Research at the Technion's Faculty of Architecture and Town Planning

Procedures and Useful Information for the Faculty's Research Community
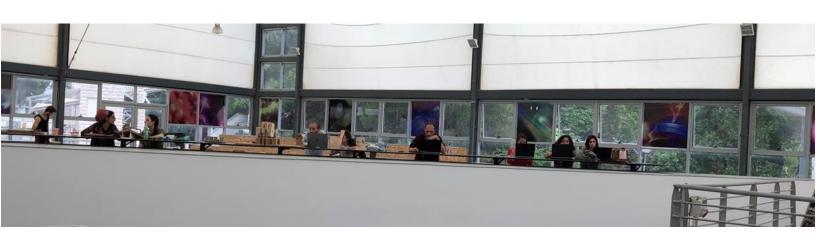

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1. The Faculty of Architecture and Town Planning's Goals and Expectations of Its Research Community

1.1. Introduction

The Technion's Faculty of Architecture and Town Planning is a leader in research fields pertaining to spatial design, architecture, landscape, urban planning, and industrial design in Israel. One of its goals is to promote research among its community of researchers, which includes faculty members, graduate students, post-doctoral researchers, and guest lecturers.

This document concentrates and describes the main aspects and procedures related to research and the research community at the faculty. It presents a unified procedure for handling research students at the faculty, which is subject to the authority of the faculty's dean of research. For all procedures, the policies of the Graduate School[1] and the Research Authority supersede those of the faculty. The Graduate School handles all matters related to master's and doctorate degrees at the Technion, from the moment the student enrolls to the final stages of completing their studies and receiving their degree. The Research Authority handles all the financial and operational aspects related to research conducted at the Technion. The faculty's procedures are supplementary to those of the Graduate School and Research Authority.

1.2. The Faculty's Goals in the Field of Research

The faculty has set itself several goals to promote research:

a. Promoting innovative and diverse research in the spatial fields.
b. Promoting excellence in research.
c. Promoting academic publications by the faculty's research community in peer-reviewed journals.
d. Providing graduate students with writing and research tools.
e. Promoting fundraising from competitive Israeli and International research funds.
f. Awarding scholarships to research students and research grants to postdoctoral researchers based on criteria of excellence and transparency.
g. Instilling ethical research values among the research community.

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[1] https://graduate.technion.ac.il

1.3. The Faculty's Expectations of Research Students and Postdoctoral Researchers

In an aim to promote the faculty's academic excellence, in line with the academic culture at the Technion, and to promote the faculty's prestige in the Israeli and international arena, the faculty expects several things of its community of researchers (which includes faculty members, research students, and postdoctoral researchers). These expectations are not obligatory and no sanctions will be taken against any member of the community who fails to meet them.

The faculty's basic expectations, by category of community members:

1.3.1. Expectations of Master's Students on a Research Track

a. The faculty expects master's students to publish an academic paper based on their thesis in a peer-reviewed journal.
b. Participation in a national or international academic conference.

1.3.2. Expectations of Doctoral Students

a. The faculty expects doctoral students to publish at least one academic paper, based on their dissertation, in a peer-reviewed journal.
b. Present their research in at least two international academic conferences during their studies.
c. Experience writing at least one grant proposal for their research.
d. Experience teaching during their studies.

1.3.3. Expectations of Postdoctoral Researchers

a. The faculty expects postdoctoral researchers to publish at least one academic paper in a peer-reviewed journal every year they work at the faculty.
b. Participation in international conferences.
c. We recommend gaining experience writing grant proposals and writing at least one proposal during their postdoc period.
d. Present their research at a faculty seminar or colloquium.

e. Take part in and experience organizing a conference or research workshop at the faculty, if possible.

f. When publicizing their work (articles, seminars, or any scientific publication), they associate themselves with the Faculty of Architecture and Town Planning at the Technion, with the faculty and institution name appearing in scientific publications.

1.4. The Faculty's Incentivization Policy

- **Participation in Conferences**
  a. Students will submit a request to the faculty to receive an Azrieli scholarship, which supports travel to conferences. This is contingent upon the student's abstract or paper being accepted to the conference (if this is a requirement).
  b. The Technion has designated funds for travel expenses.

- **Research Grants**
  a. The faculty will provide assistance with English editing services to those submitting grant proposals.
  b. There will be a workshop on how to prepare grant proposals.

