

# TAKANON

For rules of M.Sc. and PhD. Studies please refer to page 7

## The Iby and Aladar Fleischman Faculty of Engineering

The Faculty of Engineering at Tel Aviv University has been operating as an independent entity since the 1971-72 academic year.

The Faculty trains its students to become active players in Israel's economy and industry - in the fields of technology in general and elite technology specifically, equipping them with tools for open-mindedness and professional flexibility. The Faculty's undergraduates receive comprehensive and thorough preparation in fields comprising the foundations of modern engineering in general, and Israel's specific needs in particular.

The Faculty's graduate programs focus on enhancing knowledge attained in undergraduate studies, enabling students to specialize in both basic and applied research.

The Faculty resides in the Wolfson Buildings, in the southeast part of the campus, Klausner Street, Ramat Aviv, Tel Aviv.

The offices of the Dean and the Administrative Deputy Dean are located in the Wolfson Building of Mechanical Engineering, room 200 (Phone: 03-6408736/8, Fax: 03-6407221).

The office of the Assistant to the Administrative Deputy Dean is located in the Wolfson Building of Mechanical Engineering, room 111 (Phone: 03-6406970).

The undergraduate students' office is located in the Wolfson Building of Mechanical Engineering, room 115. International students should revert to the contact information on the "contact us" page on the website.

Electrical and Electronic Engineering	03-6408547 / 03-6406200
Mechanical Engineering	03-6409419
Biomedical Engineering	03-6408489
Industrial Engineering	03-6408489
Materials Science and Engineering	03-6407037
Fax:	03-6406062

The graduate students' office and the office of the external studies program are located in the Wolfson Building of Mechanical Engineering, rooms 110, 112, 114, 116. International students should revert to the contact information on the "contact us" page on the website.

Phone: 03-640372, 03-6407329, 03-6405791

Fax for MSc students: 03-6406013

Fax for PhD students: 03-6406966

### **For our students' information**

The Faculty of Engineering uploads information from the Students' Manual, including courses and timetables, to its website: <https://en-engineering.tau.ac.il/>

## **The Faculty's Academic Institutions**

### **The Dean**

The Dean is the Faculty's top academic authority with regard to study contents, supervision over teaching, and implementation of the Faculty's Regulations and Laws. For an interview with the Dean please address a well-reasoned request to the Faculty office.

### **Faculty Council**

The Faculty Council consists of all Full Professors, Associate Professors and representatives of the Senior Lecturers and Lecturers at the Faculty. The Council is in charge of the study programs and teaching procedures at the Faculty.

### **Faculty Committee for the Undergraduate Curriculum**

The Committee consists of the Dean, the Heads of the undergraduate programs, and persons in charge of the service courses in Mathematics and Physics. The Committee is responsible for the undergraduate curriculums.

### **Program Committee for Teaching/Curriculum**

The Committee consists of the Head of the Undergraduate Program and representatives of the various departments. The Committee is responsible for the proper implementation of the curriculum and course contents and supervises their continual updating. It is also responsible for the quality of teaching. The Committee keeps in touch with the students regarding all issues associated with study contents and teaching.

### **Faculty Committee for Student Affairs**

The Committee is responsible for the Study Regulations and supervises their implementation. It also handles requests from students requiring special consideration due to deviation from the Regulations and approved curriculum. Members are representatives of the various undergraduate study programs.

### **Unit Committee for the MSc Program**

The Committee determines the criteria and procedures for admission to the MSc program, as well as the study Regulations, and ensures their implementation. It approves the appointment of supervisors and examiners for theses and final

projects, and handles requests from students requiring special consideration. Members are representatives of the departments offering MSc studies.

### **Unit Committee for Research Students**

The Committee determines the criteria and procedures for PhD studies, supplementing the instructions of the University Committee for PhD Studies, and ensures their implementation. In addition, it is responsible for admitting students based on requirements, approves the appointment of PhD supervisors, research proposal assessors and thesis reviewers. The Committee makes recommendations to the University PhD Committee to grant Doctor of Philosophy degrees. Members are representatives of the Faculty's various departments.

# Members of the Faculty's Academic Institutions

**Dean of the Faculty: Prof. Yossi Rosenwaks**

## Heads of Schools

Prof. Mark Shtaif – School of Electrical Engineering

Prof. Slava Krylov – School of Mechanical Engineering

## Heads of Departments

Prof. Shai Avidan – Dept. of Electrical Engineering – Systems

Prof. Jacob Scheur – Dept. of Electrical Engineering – Physical Electronics

Prof. Joachim Meyer – Dept. of Industrial Engineering

Prof. Uri Nevo – Dept. of Biomedical Engineering

Prof. Ilan Goldfarb – Dept. of Materials Science and Engineering

## Heads of Undergraduate and MSc Programs

Prof. Avishay Eyal – Electrical and Electronic Engineering Program

Prof. Alexander Liberzon – Mechanical Engineering Program

Prof. Natan Tzvi Shaked – Biomedical Engineering Program

Dr. Tal Raviv – Industrial Engineering Program

Prof. Amit Kohn – Materials Science and Engineering and Chemistry Program

Prof. Hadas Mamane – Environmental Engineering MSc Program

Dr. Ariel Ismach – Materials Science and Engineering MSc Program

## Faculty Committees

### Faculty Committee for Undergraduate Student Affairs

Prof. Arie Yeredor - Chair  
Prof. Avishay Eyal  
Prof. Amit Gefen  
Prof. Amit Kohn  
Prof. Alex Liberzon  
Dr. Tal Raviv  
Prof. Yoram Reich  
Pnina Efrati  
Varda Botvinik

### Unit Committee for MSc

Prof. Joseph Bukchin - Chair  
Prof. Tal Ellenbogen  
Prof. Amir Boag  
Prof. Avraham Seifert  
Prof. Evgeni Khmelnsky  
Prof. Tamir Tuller  
Dr. Ariel Ismach  
Prof. Abraham Kribus  
Varda Botvinik  
Orit Guterman

### Unit Committee for PhD

Prof. Zohar Yosibash - Chair  
Prof. Benny Applebaum - Deputy  
Prof. Irad Ben-Gal  
Prof. Hayit Greenspan  
Prof. Shachar Richter  
Prof. Yair Shokef  
Prof. Yosi Shacham  
Pnina Efrati  
Ziva Lipovetsky

**Undergraduate Admissions Committee**

Prof. Dana Ron – Chair  
1<sup>st</sup> semester  
Prof. Nahum Kiryati –  
Chair 2<sup>nd</sup> semester  
Prof. Joachim Meyer  
Dr. Brian Rosen  
Prof. Natan Tzvi Shaked  
Prof. Dov Sherman  
Pnina Efrati  
Varda Botvinik  
Vered Dvori  
Jennifer Gotliv

**In charge of discipline**

Prof. Amos Ullmann  
  
Prof. Anthony Weiss – Deputy  
Pnina Efrati

**In charge of service courses in Physics**

Prof. David Mendlovic

**Mathematics Committee**

Dr. Amir Natan –  
Chair  
Dr. Oswaldo Dieguez  
  
Prof, Eran Hanany  
Proof. Uri Nevo  
Prof. Shmuel Ryvkin

**School of Electrical Engineering****School Management**

Prof. Mark Shtaif –  
Chair  
Prof. Avishay Eyal  
Prof. Tal Ellenbogen  
Prof. Michael Margalio  
Prof. Boaz Patt-Shamir  
Prof. Jacob Scheur

