental Seminars (one seminar per semester) and Student Seminars (one seminar per year):

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room
001-2-5555	Dr. Chris Arnusch and Dr. Scott K. Hansen (Coordinator)	Departmental Seminar A (first year)	0	Wed	13:00-14:00	Sede Boqer	Old Admin. Build.	Seminar Room
001-2-5557		Departmental Seminar B (first year)						
001-2-5556		Departmental Seminar A (second year)						
001-2-5558		Departmental Seminar B (second year)						
001-2-9995	Prof. Ali Nejidat (Coordinator)	Student Seminar (first year)	0.5	Wed	09:00-10:00	Sede Boqer	Water Inst.	Seminar Room
001-2-9996		Student Seminar (second year)						

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

Course No.	Lecturer	Subject	Credits
001-2-9991	--	Thesis Writing A	6
001-2-9992	--	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 course.

Course No.	Lecturer		Credits
001-2-1000	--	Thesis Writing - Continuation	0

D. Mandatory Core Courses Within the Track of Study:

Students are required to complete at least 7 credits**.

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-0004	Prof. Noam Weisbrod	Vadose Zone Hydrology (The course will be taught if at least six students are enrolled)	2.5	Mon	08:30-11:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-5004	Prof. Ofer Dahan, Prof. Noam Weisbord	Field Methods in Hydrology	3	Sun	16:15-19:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-5067	Dr. Scott K. Hansen	Introduction to Contaminant Hydrology	3	Sun	13:15-16:00	Sede Boqer	Water Inst.	Seminar Room	A final exam and problem sets
001-2-5060	Prof. Moshe Herzberg	Biological Processes in Wastewater Treatment	2	Thu	15:15-17:00	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper

****** Mandatory Core Courses can be also selected as Elective Courses (on top of the required 7 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 8 credits.

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-0012	Prof. Daniel Ronen	Selected Issues Related to Groundwater Hydrology: Quality & Quantity	1	A two-day intensive workshop offered during the SUMMER break, September, 2021, 9:00-16:00. Course registration takes place during the registration period for the SUMMER semester.					Final Term Paper
001-2-0015	Dr. Roy Bernstein	Membrane Preparation and Characterization	3	Tue	13:15-16:00	Sede Boqer	Water Inst.	Seminar Room	Mid Term Exam, Lab, Final Term Paper
001-2-0021	Dr. Christopher Arnusch	Biomimetic Innovation Approaches	2	Tue	16:00-17:45	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper
001-2-5026	Prof. Ali Nejidat	Nitrogen Transformations and Environmental Quality	2	Mon	11:15-13:00	Sede Boqer	Water Inst.	Seminar Room	Interm Exam + presentation and Final Term Paper
001-2-5038	Prof. Amit Gross	Water Sanitation	3	Thu	12:15-15:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-5044	Prof. Shai Arnon	Biogeochemical Processes in Surface Water Sy	3	Tue	12:15-15:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-5062	Dr. Edo Bar-Zeev	Microbial Sociology: From a Single Bacterium to Biofilm and Biofouling	3	Mon	16:15-19:00	Sede Boqer	Water Inst.	Seminar Room	Exam

E. Elective Courses (Continuation):

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-5063	Dr. Edo Bar-Zeev	Lab-course: New Methods in Biofilm Characterization	3	An intensive course offered during the SUMMER break, ==========, Water Building, Seminar Room. Course registration takes place during the registration period for the SUMMER semester.					Final Term Paper and Exam
001-2-5065	Prof. Shai Arnon	Flow and Water Quality in Streams: Theory and Practice	2	Tue	08:30-10:00	Sede Boqer	Water Inst.	Seminar Room	Field Work Report
001-2-5067	Dr. Scott K. Hansen	Introduction to Contaminant Hydrology	3	Sun	13:15-16:00	Sede Boqer	Water Inst.	Seminar Room	A final exam and problem sets
001-2-5068	Dr. Oded Nir	Aqueous Chemistry Modeling with PHREEQC	2	An intensive workshop offered during the SUMMER break (limited to 16 students).					Final Term Paper
001-2-5070	Dr. Scott K. Hansen	Practical Data Science and Machine Learning	3	Wed	10:15-13:00	Sede Boqer	Water Inst.	Seminar Room	Take-Home Problem Sets
001-2-5100	Dr. Genady Carmi	Introduction to Surface Hydrology	2	Tue	08:30-10:00	Sede Boqer	48	2	Exam
001-2-6002	Dr. Aviva Peeters	Theory and Applications of Geographic Information Systems (GIS)	3	Thu	09:15-12:00	Sede Boqer	Man in Drylands	Computer Room	Final Term Paper

DESALINATION AND WATER TREATMENT

B. Core Courses:

Students are required to complete all courses from the list below*.

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-0003	Dr. Oded Nir	Chemistry of Water	3	Tue	10:15-13:00	Sede Boqer	Water Inst.	Seminar Room	Exam

* 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) and Student Seminars (one seminar per year).