- **Publication**
  a. All publications in international peer-reviewed journals will receive publicity from the faculty.
  b. Publication in peer-reviewed journals will serve as a cornerstone and key criterion in granting awards for academic excellence.
  c. Meeting expectations relating to academic achievements will serve as another criterion for the faculty to award scholarships.

1.5. Study Tracks at the Faculty

The Faculty of Architecture comprises four study tracks that include advanced studies for graduate degrees. These are:

1. Architecture
2. Landscaping
3. Urban Planning
4. Industrial Design

There are several graduate degree programs for each of the study tracks:

- PhD program—intended for master's graduates who have a written thesis.
- Master's studies with thesis—students may pursue either a research-based thesis or project-based thesis.
- Master's studies with a capstone project/paper.
- Master's studies without a thesis—a study track lasting around two years.
- Professional master's degree in architecture/landscaping—a two-year study track for undergraduates with degrees in architecture/design or other degrees (subject to completing additional courses).

2. Becoming a Doctoral Student

2.1. Regular students (graduates of the master's studies with thesis program):

a. Doctoral applicants are admitted based on the Technion's standard policies and procedures. Students need to approach a faculty member and ask them for assistance with defining a research field. If a student does not know who to approach, they should consult with the chair of the research committee of the relevant track or with the vice dean of research. At the same time, the student should enroll in the Graduate School.

b. As soon as they enroll in the Graduate School, students should define their research field with their advisor and present it in a 2 to 5-page document. The student's intended advisor will then submit the student's doctoral application along with the proposed research field to the chair of the chosen track's research committee.

c. The track research committee (at the intended advisor's recommendation) will propose establishing an admissions committee comprising three faculty members—after reviewing the candidate's dossier and proposed research field and concluding that the candidacy should be approved for doctoral research. The advisor will chair the committee and the other two members will be faculty members with an affinity to the research field.

d. The admissions committee will interview the candidate about their expectations and ability to contribute to the field of research. The committee, together with the candidate, will determine the supplementary knowledge the candidate must acquire through courses and propose a list of courses according to the track committee's policy. The advisor will prepare a report summarizing the admissions committee's meeting and the list of supplementary courses will be submitted to the track research committee for deliberation.

e. Upon beginning their studies, the candidate will have 12 months to prepare a research proposal with their advisor—or as the Technion refers to it—a brief essay detailing the research proposal and including (among other things) a literature review, research questions and objectives, research methods, and its expected contribution.

f. Two months prior to submitting the brief essay to the Graduate School, the advisor will submit a summary of the essay to the track research committee along with a proposal to establish a committee for reviewing the candidacy. The track research committee will

discuss whether the reviewers are appropriately suited to the research topic and approve the members of the committee.

g. Students will submit their brief essay to the faculty's Graduate Studies Office according to the Technion's instructions for preparing a brief essay. If hardcopies are required, several should be prepared based on the number of approved reviewers. One copy must be signed by the advisor and the chair of the track and/or the research committee.

h. No later than two months prior to submitting their final doctoral paper, the student will present a 60-minute seminar lecture about their research in front of all the faculty's research students and faculty members.

i. Two months prior to submitting the final dissertation to the school, the advisor will submit a proposal for establishing an exam committee along with an abstract. The track research committee will discuss whether the reviewers are appropriately suited to the research topic and approve the members of the committee. The committee will be chaired by the advisor(s) and include two more examiners, a faculty member, and an external examiner. At least one of them needs to be of the same academic rank as the advisor or higher. According to faculty procedure, at least one of the committee members needs to have served on the committee that reviewed the student's candidacy.

j. The date of the final exam will be decided after all the committee members' opinions have been received and the dean has approved that the exam take place.

2.2. Students on the Direct Track to a PhD

a. The student's master's advisor will submit the student's application to the chair of the track research committee, for the student's transfer to the direct PhD track (after ensuring that the candidate meets the Graduate School's criteria). The application will include a concise summary (no longer than 5 pages) of the work the student has completed up to that time as part of their master's degree, along with reasons and arguments supporting their admission to the direct track. In addition, the application will include a proposed research plan and suggest two reviewers (the advisor and one more person) to read the application and give their opinions on why it should be expanded into a doctoral thesis, as proposed.

b. The track research committee will deliberate and approve the two reviewers.

c. The opinions prepared by the reviewers will be submitted to the track research committee along with the list of supplementary courses prepared by the advisor. Based on these opinions, the track research committee will determine whether the student should be transferred to the direct track and will inform the Graduate School of its decision.

d. Once the track research committee and Graduate School have approved the advisor's recommendation to admit the student to the direct track, the stages are as specified above and in Section 3 below.