**BSc Committee (School level)**

Prof. Avishay Eyal –  
Chair  
Prof. Guy Even  
Dr. Zachi Tamo  
Dr. Amir Natan  
  
Dr. Ofer Amrani  
Prof. Arie Ruzin  
Prof. Doron Shmilovitz

**MSc Committee (School level)**

Prof. Tal Ellenbogen –  
Chair  
Prof. Guy Even  
Dr. Pavel Ginzburg  
Prof. Mark Shtaif

**PhD Committee (School level)**

Prof. Boaz Patt-Shamir -  
Chair  
Prof. Benny Applebaum  
Prof. Yosi Shacham  
Prof. Mark Shtaif

**School of Mechanical Engineering****BSc Committee (School level)**

Prof. Alexander Liberzon – Chair  
Prof. Neima Brauner  
Prof. Yoram Reich  
Dr. Herman Haustein  
Prof. Lev Shemer

## **Faculty Departments**

### **Curriculum Committee Industrial Engineering**

Dr. Tal Raviv - Chair  
Dr. Dan Yamin  
Dr. Erez Shmueli

### **Curriculum Committee Biomedical Engineering**

Prof. Uri Nevo – Chair  
Dr. Noam Ben-Eliezer  
Prof. Natan Tzvi Shaked

### **Curriculum Committee Materials Science and Engineering**

Prof. Ilan Goldfarb – Chair  
Prof. Noam Eliaz  
Dr. Ariel Ismach  
Prof. Amit Kohn

# **MSc and PhD studies**

## **The Zandman-Slaner Graduate School of Engineering**

### **The MSc Program**

The purpose of MSc studies is to expand students' knowledge in their fields of interest, and enable them to specialize in these areas, either as practicing professionals or as theoreticians and researchers.

**Applicants to MSc studies must be graduates of a BSc program in Engineering and/or in the Exact Sciences, with a minimum average grade of B.**

**MSc programs are offered in the Faculty's Schools and Departments, as specified below.**

**Study programs are based on semesters and founded upon the principle of 'accumulation' – students accumulate credit points from the courses they take. This system is designed for maximum flexibility in adapting the pace of studies to each student's abilities and possibilities.**

### **School of Electrical Engineering**

#### **Communication**

Information theory, communication systems, coding and modulation methods, error correction coding theory, random processes, data and signal compression

#### **Signal Processing**

Digital signal processing, identifying and evaluating parameters, processing speech signals, signals and radar systems, navigation and geolocation, statistical signal processing, non-linear filtering, neural networks, processing biological signals

#### **Image Processing and Computer Vision**

Image processing, computational imaging, image and video databases, acquisition and analysis of medical images, video processing and analysis, computer vision, shape analysis, shape changes and development

#### **Control**

Digital control, optimal control and evaluation, control via networks, controlling switched systems, controlling time-delay systems and distributed systems, control in power electronics, fuzzy logic and fuzzy systems

### **Computers**

Algorithms and optimization, distributed and parallel computing, computer communication networks, internet, computer architecture, information security and cryptography, neural networks

### **Power Systems**

Power electronics circuits, adaptive power processing systems, electromagnetic and piezoelectric transducers, renewable sources of energy, photovoltaic systems, high frequency switched rectifiers, power and strong current systems, lightning protection systems, power quality

### **Micro- and Nanoelectronics – Devices and Materials**

Microelectronic and optoelectronic devices, VLSI, MEMS devices, MOEMS, BioMEMS, Lab-on-chip, biosensors, characterization of electronic materials, thin films and ferroelectric materials, semiconductor sensors and radiation damage, micro-batteries

### **Optoelectronics – Devices and Systems**

Communication, fibers, sensors; optoelectronics for computers; identifying shapes; laser optics and frequency stabilization; optoelectronic devices; integral optics; nonlinear optics

### **Electromagnetic Waves - Sources and Expansion**

High-power microwave sources; free electronic lasers and masers and cyclotron resonance; electromagnetic systems; antennas, wave expansion and scattering; remote sensing and radar imaging; electromagnetism in integrated circuits; underwater acoustics

### **Plasma Physics**

Processes in electrical discharging, materials processing and plasma coatings; nanoparticles.

**Graduates receive an MSc in Electrical and Electronic Engineering.**

## **School of Mechanical Engineering**

### **Fluid Mechanics**

Aerodynamics, hydrodynamics, turbulence, gas dynamics, water waves, grainy materials, biomedical flows, flow in MEMS systems, two-phase flow, computational fluid mechanics, process dynamics and control, active flow control

### **Mechanics of Solids**

Composite materials, viscoelastic, plastic, piezoelectric and porous materials, fatigue and fractures, buckling, adhesion, experimental and computational mechanics, finite elements, wave expansion, MEMS, optimal structural design, biomechanics

### **Heat and Energy Transfer**

Cooling electronic equipment, heat and mass transfer in crystal growth, convective heat transfer, heat transfer thru radiation, energy conversion in miniature motors, mass and heat transfer in two-phase flow

### **Environment**

Renewable energy, wastewater treatment, cleaning contaminated land, advanced water decontamination treatments, combined energy systems, desalination and recycling of water, nanoparticles in water systems, contaminant dispersion in the atmosphere, dynamics of marine ecosystems, contaminant transport in groundwater

### **Systems**

Robotics (including robotic sensing and vision), Artificial Intelligence, soft computing techniques in system design and control, computer-aided design (CAD), computer-aided graphics, machine theory, mechanical design, design methods, integrated mechanical systems, multipurpose optimization, combinatorial models in engineering

**Graduates receive an MSc in Mechanical Engineering.**

### **Environmental Engineering Program**

The School of Mechanical engineering offers a separate MSc program in Environmental Engineering, with its own admission requirements.

The past decade has seen a growing demand for professionals with an engineering background and suitable training for this emerging area, who can contribute to both the R&D of new technologies, and the implementation of these technologies in industry.

The program's highly varied fields of research and study include: renewable energy (sun, wind, biofuels), energy storage; air pollution and controlling organic, inorganic and particles emissions; carbon dioxide traps; treating municipal and industrial wastewater; treating and recycling water, desalinating brackish water and seawater; solid waste treatment and control; remediation of contaminated soil; separation processes based on substance transport; risk assessment in industrial processes; dangers of ionizing and nonionizing radiation; dynamics of sea waves and currents; turbulent flows in the atmosphere; transport of pollutants in porous mediums, groundwater and surface water, and dispersion of pollutants in the atmosphere;

transport of fuels (in gas and fluid forms) and its environmental impact; conveyance of grainy solids in a suspension; rapid granular flows

**Graduates receive an MSc in Environmental Engineering.**

### **Department of Biomedical Engineering**

Bioengineering systems and their biomedical applications, principles of medical measurements, biomedical instruments, biomaterials, tissue engineering, biomechanics, flow in biological systems, the cardiovascular system, the respiratory system, the reproductive system, digital processing of physiological signals, electro-neural systems, medical information and communication systems. Digital processing of medical images, sensory communication in humans, visual systems and understanding color, developing algorithms inspired by visual mechanisms, disorders in the auditory system, mathematical models of physiological systems, lasers and optics in medicine – diagnostic and surgical applications, biological converters, activation of drug carriers

**Graduates receive an MSc in Biomedical Engineering.**

### **Department of Industrial Engineering**

The Department of Industrial Engineering offers a choice of three different specializations:

#### **Business Analytics**

Business Analytics combines information technology with management and operations to maximize utilization of the extensive information collected in the information systems of organizations for decision-making and prediction purposes. This enables organizations to formulate better business strategies and improve their financial and operational performance.

