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Marine Geosciences

Dr. Moses Strauss Department of Marine Geosciences Leon H. Charney School of Marine Sciences M.Sc. Program

Head of the Department: **Dr. Michael Lazar**

(Language of Instruction is English)

Academic staff:

Full Professors: Prof. Barak Herut

Associate Professors: Prof. (Emeritus) Boris Katznelson

Senior Lecturers: Dr. Michael Lazar, Dr. Yizhaq Makovsky, Dr. Uri Schattner,
Dr. Gideon Tibor, Dr. Revital Bookman, Dr. Yoav Lehahn

Lecturers: Dr. Beverly Goodman, Dr. Regina Katzman, Dr. Nicolas Waldmann

Administrative Staff:

Administrative Assistant to the Chairman of the Department:

Mrs. Anat Overlander

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M.Sc. Studies

The recent gas discoveries offshore Israel will lead to unprecedented development and poses academic and technological challenges, which are at the forefront of science. The discoveries and the ensuing developments are deeply rooted in the geology and geophysics being taught in the Department of Marine Geosciences – the first department in Israel to focus on training researchers in these fields.

Studies and research in the Department focus on phenomena and processes in the marine environment from the water body, through the seafloor and to the deep subsurface. Topics include: geology, geochemistry, geophysics, oceanography, mapping, remote sensing, geodynamics, marine and coastal sedimentology, paleoclimate, geochemical oceanography and paleoceanography. Students focus on this wide range of topics while developing understanding in physics, mathematics and computer science. The program is part of the general interdisciplinary framework of the Leon Charney School of Marine Sciences. Students participate in a research cruise and throughout their studies, obtain broad and applicable skills in the most advanced methods of research. Facilities include equipment for marine geological and geophysical sampling, computer laboratory equipped with state of the art programs used by the industry for processing and interpretation of geophysical data, and laboratories for sediment core analysis and lead 210 dating.

Israel needs experts in marine geology and geophysics. Come join us.

Admission Requirements and Prerequisites

- ◆ Accredited B.Sc. degree from a recognized academic institution in geology, geophysics, marine science, engineering or other related sciences (complementary studies may be required). Department prerequisites are on the level of a B.Sc. in geology. Basic knowledge of science in the following areas is required: Mathematics, Physics, Chemistry, Geology, Atmosphere, English and Computers.
- ◆ A minimum final grade of 80 or equivalent in the relevant undergraduate degree is necessary.
- ◆ TOEFL scores (if native language is not English or candidates have not previously studied in an institution of higher education where the language of instruction is English) of at least 550 (paper-based test), 213 (computer-based test) or 80 (internet-based test). Applicants that have obtained an official exemption from English during undergraduate studies or on Psychometric Entrance Test, will be released from taking the TOEFL (the official exemption should be submitted).
- ◆ Candidate's Curriculum Vitae.

- ◆ Research statement goals and aims of the planned research (500-750 words) including general description and relevant experience of the candidate.
- ◆ Official diploma and grade transcripts from previous degrees.
- ◆ Suitable applicants will be interviewed.

Completion studies

Students who have completed undergraduate studies in other topics and who lack the basic knowledge required for program may be accepted conditionally to graduate studies in the Department. This is dependent on the decision of the Departmental M.Sc. Committee and under the condition that the candidate completes the gap in knowledge by the end of the first year of studies. The committee will adjust a personal complementary study program according to the student's academic background and research subject requirements. Finishing the complementary studies with a minimal grade of 85 is a condition for continuing the graduate studies program in the Department.

Terms of continuing from first year to second year of studies:

- ◆ During the first semester, the student will be obligated to find a potential advisor from the members of the academic staff of the department and agree on a research subject. Advisor's agreement and announcement on readiness to advise the student in his thesis is a prerequisite for continuing to the second semester.
- ◆ Minimal final weighted grade of obligatory courses of the first year is 80.
- ◆ Submission of a thesis proposal before the beginning of the third semester.

Program Structure

The program covers a wide range of areas dealing with geology, geochemistry, marine geophysics and oceanography in the following topics: geophysics, mapping, remote sensing, geodynamics, marine and coastal sedimentology, paleoclimate and paleoceanography. The program reflects the interdisciplinary nature of the Charney School of Marine Sciences.

Program Makeup

The program consists of a thesis track (Track “A”) only and is spread over two years (excluding completion studies) and five days a week. Most of the obligatory courses can be completed during the first year and will be concentrated, if possible, to three days a week. A mandatory student cruise will be conducted during the first year. Data collected during the cruise will be used as test cases in the different courses.

The program is composed of 34 credits as detailed below:

- ◆ Core courses (obligatory) – 22 credits. As part of the obligatory courses, a student who would like to obtain an exemption from “Advanced mathematics for marine geosciences” (an additional 2 credits) can request an examination at the beginning of his or her studies.
- ◆ Elective courses – 12 credits to be chosen in accordance to the proposed research area. Additional courses may be chosen from those offered by the different faculties within the University of Haifa, the Inter-University Institute (IUI) in Eilat, the Technion and other universities in Israel and abroad. Thesis advisor’s approval for electives, as well as that of the head of the M.Sc. committee, is mandatory. A minimum of 8 credits from within the Department of Marine Geosciences is needed.
- ◆ Obligatory participation in the Student Research Cruise, Departmental and School-wide Seminars and Colloquium.
- ◆ As a condition for participating in the educational excursions and cruises, which are an integral part of the compulsory coursework, all student must present a medical authorization letter confirming their physical ability to participate in such event.

Final Grade Composition

- ◆ 30% - Courses work (including two seminar works)
- ◆ 40% - Research based thesis
- ◆ 30% - Thesis defense oral examination)

PhD in Marine geosciences

Candidates interested in doctoral studies may apply to the head of department or the relevant faculty member. Department pre-requisites are similar to the M.Sc. program. Formal application will be submitted to the Graduate Studies Authority.