2.3. Students with Non-Thesis Master's Degrees—Exploratory Research

Students without a thesis can complete one year of "exploratory study" in order to be admitted to the PhD program, according to the rules and guidelines presented in Chapter 3 on the following page.

3. Admission to the PhD Program by Conducting Exploratory Research and Guidelines for Writing an Exploratory Research Proposal

3.1. What is Exploratory Research?

- The purpose of conducting exploratory research is to give candidates who have not done a research thesis, and were not on a research track, the chance to demonstrate their research ability. Hence, by conducting exploratory research candidates are meant to demonstrate a clear ability to carry out clear and compelling research.

- Exploratory research is research for all intents and purposes. It comes in place of a research thesis and provides proof of the candidate's research ability. Therefore, it includes all the components of a research paper and undergoes external scrutiny, albeit at a more limited empirical scope. It should be emphasized that exploratory research cannot consist solely of a literature review.

- The exploratory research field: The exploratory research field needs to be within the intended research field of the PhD studies.

- Exploratory research that aims to present nothing more than a literature review will not be approved.

- The exploratory research and PhD advisor: The person serving as the candidate's advisor for the exploratory study will continue to serve as their PhD advisor.

3.2. Admission Prerequisites for the Exploratory Research Track

The prerequisites for applying to the exploratory research (thesis supplementation) track are:

1. Holding a non-research master's degree (with no thesis) from an academic institution that awards research degrees.
2. Graduating master's degree studies in the top 20% or with honors.
3. Undergraduate achievements that would enable admission to a master's degree research program in the department in which the candidate seeks to carry out their PhD studies.
4. Securing an advisor who plans to accompany the exploratory research and continue advising the candidate during their PhD work. The exploratory research topic must be within the candidate's planned PhD research field and in the same academic department.

Candidates who do not meet criteria 1–3 can submit a request to make an exception if they have at least two years of proven experience conducting research in the relevant research field (e.g., have worked in research institutes, published papers, etc.)

Please contact the head of the Registration and Admissions Unit prior to registering.

3.3. Timeline for Completing the Exploratory Research

Students can take up to two semesters to complete their exploratory research. Tuition will stand at 10% of standard tuition rates for each semester. There is no obligation to study any subjects as part of this framework.

3.4. Students Who Have Studied Abroad

Students who have studied abroad and completed a five-year degree program (master's degree studies in Europe, South America, etc.) and/or a non-research degree can apply for this track. For more information, please contact Gabi Laufman, Advisor to International Students at the Technion.

3.5. Scholarships

As part of conducting exploratory research, students will be able to receive scholarships during this period, based on recommendation by the academic department. The number of exploratory research scholarship months will be deducted from the number of PhD scholarship months. Exploratory research scholarship recipients are required to submit the brief description of their research seven months after being admitted to the PhD program (as opposed to 11 months after).

3.6. Admissions Process for Exploratory Research (for Master's Degree Graduates with No Thesis)

The process of being admitted to the exploratory research track and ultimately to the PhD program differs from the regular process for candidates with a thesis. The process consists of the following stages, as illustrated in Figure 1:

a. The candidate enrolls in the Graduate School.
b. The candidate needs to demonstrate a track record of academic excellence, graduating their master's studies with a GPA of at least 90.

c. As soon as their enrollment is approved, the candidate needs to select an advisor for their exploratory research and PhD thesis from the faculty's lecturers. The advisor needs to be suitable and agree to serve as the candidate's advisor in the subject the candidate seeks to specialize in.

d. The candidate will compose an exploratory research proposal and define a field together and with the guidance of their advisor. This document will be structured according to the guidelines for writing an exploratory research proposal presented in this chapter.

e. The research proposal will be submitted to the intended track committee for approval. The advisor will bring the document to the track committee in order to get both the proposal and the research subject approved. The committee will discuss the application after reviewing the candidate's dossier and concluding that the candidate has the potential to be a doctoral student at the faculty and that the proposal is worthwhile. They will then **approve** the exploratory research proposal and the research subject.