Fields of study: data science, big data technologies, data mining, statistical machine learning, data visualization, information security, information theory applications and more

#### **Human Aspects of Systems**

Analyzing and designing organizational, financial and technological systems, taking into account the people who use them. Studies and research focus on combining tools from the social sciences (such as economics, psychology, social geography, cognitive science) with tools and methods from industrial engineering, other areas of engineering and computer science. The program aims to train professionals and researchers who have the knowledge and skills to design, manage and study systems that have a behavioral aspect in their operation.

Fields of study: human-computer interaction, information privacy, decision-making, models of human performance, game theory applications, design and evaluation of human-computer interfaces, human-robot interaction and more

### **Operations and Logistics in the Digital Age**

New challenges and advanced technology in the core areas of Industrial Engineering. Operations and logistics deal with identifying, analyzing and optimizing processes in manufacturing corporations and service organizations. These include areas such as: organization and methods, managing supply chains, managing purchases and stocks, shipping and transportation.

Studies in this specialization provide knowledge and decision-making tools to tackle challenges faced by engineers, managers and R&D experts.

Fields of study: management of supply chains, operating transport systems, service systems, designing production lines, task-assignment and timing, managing distribution centers and more

**Graduates receive an MSc in Industrial Engineering.**

**Graduates of Industrial Engineering with Management studies receive an MSc in Industrial Engineering and Management.**

**Graduates of the track combining Industrial Engineering with Business**

**Administration receive an MSc in Industrial Engineering and an MBA from the School of Management.**

### **Department of Materials Science and Engineering**

Biomaterials, materials in advanced energy systems, bioelectronics, smart bio-composite materials, nanoelectronics and molecular electronics, bio-ferrography, studying surfaces, self-construction and self-arrangement of functional nanostructures and thin films, morphological stability of nanostructures, scanning probe microscopy, design and study of multipurpose oxides (such as and ferroelectric and multiferroic materials and oxides of transition metals), applying computational methods to the study of materials in general and materials for energy systems in particular, developing computational methods and computer programs for the study of materials, corrosion, electrochemical coatings, failure analysis

**Graduates receive an MSc in Materials Science and Engineering.**

### **Direct track to the MSc Degree**

The Faculty of Engineering offers a direct track to the MSc degree. Outstanding students who have completed their second year of studies for a BSc in engineering can be admitted to this track. Details are available at the Students' Office.

## **External Studies in Engineering – Enrichment**

The Faculty of Engineering offers a program of External Studies in Engineering – Enrichment. Through this program, some BSc and MSc courses are open to qualified engineers and persons with a BSc in the Exact Sciences employed in industry and science institutions.

Students may take specific courses or attend the Study Clusters program. The aim of the External Studies program is to enable engineers from industry to learn more about various fields of engineering, without compelling them to become regular students, while accumulating credit points for an MSc in Engineering.

For full details on the curriculum in these tracks please see the chapter on 'External Studies in Engineering – Enrichment'.

## **PhD studies**

### **Studies for the PHD degree**

For General Regulations for PhD Studies see the General Introduction to this Manual. In addition, the Faculty Regulations document is available at the Graduate School Office. For international students, please be in touch with the international office, whose information is on the “contact us” page on the website for each of the Schools and Departments.

### **Direct track to the PhD**

The Faculty of Engineering offers a direct track to the PhD degree. MSc students who meet the requirements set in the Regulations may be admitted to this track. See the General Introduction to this Manual. In addition, the Faculty Regulations document is available at the Graduate School Office.

Regulations for PhD studies: (only in Hebrew-please contact the relevant office for assistance)

Directives of the Research Students Department:

<http://www.tau.ac.il/acad-sec/phd/phd.index.htm>

Directives of the unit-level PhD Committee:

<http://www.eng.tau.ac.il/yedion/takanon3.pdf>

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## **Regulations for MSc Studies**

**The MSc program at TAU's Faculty of Engineering aims to provide excellent students with an opportunity for advanced high-level studies in engineering.**

**MSc candidates are required to take courses in advanced areas of the engineering sciences, conduct research and report their work in a scientific essay, or conduct a comprehensive engineering project.**

**MSc programs were processed and are regularly updated by the faculty members and researchers of the Faculty of Engineering, with the purpose of training engineers for the R&D endeavors of today's academia and industry.**

### **Definitions**

#### **School/Department**

An entity uniting faculty members with the same research interests, recognized by the Faculty as responsible for instructing students for advanced degrees in specific fields of research, and authorized to determine their eligibility for an MSc.

#### **Unit-level MSc Committee**

The committee handles MSc matters on behalf of the Council of the Faculty of Engineering. Heretofore: 'Unit Committee'.

#### **Academic coordinator of the MSc program**

The Head of the School/Department or the person appointed by him/her as the one in charge of the School's/Department's MSc program (including academic contents, admission requirements, complementary studies requirements, approval of appointments of supervisors and examiners for theses and final projects etc.).

#### **Research thesis**

The aim of the MSc thesis is to train the student in research methods - including critical literature surveys, performing research of the scope acceptable at the Faculty and at a proper academic level, and submitting a paper on the topic of research to the Unit Committee. Research can be either theoretical or experimental, basic or applied, while emphasizing the analytical scientific approach and contribution to the advancement of existing understanding and/or knowledge (see details below).

#### **Final project**

The aim of the project is to train the student in design methods and/or engineering research - including critical literature surveys, of the scope acceptable at the Faculty and at a proper academic level, and submitting an essay on the project to the project supervisor. The project can focus on either engineering design or hypothesis

investigation, while emphasizing the analytical scientific approach and contribution to the advancement of existing understanding and/or knowledge. Supervision will be either personal or as part of the Research Seminar course, as determined by the School/Department (see details below).

#### **Academic advisor**

**Academic advisors** are ready to assist MSc students in all units, representing each unit's areas of specialization. For each specialization, please contact the relevant professor/office.

#### **Permanent supervisor**

A faculty member authorized to instruct the student in his/her MSc thesis, guide him/her with regard to the Faculty's academic procedures, and approve his/her study program. Study programs of students in the research track will be approved by the supervisor following the submission of a research proposal. At this stage the supervisor may require the student to take additional courses.

#### **Final project supervisor**

A researcher or engineer from the relevant industry authorized to train the student in methods of engineering design, research and development, as noted in the definition of Final Project. Final project supervisors can be senior faculty members at Israeli institutions of higher education, or suitable persons from industry who are engineers with at least a Research MSc degree, whose appointment has been approved by the academic coordinator for the relevant MSc program. If the final project supervisor is not a faculty member at the Faculty of Engineering, a supporting supervisor must also be appointed for the student.

#### **Supporting supervisor**

A faculty member from the School/Department granting the degree, authorized to instruct the MSc student with regard to the Faculty's academic procedures, and approve his/her study program, when the student is carrying out a final project under a supervisor who is not a faculty member at the Faculty.