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room
001-2-5555	Dr. Chris Arnusch and Dr. Scott K. Hansen (Coordinator)	Departmental Seminar A (first year)	0	Wed	13:00-14:00	Sede Boqer	Old Admin. Build.	Seminar Room
001-2-5557		Departmental Seminar B (first year)						
001-2-5556		Departmental Seminar A (second year)						
001-2-5558		Departmental Seminar B (second year)						
001-2-9995	Prof. Ali Nejidat (Coordinator)	Student Seminar (first year)	0.5	Wed	09:00-10:00	Sede Boqer	Water Inst.	Seminar Room
001-2-9996		Student Seminar (second year)	0.5					

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

Course No.	Lecturer	Subject	Credits
001-2-9991	--	Thesis Writing A	6
001-2-9992	--	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 course.

Course No.	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 No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-5038	Prof. Amit Gross	Water Sanitation	3	Thu	12:15-15:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-5060	Prof. Moshe Herzberg	Biological Processes in Wastewater Treatment	2	Thu	15:15-17:00	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper

****** 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 No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-0004	Prof. Noam Weisbrod	Vadose Zone Hydrology (The course will be tau	2.5	Mon	08:30-11:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-0009	Prof. Avraham Be'er	Physics of Bacterial Communities	3	Mon	13:15-16:00	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper
001-2-0012	Prof. Daniel Ronen	Selected Issues Related to Groundwater Hydrology: Quality & Quantity	1	A two-day intensive workshop offered during the SUMMER break, September, 2021, 9:00-16:00. Course registration takes place during the registration period for the SUMMER semester.					Final Term Paper
001-2-0015	Dr. Roy Bernstein	Membrane Preparation and Characterization	3	Tue	13:15-16:00	Sede Boqer	Water Inst.	Seminar Room	Mid Term Exam, Lab, Final Term Paper
001-2-0021	Dr. Christopher Arnusch	Biomimetic Innovation Approaches	2	Tue	16:00-17:45	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper
001-2-0032	Dr. Christopher Arnusch	Advanced Chemistry in Water Technologies	3	Sun	10:15-13:00	Sede Boqer	Water Inst.	Seminar Room	Two Lab Assignments and Exam
001-2-5004	Prof. Ofer Dahan, Prof. Noam Weisbord	Field Methods in Hydrology	3	Sun	16:15-19:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-5012	Prof. Zeev Ronen	Biodegradation Process of Synthetic Organic Compound in Water Soil	2	Thu	10:15-12:00	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper
001-2-5026	Prof. Ali Nejidat	Nitrogen Transformations and Environmental Quality	2	Mon	11:15-13:00	Sede Boqer	Water Inst.	Seminar Room	Interm Exam + presentation and Final Term Paper
001-2-5040	Dr. Eli Zaady	Soil Microbial Ecology (upon the request of at least 5 students)	2	Thu	08:30-10:00	Sede Boqer	Water Inst.	Seminar Room	Final Term Paper
001-2-5062	Dr. Edo Bar-Zeev	Microbial Sociology: From a Single Bacterium to Biofilm and Biofouling	3	Mon	16:15-19:00	Sede Boqer	Water Inst.	Seminar Room	Exam
001-2-5063	Dr. Edo Bar-Zeev	Lab-course: New Methods in Biofilm Characterization	3	An intensive course offered during the SUMMER break, ==========, Water Building, Seminar Room. Course registration takes place during the registration period for the SUMMER semester.					Final Term Paper and Exam

E. Elective Courses (Continuation):

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-5065	Prof. Shai Arnon	Flow and Water Quality in Streams: Theory and Practice	2	Tue	08:30-10:00	Sede Boqer	Water Inst.	Seminar Room	Field Work Report
001-2-5066	Dr. Scott K. Hansen	Scientific computing with MATLAB and Python	3	Tue	12:15-15:00	Sede Boqer	Water Inst.	Seminar Room	The grades on the assignments are averaged
001-2-5068	Dr. Oded Nir	Aqueous Chemistry Modeling with PHREEQC	2	An intensive workshop offered during the SUMMER break (limited to 16 students).					Final Term Paper
001-2-5070	Dr. Scott K. Hansen	Practical Data Science and Machine Learning	3	Wed	10:15-13:00	Sede Boqer	Water Inst.	Seminar Room	Take-Home Problem Sets
001-2-5100	Dr. Genady Carmi	Introduction to Surface Hydrology	2	Sun	08:30-10:00	Sede Boqer	48	2	Final Term Paper
001-2-6002	Dr. Aviva Peeters	Theory and Applications of Geographic Information Systems (GIS)	3	Thu	09:15-12:00	Sede Boqer	Man in Drylands	Computer Room	Final Term Paper

F. General Courses:

Students are required to complete no more than 4 credits.

Course No.	Lecturer	Subject	Credits	Day	Time	Campus	Building	Room	Final Assignments
001-2-1103	Dr. Hadas Hawlena	Introduction to Dryland Ecology	4	Wed	12:30-15:30	Sede Boqer	School	1	Final Term Paper