f. If the track committee approves the exploratory research proposal and the subject, the candidate will begin their research.

g. The exploratory research period, from the moment it begins until it is approved by the track committee, must be limited to no more than 12 months.

h. Two months prior to submitting the exploratory research, the advisor will submit a proposal to the track research committee to establish an exam committee for the exploratory research. The track committee will select two reviewers for the exploratory paper—the advisor and an external reviewer who is an expert in the research field.

i. The two reviewers will submit an assessment report to the track committee regarding the research work. If they both express the opinion that the candidate has demonstrated clear research abilities and if the track committee is convinced that the candidate should be admitted to the PhD program based on the reviewers' opinion—an admissions committee will be established, headed by the advisor and joined by two other track members. If the student is admitted, they will continue in the regular PhD track.

j. If one or both reviewers raise doubts regarding the candidate's research ability, the candidate will not be admitted to the PhD program and a committee will not be established.

3.7. Admission to the Exploratory Research Track through the <u>Professional Master's Degree in Architecture</u>

a. **The goal of the exploratory research track for students studying towards a professional master's degree in architecture** is to enable high-achieving students in the non-thesis track to continue their studies and be admitted to the PhD program at the Faculty of Architecture and Town Planning. Students admitted to the exploratory research track will be required to conduct a limited study and submit an essay <u>demonstrating their research ability</u>.

b. **Prerequisites for applying to the exploratory research (thesis supplementation) track:**

1. Students must have completed their fifth year of studies with a GPA of at least 90 or are among the top 10% of students in terms of academic achievements.

2. Securing an advisor to accompany the exploratory research and who will continue serving as an advisor throughout the PhD research (the exploratory research topic must be within the intended research field of the PhD).

c. **The admissions process and the progressing with the exploratory research:**

1. Students can apply for the exploratory research track only upon completion of their fifth year of studies and in accordance with the prerequisites.

2. Students must secure an advisor for their exploratory research who is also willing to serve as their advisor during their doctoral research. As not all faculty members are authorized to serve as PhD advisors; students must be presented with an up-to-date list of potential advisors toward the end of the academic year and given guidelines on how to select an advisor.

3. Students should contact the head of the Registration and Admissions Department before they register to make sure they meet the admission requirements.

4. Composing an exploratory research proposal under the advisor's guidance: The proposal will be submitted in accordance with the procedures for the research document, the subject being "Exploratory Research Proposal." It will consist of two parts. The first will be approximately two pages long and describe the research field and the research phenomenon being investigated. The second part will include the exploratory research proposal and will be approximately 10 pages long, comprising (a) an introduction; (b) a literature review; (c) goals and contribution of the work; (d) methods; and a list of references.

5. The advisor will submit the proposal to the architecture track's research sub-committee.

6. If the exploratory research proposal is accepted, the student will begin their exploratory research.

7. The architecture track's research sub-committee will appoint two examiners to review the final paper in addition to the advisor.

8. When the student completes their exploratory research (within no more than 12 months), the advisor will submit the final paper to the faculty's graduate degree coordinator who will send it to the examiners. The advisor and examiners will assess the student's <u>research ability</u> and give their opinion on whether their transfer to the PhD program should be approved.

9. If the sub-committee finds that all the opinions are positive and that the student has demonstrated research abilities, it will approve the student's admission to the PhD program (the committee will not initiate a new discussion to consider the PhD proposal). The opinions will be attached to the committee's recommendation to admit the student to PhD studies and sent to the Graduate School.

d. Mandatory courses during the exploratory research period

1. Students admitted to this exploratory research track must take a course to prepare them for the research process.

2. In addition to the mandatory course, students are highly encouraged to take courses on quantitative or qualitative research methods taught at the faculty, based on their research field or the appropriate research method.

e. The duration of this study program

- It is important to note that **students will not be allowed to submit their final exploratory research paper to the sub-committee and examiners before they have submitted their final capstone project, successfully completed all their courses,** and <u>officially finished their professional master's degree</u>.

- The exploratory research must be completed within two semesters.

f. Scholarships in the exploratory research track

Students in the exploratory research track will be able to receive scholarships during this period, subject to recommendation by the academic department. The number of "exploratory research" scholarship months will be deducted from the number of PhD scholarship months.