#### **Credit point**

The unit for measuring the academic weight of a course. The student accumulates credit points based on the number of courses (and the number of academic hours in each course) he/she has passed. Usually, in MSc studies at the Faculty of Engineering, one lecture a week equals one credit point.

#### **Mandatory course**

A course defined by the School and/or Department as a course students must pass in order to qualify for an MSc from that particular School and/or Department. Mandatory courses are usually fundamental courses in mathematics, physics and/or the engineering sciences.

**Passing/failing a course**

The Faculty's grading method is based on the 0-100 scale.

A grade of 60 and over is a passing grade. A grade of 59 and under is a failing grade. Passing a course depends on receiving a minimum grade of 60 on the exam, unless the teacher has announced otherwise in the information page published at the beginning of the course or in the syllabus.

**Accumulative studies**

The first phase of MSc studies at the Faculty of Engineering. During this phase the student accumulates credit points for the MSc. The annual curriculum is approved by a temporary supervisor.

**Studies in the Regular Student status**

The second phase of MSc studies at the Faculty of Engineering. During this phase the student completes the requirements for receiving an MSc degree, including courses and a thesis or final project. Fulltime students are admitted to regular student status immediately upon beginning their MSc studies.

**Fulltime student**

A student dedicating all his/her time to MSc studies and writing a thesis at the university.

**Complementary studies**

A cluster of BSc courses in the relevant field of study, which MSc candidates who are graduates of an engineering faculty but are switching to a different field, as well as graduates of the exact sciences or engineering colleges, are required to complete. Admission to MSc studies depends on passing the complementary courses determined by the School/Department, based on the criteria defined by the School/Department.

## **Study structure and the awarded degree**

The MSc degree is granted by the Faculty of Engineering to candidates who have demonstrated suitable academic achievements and fulfilled the requirements specified in the Regulations of the Faculty and the University, including passing courses and completing research or final projects within the designated timeframe. Candidates who have demonstrated outstanding achievements in their studies and research will receive the degree with honors or exceptional honors according to the criteria specified below.

### **Fields of study**

The Faculty offers MSc study programs in the following areas:

Electrical Engineering  
Mechanical Engineering  
Environmental Engineering program  
Biomedical Engineering  
Industrial Engineering  
Materials Science and Engineering Dept.

The curriculum of each field is provided in detail in the handbook of the relevant School/Department. The handbooks also contain any special requirements, in addition to those specified below.

### **Study tracks**

The Faculty offers a choice of two tracks for the MSc:

#### **Research track with thesis**

This track is designed for students who wish to be trained in research methods and write a scientific thesis. It is principally suited for students planning to continue their studies and obtain a PhD.

#### **Final project track**

This track is designed for students who wish to expand and update their professional knowledge, without writing an extensive research thesis.

The track is intended for part-time students only. It is open to individuals with a BSc from a faculty of engineering, and in certain units also to those with a BSc in the exact sciences or life sciences, subject to passing designated complementary courses. Units admitting candidates with a BSc in the exact sciences or life sciences publish information regarding the non-engineering disciplines to which the track is open.

*Individuals who have completed an MSc in the final project track at the Faculty of Engineering, and wish to apply for admission to the PhD program, must meet the requirements set by TAU for students who had completed an MSc degree without a*

*thesis at other universities. Specifically, such candidates are required to write an MSc thesis, as customary at the Faculty.*

MSc requirements in each track:

Study track	Final essay	Hours	Credits	Total credits
Research track	Thesis	12 semester hrs. <sup>1</sup>	24	24
Final project	Project	3 credits <sup>2</sup>	36	39

**The School/Department may set higher requirements regarding the number of credit points and/or the additional prerequisites specified above.**

Course Regulations are specified in the relevant section of this Manual. It should be emphasized that the MSc course record must meet the mandatory requirements of the relevant School/Department, and the minimum overall grade point average must be 75 (see section 3.5).

Requirements regarding the thesis or project and the exams on the thesis or project are specified in the relevant sections. It is advisable for students opting for the thesis track to find a permanent supervisor immediately upon admission to the Faculty, and in any case no later than the end of the first semester of studies in the Regular Student status. This, in order to determine, together with the supervisor, the curriculum most suitable for the student's research program.

### **Departmental seminars**

Students are required to participate in Departmental/School seminars – 14 seminars in the research track and 8 seminars in the final project track. Study units may raise the requirements regarding the number of seminars and the timetable.

Students may participate in seminars of other departments and faculties, on topics related to their field of research, up to a maximum of 50% of the seminar requirement – up to 7 seminars (out of 14) in the research track and 4 (out of 8) in the project track. Participation in seminars at other departments/faculties will be permitted, provided that presence at these seminars is documented and approved in advance by the study unit's seminar coordinator and the student's supervisor.

*Scientific conferences*<sup>3</sup> - a student who intends to participate in a scientific conference will apply in advance to the seminar coordinator and to his/her supervisor for credit for seminar hours. The coordinator and supervisor will decide together how many hours the student will be credited for. Each case will be considered according to its specific details.

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<sup>1</sup> Thesis supervision (for calculating tuition fee)

<sup>2</sup> Without semester hours (for calculating tuition fee)

<sup>3</sup> Electrical Engineering students – no credits replacing seminar hours are granted for participation in scientific conferences.

## **Changing the study track**

A final project student may ask to be transferred to the research track, namely, to expand the scope of his/her work to the scope of a thesis, under the supervision of the current project supervisor – only if the supervisor is a faculty member at the Faculty of Engineering. The request must be approved by both the supervisor and the unit committee.

A thesis track student may ask to be transferred to the final project track, namely, to reduce the scope of his/her research to the scope of a final project, under the supervision of the current thesis supervisor. The request must be approved by both the supervisor and the unit committee. Likewise, a supervisor may ask the unit committee, after notifying the student, to reduce the thesis to the scope of a final project, if the student has shown no research initiative or innovation, or has not progressed sufficiently in his/her work. In either case, when the thesis is reduced to a final project, the student must complete the credit points required for the final project track.

A research track student admitted directly in the status of Regular Student, who has not submitted a consent form from a permanent supervisor or a description of the thesis topic within one semester of admission, will be transferred to the final project track.

## **Phases of the study program**

MSc studies at the Faculty of Engineering generally include two phases:

**First** – accumulative studies

**Second** – Regular Student status. Fulltime students are admitted directly to the Regular Student phase. MSc candidates required to take supplementary courses if needed.

### **Accumulative studies phase**

The first phase of studies (for students who are not studying fulltime) is accumulative studies, during which the student accumulates credit points for the MSc. At this point annual study programs are approved by a temporary or supporting supervisor.

Students interested in the research track may find a thesis supervisor and begin to work on their research while still in the accumulative phase.

*The accumulative phase must be completed within a maximum of 3 academic years, during which the student must take at least 3 engineering courses every year, and pass at least 2 of them. If a student has exceeded the allotted timeframe or taken*

*less than 3 courses a year, his/her studies will be terminated, as stated in the section on the discontinuation of studies.*

*A student in the accumulative phase must pass the School/Department's mandatory courses (including re-enrollment following failure, if needed) no later than the end of the fourth semester of studies. Therefore, it is advisable to take all mandatory courses during the first year of studies, so that any failure may be corrected by the end of the second year.*

**In each study track the student must complete at least 25% of the program while in the Regular Student status.**

Requirements for admission to the Regular Student phase in the research track:

Finding a permanent supervisor

Accumulating a maximum of 18 credit points

Requirements for admission to the Regular Student phase in the project track:

Accumulating a maximum of 27 credit points

Note: Students must obtain a minimum average grade of 70, or 80 for students who intend to study fulltime. Students must also pass all mandatory courses of the relevant School/Department.

A student in the accumulative phase who changes to fulltime studies is granted a Regular Student status.

*Tuition* – during the accumulative phase students pay tuition according to the number of hours of study, based on the university's customary rate for Master's degree studies, without the minimum 50% annual tuition requirement, or mandatory transfer of fees to the following year. Once the student attains the status of Regular Student, all courses taken in the accumulative phase are recognized, as well as tuition fees paid for these courses.

Students who have successfully completed the accumulative studies phase should apply to the Graduate Students' Office for Regular Student status in one of the study tracks – research or final project.

A student who qualifies for the Regular Student status but has not applied, is granted Regular Student status in the final project track (by default). If the student does not qualify (i.e., graduates of faculties not recognized for this track such as faculties other than science or engineering related) and/or students who have not found a supervisor, his/her studies are terminated.

### **Studies in the Regular Student status**

In the second phase of MSc studies, the Regular Student status, students must complete the requirements for receiving the MSc degree in the chosen track within a maximum period of 2 years.

Fulltime students who began their studies in the Faculty directly in the Regular Student' status, must complete a minimum of 12 credit points in courses, at a minimum grade point average of 80, and pass all mandatory courses required by the School/Department – all during their first year of studies. They must also submit a request for appointing a permanent supervisor for their thesis to the Graduate Students Office as early as possible, but no later than one semester after commencing their studies.

### **Registration, admission, complementary studies and recognition of previous studies**

Candidates for MSc studies at the Faculty of Engineering must meet TAU's registration and admission requirements, as published before every academic year by the Registry Center in the Information for Candidates Manual. The minimum requirements for being considered as a candidate by the institutions of the Faculty of Engineering are as follows:

*BSc in Engineering or the Exact Sciences from a recognized institution of higher education*

*Weighted average grade of 80 in BSc studies (this is a registration requirement that does not guarantee admission)*

*The minimum weighted average grade for admission is determined separately by each unit, and may vary from one year to the next. Admission also depends on the BSc program from which the candidate has graduated, and on the academic knowledge he/she has accumulated.*

*A relatively high ranking in the BSc class (candidates who are not graduates of the TAU's Faculty of Engineering must provide documentation of their ranking in their BSc class)*

*Schools/Departments may set their own additional or higher admission requirements.*

*In exceptional cases the unit's admission committee discusses the applications of students who do not meet the prerequisites for admission. For candidates whose grade point average is lower than the requirement but not less than 75, the committee may take additional aspects into consideration. In such cases, admission*

*will be as follows: accumulative studies in a special conditional status for a maximum period of two years, or, for fulltime MSc students, in a conditional status for a maximum period of one year.*

*Schools/Departments may set their own higher requirements.*

*The committee may define a special study program or prerequisites or both, which the candidate must complete within the set period of time. Once the student fulfills the requirements, he/she can go on to MSc studies in the Regular Student status.*

*A student who still needs to pass one exam to complete the BSc may be admitted in the 'not regular' status for a maximum of one year, based on a special decision of the unit's MSc committee.*

### **Complementary studies**

Candidates with a BSc from engineering faculties at recognized institutions of higher education, whose degree is not equivalent to a BSc from TAU in the same field, or candidates changing their field of study, are required to take complementary courses. Their admission to the MSc program – either to the accumulative phase or to the Regular Student status – depends on successful completion of the determined complementary program.

The complementary studies programs and prerequisites of each School/Department are specified in the Students' Manual, or may be obtained at the Graduate Students' Office. When a personal complementary studies program is formulated for a specific student, it must be authorized by his/her supervisor and submitted to the academic coordinator of the MSc program at the relevant unit<sup>4</sup>. The academic coordinator at the unit granting the MSc can reduce the number of required complementary courses for outstanding students and graduates of unique programs (e.g. Talpiot), who meet the admission requirements. For a list of reduced requirements see the relevant unit's website.

Complementary courses must be completed within two years of admission to the complementary program. Schools/Departments may require more extensive complementary programs, based on considerations of the supervisor or academic coordinator of MSc studies. To pass the complementary program a student must

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<sup>4</sup> **The Departments of Biomedical Engineering and Materials Science and Engineering** also accept applications from graduates of other disciplines of engineering, exact sciences, life sciences and medicine. The Department of Biomedical Engineering requires complementary studies from candidates who are not graduates of biomedical engineering. Once admitted, the candidate receives a list of complementary courses and a temporary supervisor is appointed.

obtain a minimum grade of 70 in each course and a minimum average grade of 80 in all courses.<sup>5</sup>

Final failure in two consecutive registrations to a specific complementary course results in termination of studies.

If a candidate has not fulfilled the complementary studies requirements noted above within two years of receiving the required program, his/her studies at the Faculty are terminated.

Candidates must pass at least one complementary course by the end of the first two semesters of study.

Courses required as complementary courses do not count for credit points for the MSc.

A candidate who has successfully completed his/her complementary program may submit an application for studies at the Faculty at the Graduate Students Office. Such applicants are admitted to either the accumulative phase or Regular Student status, as noted in section 3.4.

Based on the supervisor's recommendation and the unit committee's approval, the status of a fulltime student required to take complementary courses may be changed from 'complementary studies' to 'conditional regular student'.

## **Simultaneous BSc and MSc studies**

### **Direct track to the MSc degree**

The Faculty of Engineering offers a direct track to the MSc, specifically for outstanding BSc students studying at TAU. Students in this track may obtain both a BSc and an MSc in five years of study. Graduates of the track may go on to a PhD in engineering or seek careers in industry as experts in their fields.

The direct track allows only fulltime studies in the research (thesis) track. Students must fulfill all academic requirements defined by the relevant School/Department.

Procedures of registration and admission to the program are conducted toward the end of the 7<sup>th</sup> semester of BSc studies. The students are admitted to the MSc program in 'non-regular' status, while continuing their BSc studies.

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<sup>5</sup> Schools/Departments may raise their requirements.

Upon receiving the BSc degree, direct track students are admitted to the Regular Student phase in their MSc studies. They must complete all academic requirements for the MSc within 3 semesters of admission to the MSc program.

### **Registering for MSc studies while studying for the BSc**

A BSc student at the Faculty of Engineering may register for MSc studies and enroll in a maximum of 2 MSc courses during his/her last semester of BSc studies, providing that his/her accumulated grade point average is at least 85, and he/she ranks high in his/her class.

Such students are admitted to the accumulative studies phase. To continue their MSc studies they must complete the BSc degree within a maximum of two semesters from admission to the MSc program.

### **Recognition of previous studies**

A student admitted to the MSc program may be exempted from one or more courses if, as an undergraduate, he/she has taken a relevant graduate course at the TAU Faculty of Engineering or at another recognized institution, providing no academic degree was awarded for this course in the past.