Students who receive scholarships during the exploratory research period will be required to submit the brief description of their research seven months after being admitted to the PhD program (as opposed to 11 months after).

3.8. Structure of the Exploratory Research Proposal

The idea behind the exploratory research requirement is to give the student the opportunity to experience the research process and demonstrate their research ability. As the exploratory research must be completed within a 12-month period, <u>we do not expect it to involve broad empirical research but rather empirical research that is more limited in scope</u>. The exploratory research should be more limited in scope compared to a master's thesis, as opposed to a doctoral thesis.

The proposal should generally include the following components:

a. **Abstract:** A concise description of the proposed research, the research field, and the proposal's key points. The abstract should not include references and should be <u>no longer than half a page</u>.

b. **Introduction:** Provides general background information on the research field and a general framework for understanding the research topic. The introduction describes the phenomenon under investigation, positions it in relation to the existing literature, and introduces the question or questions the research will focus on. <u>Recommended length: no more than 1–2 pages</u>.

c. **Research Field:** The purpose of this section is to present the research field along with a relevant literature review. Therefore, it should include the following components:

1. A review of prominent literature concerning the research topic. The review should address current discussion within field of research in a critical and relevant way (i.e., answers the question: "What does the existing research say on the phenomenon under investigation?")

2. Positions the research topic in relation to the relevant international literature and describes this relationship. The goal is for the student to show that they are familiar with the existing literature pertaining to their proposed research topic.

3. Reference to the research gap in the existing literature and how the proposed research aims to fill this gap.

4. The proposed information sources the research will rely on.

5. <u>Recommended length of the literature review: 3–4 pages</u>.

d. **Exploratory Research Questions and Goals:** An exploratory study is meant to focus on a specific issue related to the broader research field presented in the previous section. We

do not expect students to develop questions for their PhD research at this stage. This section presents the goals of the exploratory research and its questions or hypotheses (depending on the research type and method). <u>Recommended length: up to 1 page</u>.

e. **Research Methods:** The proposal needs to specify how the research will be conducted. The faculty emphasizes that the exploratory research is more limited in its empirical scope compared to a master's thesis. The idea is for students to experience research methods and demonstrate their research abilities. Consequently, this section should generally include the following items:

1. <u>Type of research methods</u>: Clearly define whether the research method is qualitative, quantitative, or mixed.

2. <u>Research population</u>: Define the population the research seeks to investigate. This could refer to people, groups, structure, cities, etc.

3. <u>Data collection and research tools</u>: What data does the research aim to collect? Where will it come from? How will it be collected? Will questionnaires be used, and if so, will existing questionnaires be used or will the student develop their own questionnaire, or us a different method?

4. <u>Sampling</u>: If sampling is going to be conducted, it needs to be described here.

5. <u>Procedure</u>: Describe the various research stages, e.g., how the data will be collected and specific instructions will be given for the data collection, etc.

6. <u>Data analysis</u>: Describe how the data will be analyzed, i.e., the analysis method.

<u>Recommended length: 3–4 pages</u>. The research method must be as specific as possible within the recommended 3 to 4-page limit.

f. **Contribution:** State the research's expected contribution, which may be theoretical, practical, and/or applied. The purpose of this section is to convince the readers that the research should be conducted and that its expected contribution is worthwhile. <u>Recommended length: half a page</u>.

g. **List of References:** This list must include all the references cited in the paper. There are several academic referencing styles. The accepted style within the faculty is that of the American Psychological Association, known as APA. Guidelines on how to write a list of references can be found on the APA website.

3.9. Length and Formatting of the Exploratory Research Proposal

- The proposal will be no longer than 10 pages, not including the list of references.
- The recommended line spacing is 1.5.
- The recommended font for proposals written in English is Times New Roman, and Arial or David for proposals written in Hebrew.
- The cover page must include the name of the faculty and track, followed by the title of the work in both Hebrew and English, the first title appearing in the language in which the proposal in written. This is then followed by the student's name, the advisor's name, the date of submission, and a space for the advisor(s) signature(s).