A course taken at the TAU Faculty of Engineering (not in in the framework of the External Studies program), or at another institution, will be considered of equal academic value for the purpose of exemption, provided that:

*The course has been approved as relevant by the supervisor*

*The student received a minimum grade of 75.*

*The student took the course no more than 5 years before applying for exemption.*

*The course has been recognized as academically equivalent by the academic coordinator of the MSc program at the relevant School/Department, based on the status of the institution in which the student had studied, the syllabus, the number of hours and the calendar year in which the course was taken.*

*MSc courses taken at the TAU Faculty of Engineering during undergraduate studies, and for which an exemption has been granted based on criteria a & c above, are included in the grade weighting of the MSc studies. For courses taken in other recognized institutions, credit points are granted without a grade.*

*For courses taken as part of the External Studies program of the Faculty of Engineering – see External Studies Regulations.*

The studies quota required of a student who has been exempted on the basis of previous studies at another recognized university:

Research Track: at least half of the hours required for the MSc, in addition to the thesis

Project Track: at least two thirds of the hours required for the MSc, in addition to the final project

In any discussion regarding the renewal of academic studies or admission to the MSc program, the university's statute of limitation will be applied to recognition of previous studies (see the section on 'recognizing previous studies' in the TAU Directives).

# The Course of MSc Studies

## Courses

### **Direct track to the MSc**

A message will be sent to students before the beginning of the academic year, informing them of registration dates. Students are invited to meet with academic counselors to talk about the study program and about choosing a supervisor for their thesis. For international students, please revert back to the international office of the Faculty for assistance.

The study programs appear on the Faculty's website, including all courses offered by the various Schools/Departments, lecture times and locations and names of teachers. The relevant prerequisites and the number of semester hours and credit points are listed next to every course.

Registration for courses is conducted online, through a bidding procedure. Registration for courses from other faculties is conducted through the Graduate School Office.

Students may register after arranging for payment of tuition fees.

Changes in registration (enrollment and cancellation) may be made during the first two weeks of each semester.

In case of late registration, students are responsible for making up the materials they have missed on their own.

To cancel registration for a course students must notify the Graduate School Office in writing by the end of the second week of studies. A student who does not inform the office of his/her intention in writing will be considered to have taken the course and will receive the grade of 'not tested' (260).

A student who is on reserve duty during registration time should notify the office in advance, in order to make other arrangements for registration and maintain his rights.

### ***Languages of study***

In general, the languages of study in the MSc program are Hebrew and English. Courses taught in English are marked accordingly in the Students' Manual.

A lecturer may decide to give his/her course in English even if the course is not marked accordingly (specifically if there is a student in the course who does not speak Hebrew). A note to this effect will be published as early as possible, and no later than the first week of studies.

Even if the course is given in English, students may ask questions in Hebrew during the lectures and write exams in Hebrew.

### ***Recognizing courses outside the curriculum of the School/Department***

Students may enroll in a maximum of three courses outside the curriculum. These must be approved by either the permanent supervisor or a representative of the study unit in the unit committee. The courses must be relevant to the study program or to the student's research.

Courses outside the curriculum are credited and weighted as in their own departments, and may count for a maximum of 3 credit points.

### ***Equivalent-level courses from BSc studies***

Selected courses from the Faculty's BSc program, defined as 'equivalent-level courses', can be approved as courses recognized for MSc studies, provided the student did not take the specific course, or a similar course, during his/her undergraduate studies.

Equivalent-level courses may count for a maximum of 3 credit points.

Equivalent-level courses may be recognized for MSc studies as follows:

**Research track:** a maximum of 3 courses totaling 9 credit points. A 4<sup>th</sup> course may be approved by the unit's MSc teaching committee (up to 4 courses totaling 12 credit points).

**Project track:** up to 4 courses totaling 12 credit points.

Study units may reduce the number of permitted credit points. See the relevant unit's study program.

### ***The Scientific Writing in English course***

The Scientific Writing in English course is given by the Foreign Languages Unit. No credit points or grades are granted for this course. A student completing the course receives the 210 grade – 'has completed the requirement'.

The course is intended for PhD students. MSc students in the research track may enroll on a vacancy basis.

MSc students who took the course before or during the 2011-2012 academic year will receive credit – 2 credit points and a grade.

### ***Re-enrollment in a course***

Re-enrollment is approved in the following cases:

The student has taken and passed the course but wishes to re-enroll in order to improve his/her grade. In this case, the grade taken into account for credit points and weighted average is the last grade. *Re-enrollment for the purpose of improving a grade is approved only once, for one course, during the entire course of MSc studies.*

A student who has failed a course may re-enroll only once, at the closest time possible.

Repeating a course (adaptation for students returning from reserve duty).

A student called to reserve duty who decides not to freeze his studies, but cannot actively participate in all courses, may repeat the courses free of charge provided he has not taken the exams, and the same or equivalent (academically approved) courses are offered later on in his studies. Such students are exempt from tuition for the repeated courses (including during summer studies). If they take a different course in the summer they are charged regular tuition and not a summer tuition rate.

### ***Exams and grades***

An exam is held for every course at the end of the semester, on all materials studied in the course. All exams are concentrated in a period of three to four weeks. Exam timetables are published in the Faculty's Manual. Students must check the timetables of their courses, and make sure that exams times do not coincide.

Students may take exams provided that:

*Their name appears in the list of students entitled to take the exam, approved by the teacher of the course.*

*They have fulfilled all academic requirements of the course, and there is absolutely no academic obstacle barring them from taking the exam.*

Exams take place on one date only. **MSc programs do not offer a second examination date.**

In equivalent-level courses BSc regulations apply.

In exceptional cases exams may be replaced by essays, depending on approval of the Head of the School/Department. In courses requiring papers, the paper must be submitted no later than two months after the end of the semester.

In general, exams on courses in the MSc curriculum are written exams. In exceptional cases, approved in advance by the unit committee, oral exams may be held. The unit committee determines the criteria for every oral exam. Oral exams are conducted by two teachers: the teacher of the course and another teacher appointed by the Head of the School/Department in consultation with the teacher of the course. The results of oral exams may not be appealed.

Students unable to take an exam or submit an essay for a specific course for reasons found to be justified by the unit committee (e.g. reserve duty, hospitalization), may take the exam or submit the paper on a 'special date'. Students must apply for approval of 'special date' exams through the office.

Grades are posted on the Faculty website. Students must check their grades shortly after they appear. Exam notebooks are kept for one semester only, and then shredded.

*Every lecturer determines the requirements for passing his/her course. Lecturers must indicate the precise requirements for the grade composition and for passing the course in advance and in the course syllabus.*

A student who has failed a course must repeat it in the following academic year. If the course is not offered in the following year, the student must apply for permission from the unit committee to take an alternative course, in order to correct the previous year's failure.

Every student's average semester grade and accumulative average are calculated at the end of every semester. When a student fails a course and later corrects the grade by repeating the course, the failing grade is not included in the accumulated average and does not appear in the final record he/she receives when completing the degree.

If a student has failed two courses his/her studies at the Faculty are terminated.

### ***Course and grade records***

Every student's personal info on the TAU website provides a printout listing all courses and grades, as recorded in the university's database. By checking this printout regularly every semester students can follow their records and discover any mistakes. In case of suspected errors, students should notify the office as soon as possible. It must be remembered that exam notebooks are kept for only one semester, so that errors in grades cannot be verified at a later date.

### ***Entitlement to special exam dates***

Students are entitled to special exam dates or other special arrangements in the following cases:

*Students on reserve duty:*

*A student who has missed an exam due to reserve duty on the day of the exam may take the exam on a specially appointed date.*

*Reserve duty of at least 7 consecutive days, with an exam date within 7 days of discharge.*

*Active reserve duty of 21 or more consecutive days in accumulation or 10 consecutive days during the semester, with an exam date within 14 days of discharge.*

*A call to reserve duty of 3 days or less - if the exam takes place at the Faculty on one of these days, the coordinator for students on reserve duty, the assistant to the administrative deputy to the Dean for student and teaching affairs will convene to decide whether the student falls within the regulations for special exam.*

*University Regulations:*

<http://www.tau.ac.il/tau-rules/15-1.pdf> (In Hebrew only)

*The student was in hospital on the day of the exam.*

*Adaptations for pregnant students and students who have given birth – University Regulations:*

<http://www.tau.ac.il/tau-rules/15-2.pdf> (In Hebrew only)

The student's first-degree relative (parent, sibling, spouse, and child) passed away during the two weeks preceding the exam.

The unit committee discusses requests for special exam dates due to reserve duty, hospitalization and giving birth, subject to submitting an application with the appropriate documentation.

Specifically, students on reserve duty must include the following documents: Form 3021 or Form 3010 or a computer printout from the City Officer. Only these forms are considered proof of reserve duty. A student called to 1-day reserve duty on the day of an exam must present Form 510 signed by the military unit's commander, as well as the call to duty order or its certified photocopy, at the Graduate Students Office. Without a call to reserve duty order the student will not receive approval for a special exam date.

***Appealing grades***

A student who wishes to appeal a grade will do so within two weeks of the day the grade was posted, or at any other time determined by the teacher.

The appeal must be submitted to the office in a brief letter, objectively specifying the student's claims.

All exam notebooks (with the exception of confidential exams) are scanned and uploaded to the Faculty website.

All students who wish to do so may see their exams on the Faculty website.

If the exam notebook has not been scanned, the teacher must allow the student to see his/her exam notebook before filing an appeal. If following the appeal the teacher decides to either raise or lower the student's grade, he/she will notify the office and the grade will be corrected.

Repeated appeals will not be accepted. Appeals that cannot be discussed for technical reasons will be denied.

# The Course of MSc Studies

## The thesis

### *The supervisor's role*

Thesis work is conducted under the guidance of a permanent supervisor. The supervisor is a faculty member who instructs the student throughout his/her research and studies, operating as a link between the student, the unit committee and other faculty institutions in all matters related to MSc studies.

### *Appointing a supervisor*

A permanent thesis supervisor may be a faculty member at the Faculty of Engineering in the regular track, at the minimum rank of Lecturer, who has been asked by the student to act as his/her permanent supervisor, has agreed to do so and received a recommendation from the Head of the School/Department, and was approved by the unit committee for the MSc program. The entire procedure is subject to the instructions of the university's general MSc committee.

The student must submit a request for the approval of a permanent supervisor for the thesis to the unit committee, signed by the intended supervisor. The request will include a brief description (up to one page) of the thesis topic.

In exceptional cases a secondary supervisor may also be appointed. The secondary supervisor must hold a PhD, and must be authorized by the university's MSc committee, following a recommendation from the unit committee. He/she must belong to one of the following groups at TAU: researchers, visiting scientists, teachers in the parallel track at the minimum rank of Senior Lecturer, external teachers and teachers in the clinical track at the Faculty of Medicine. Faculty members from other universities or other research institutions cannot serve as single supervisors at the Faculty of Engineering, but the university's MSc committee may appoint such a person as a secondary supervisor, based on the recommendation of the unit committee, and with the main supervisor's agreement. A request for appointing a secondary supervisor who is not in the regular track must be submitted within a year of the beginning of work on the thesis. A request for appointing a secondary supervisor from industry must be submitted by the Dean of the Faculty to the Vice Rector, as customary for a secondary supervisor, with suitable documents attached (more details are available at the office).

### **Submitting a research proposal**

MSc students in Regular Student status in the thesis track are required to submit a research proposal of 2-3 pages, approved by the supervisor.

At this stage the supervisor approves the student's study program, adding supplementary courses if required.

The research proposal must be submitted to the office within 6 months of the beginning of work on the thesis, and at least six months before the thesis is submitted. The study unit's representative in the unit committee must approve the proposal.

### **Changing the thesis topic or supervisor**

A student who wishes to change the subject of his/her research, but continue working under the appointed supervisor, must explain his/her request in a letter to the unit committee, submitted together with the supervisor's recommendation.

A student who wishes to change the subject of his/her research and start working under a new supervisor, must explain his/her in a letter to the unit committee, submitted together with recommendations from both the previous and intended supervisors.

### **Submitting the thesis and taking the final exam**

Students will submit the draft of the thesis to the supervisor for comments and approval.

The supervisor must deliver comments, specific corrections and needed improvements to the student within two months of receiving each draft.

After receiving the supervisor's final approval, the student may submit the final version of the thesis to the Graduate School Office. However, students may submit the final MSc thesis only after taking all courses required for completing the degree, namely, accumulating all credit points for receiving the MSc degree at the end of the semester in which the thesis is submitted. Students must also complete the required quota of seminars.

Detailed instructions and requirements for writing the thesis may be found on the Faculty website. The thesis must be submitted in either English or Hebrew, as agreed with the supervisor.

One week before submitting the thesis the student submits a copy of the final draft approved by the supervisor to the office, and receives confirmation that the thesis was written according to the instructions, and that he/she has completed all course requirements.

After receiving approval from the office, as well as written approval from the supervisor that the thesis meets academic requirements (on the appropriate form), the student submits the thesis to the unit committee. Following the supervisor's approval the thesis is uploaded to the digital thesis collection.

The thesis is reviewed by the supervisor and at least two other judges, appointed by the unit committee in consultation with the supervisor and/or other faculty members.

The review committee for the MSc thesis includes three or more members as follows:

The supervisor, chair of the review committee

Two or more academic faculty members from TAU or other universities, at the minimum rank of Lecturer.

At least one examiner, heretofore the 'external examiner' will not belong to the unit (School/Department). He/she should be an expert in the relevant field who represents a scientific approach different from the supervisor's approach.

The following persons may not be appointed as external examiners:

Anyone involved in the research

Funders of the research

The candidate's direct manager

Anyone whose research was supervised by the same thesis supervisor in the last five years.

In special cases, with the approval of the university committee, the external examiner may be someone with a PhD or MD who is not an academic faculty member, but is an active researcher and expert in the specific area of the thesis.

Such cases must be submitted to the chairperson of the university's MSc committee with a recommendation from the committee and the proposed examiner's CV.

At least one examiner should be at the supervisor's rank or higher.

The supervisor and two additional reviewers will present their reviews of the thesis to the unit committee within 4 weeks of receiving the essay. The reviews must be sent to the chair of the unit committee and received no less than 3 days before the day of the examination. If significant differences are found between the reviews, the committee may send the work to more reviewers before setting the date for the final exam.

The student must receive a minimum passing grade (60) from each reviewer for the committee to discuss the terms of the final exam. A grade given by a reviewer is

final. It may not be changed after the exam or by submitting a corrected paper that has been revised according to the reviewers' comments.

The final exam will take place within two months of sending the paper to the reviewers. The student must receive a minimum grade of 60 on the exam in order to qualify for the MSc degree. Terms for the successful completion of studies will be determined after the committee has received final reviews of the thesis (following corrections as needed), as well as the grade in the final exam (minimum of 60).

# **The Course of MSc Studies**

## **Final Project**

### **Scope of the final project**

The scope of a final project at the Faculty of Engineering is 3 credit points, and the project must be completed in one semester.

The final project is supervised by a project supervisor on a personal basis, or as part of a Final Project seminar. This will be decided by the study unit.

### **The supervisor's role**

The role of the project supervisor or the seminar teacher is to advise and assist the student in the final project. The supervisor also approves the topic of the project.

If the project supervisor is not a faculty member at the School/Department, a supporting supervisor is appointed from the School/Department's faculty (see Section 2, Definitions). The supporting supervisor must approve the plan of the project, and make sure that the student fulfills the plan (or alternately approve deviations from the original plan), and contributes significantly to the project.

### **Appointing a supervisor**

A final project supervisor may be a senior faculty member at an Israeli institution of higher education, or a suitable person from industry – who is an engineer with a minimum degree of MSc, and whose appointment has been approved by the Head of the study unit granting the degree. In this case a supporting supervisor (who is a faculty member) must also be appointed with the approval of the Head of the unit, and with the consent of the intended supporting supervisor.

The student must submit the request for appointing a final project supervisor to the office, signed by the intended supervisor. The request will include a brief description (up to one page) of the project's subject. For international students, the request is through the international office prior to arrival.

### **Submitting a final project and taking an exam on the project**

A student must submit the final project and be tested on it no more than one year after completing the courses, and within the required period of MSc studies.

At the end of the project a printed report is submitted to the supervisor. Afterwards a date is set for an oral exam, in which the project is presented in a 20-minute PP presentation.

An additional examiner - a senior faculty member from the department, appointed by the Head of the study unit - joins the supervisor at the exam. If the project supervisor is a faculty member at the Faculty of Engineering, the additional examiner can be an external teacher and/or a suitable person from industry with at least a research MSc in engineering.

If the supervisor comes from industry, the supporting supervisor serves as an examiner at the end of the project.

The supporting examiner grades both the written essay and the oral exam. The final grade incorporates the grades given by both the external supervisor and the supporting supervisor.

[Instructions for writing a final project:](#) Please be in touch with the M.Sc. or PhD. office

# **The Course of MSc Studies**

## **Additional Regulations**

### **Transferring from one School/Department to another**

To transfer from one study program to another inside the Faculty a student must re-enroll at TAU on the Registration website. Registration depends on approvals from the Head of the School/Department the student wishes to leave, the Head of the School/Department the student wishes to enter, and the unit committee. \*for International students, please be in touch with the International office of the Faculty.

If the student has completed 2 or more semesters of studies for the MSc, the transfer depends on the appointment of a permanent supervisor or project supervisor.

Changing the field of studies entails a complementary studies program.

Previous courses are recognized with the approval of the supervisor and Head of the Department, provided the student received a passing grade (at least 60). However, the receiving School/Department can raise the requirements for course recognition.

### **Leave from studies**

A leave from studies is only granted once during the entire period of studies, for a maximum of one year, and only during the accumulation phase.

Students in Regular Student status are not entitled to a leave from studies, apart from exceptional cases that must be discussed at the unit committee, based on a letter from the student, submitted with relevant documents that explain the request.

At any stage of the study program, a student applying for a leave must receive the recommendation of the supervisor and Head of the School/Department, as well as the approval of the unit committee.

A leave from studies is not counted in the time designated for MSc studies.

### **Direct track to a PhD**

In special cases, an MSc student in the thesis track may advance to the status of a PhD student in the direct track (stage 1) – if he/she has shown outstanding research abilities and academic achievements that justify such advancement. For details please see the Faculty Regulations for PhD Studies.

After submitting a research proposal, passing the suitability exam (the extended candidacy exam) and completing 30 credit points in course requirements at the School/Department to which he/she belongs, the student in the direct track to the PhD receives an MSc in the final project track. The diploma indicates that the degree was granted during studies in the direct track to a PhD.

A student who discontinues his/her studies in the direct track to a PhD after receiving the MSc as noted above, and before qualifying for a PhD, and wishes to resume his/her PhD studies at a later date, is required to submit a scientific paper equivalent to an MSc thesis – as a prerequisite for readmission to the PhD program.

## Discontinuing and renewing studies

### ***Termination of studies for academic reasons***

A student's studies are terminated by the Faculty in the following situations:

*The student has not fulfilled the designated requirements for admission and/or complementary studies.*

*The student did not pass all courses defined as mandatory by the School/Department - by the end of the 4<sup>th</sup> semester for students who began their studies in the accumulative phase; or by the end of the 2<sup>nd</sup> semester for students who began their studies in the Regular Student status.*

*The student has failed 2 courses in his MSc studies. However, if the student re-enrolls and passes the course in the following year, the initial failure will not be included in the count of failures for the termination of studies. If the course is not offered in the following year, the student must apply to the unit committee for permission to take an alternative course.*

*The student has enrolled in less than 3 courses in one academic year during the accumulative phase.*

*The student is in the special 'complementary studies' status, and has not passed even one complementary course in the course of one academic year.*

*The student has not completed his/her studies in either the accumulative phase or the regular status phase within the designated timeframes.*

*The student has not submitted his/her thesis or final project within the allotted timeframe.*

Appeals regarding the termination of studies may be submitted to the unit committee with recommendations from the supervisor and the Head of the School/Department. The committee's decision is final, and may not be appealed again.

Students whose studies have been terminated for academic reasons:

Students whose studies have been terminated for academic reasons must wait at least two year before re-applying for MSc studies at the Faculty of Engineering.

The study record given to the student upon the termination of studies includes all the courses he/she has taken, including those he/she has failed.

### ***Discontinuation of studies by the student***

A student who wishes to discontinue his/her studies at the Faculty must submit notifications in writing to both the Registration Office at the Registry Center and the Graduate School Office at the Faculty.

A student who has not submitted a study program form will be considered to have terminated his/her studies. Not submitting the form and receiving a termination notice from the Faculty do not exempt the student from tuition fees. **To stop the payment of tuition the student must notify the Tuition Unit at the Registry Center.**

The study record given to a student who has discontinued his/her studies includes all the courses he/she has taken, including those he/she has failed.

### **Renewing studies at the Faculty**

A student renewing his/her studies is required to complete the full study program, with the exception of courses from former studies that the Faculty decides to recognize, subject to TAU Regulations as follows:

*In case of suspension of studies for a period of 2 to 5 years: The unit committee will decide whether to recognize courses the student passed before suspending his/her studies. The committee will take into account recommendations from the Head of the School/Department and the supervisor, as well as any changes that may have been made in the contents of the relevant courses.*

*If studies have been suspended for more than 5 years, the full statute of limitations applies to all courses taken before the suspension, according to TAU's 'Studies' Statute of Limitations Regulation' (See 'recognizing previous studies' in the University Directives).*

In special cases students may file a request for special exceptions to the University-level MSc Committee.

### **Special arrangements**

Special arrangements for students returning from reserve duty:

TAU Regulations: <http://www.tau.ac.il/tau-rules/15-1.pdf> (In Hebrew only)

Special arrangements during pregnancy and after giving birth:

TAU Regulations: <https://for-women.tau.ac.il/pregnancy-and-birth> (In Hebrew only)