3.10. Status of Students in the Exploratory Research Track

a. Students who have been admitted to the exploratory research track will have the status of "not studying toward a degree."

b. Students in the exploratory research track will be able to receive scholarships by recommendation of the department. The number of exploratory research scholarship months will be deducted from the number of PhD scholarship months.

c. Exploratory research scholarship recipients will be required to submit the brief description of their research seven months after being admitted to the PhD program (as opposed to 11 months after).

d. Students must finish writing their exploratory research paper within a maximum of 12 months.

e. There is no obligation to study any courses as part of this track.

f. The exploratory research must be completed within <u>two semesters</u>. This timeframe <u>includes</u> approval of the examiners, submission of the exploratory research and having it sent to the examining reviewers, receival of their opinion and recommendations—and having these brought before the track research committee/sub-committee so the student's transfer to the PhD program to be approved.

g. The advisor needs to set the timeline for completing the process specified above and ensure that the student meets the various deadlines.

4. Master's Students in a Research Study Track

4.1. The Admission and Research Proposal Approval Process for Students in a Research Study Track (Thesis Track)

a. A master's degree student enrolled in a research study track (thesis track) needs to choose an intended advisor by consulting with their temporary advisor. Students who know they want to study in a research track are encouraged to choose an advisor even before they are admitted to a master's program. If necessary, students should also consult with the chair of the relevant track committee.

b. With guidance from their intended advisor, the student will prepare a brief research proposal, ideally within half a year, focusing on a detailed description of the research method (according to faculty document "Guidelines for Preparing a Research Proposal for a Master's Thesis," see Chapter 5). The proposal will only continue to the next stages of approval once it has been approved and signed by the advisor.

c. The advisor will submit the proposal to the chair of the track research committee. The committee will discuss the proposal and all its components (as outlined in the Guidelines for Writing a Research Proposal) and decide whether to approve it, approve it with changes, or not approve it. Once the proposal is approved by the committee it will be sent to the Graduate School. If a student is required to implement changes, they will submit the revised paper within two weeks from the day the deliberation was held and the corrections were required to be made.

d. Research proposals will not be approved by email—they will be approved in track committee/research committee meetings.

e. No later than two months prior to submitting the paper (based on the date that was set when the student is admitted to the program), the student will give a lecture based on their research.

f. Two months prior to submitting the final thesis, the advisor will submit a request to the track research committee, to form an examination committee for the final exam (along with submitting the abstract of the paper). The track research committee will discuss whether the examiners are suited to the research topic and will approve the exam committee's members.

g. After receiving the opinions of each of the examiners and upon approval of the dean of the school, an exam date will be set.

h. The exam committee may require the student to make changes to their paper after the exam.

i. The dean of the Graduate School will inform the student of these requirements. If these involve minor corrections, the student will be required to submit the revised paper no later than six months after the exam date.

4.2. Types of Master's Degree Research in the Research Study Track (with Thesis)

4.2.1. Research

The purpose of master's degree research is to train the student in research methodology, including writing a critical literature review, conducting limited-scope research, and submitting a thesis. The research may be theoretical or experimental, basic or applied, and should place an emphasis on using the scientific analytic approach. Master's research is accredited 20 points. Please see the guidelines for writing proposals presented in Chapter 5.

4.2.2. Project

The project's purpose is to train the student in engineering design methods, including conducting a critical literature review, managing a project, and submitting a thesis, with an emphasis on the applied engineering approach. This should be a comprehensive engineering project dedicated to engineering design, theoretical or critical engineering analysis, lab or field experimentation, a critical survey of methods or existing knowledge that can advance our existing understanding or revise our knowledge, etc. Master's projects are accredited 20 points.

4.2.3. Final Thesis

The purpose of the final paper is to consolidate the knowledge acquired by the student by having them apply theoretical knowledge to solving a practical problem. In addition, it must include a detailed analysis of a research question and methods of solving it, accompanied by a critical literature review. Alternatively, the paper can focus on a limited research question, such as conducting a complex experiment as part of a group study and presenting a detailed report. The

final paper may be theoretical, computational, or experimental. Final papers are accredited 12 credit points. Who Is Permitted to Serve as an Advisor and the Advisor's Role

4.3. Who Is Permitted to Serve as an Advisor?

There are two types of advisors: primary advisors and co-advisors. At the Faculty of Architecture, faculty members can serve as primary advisors:

a. **Full-time faculty members (not guests[2]):**

Master's thesis advisors:

The first time a faculty member with a master's or PhD degree serves as an advisor they will be accompanied by an unlisted mentor who will council them and review official documents before they are submitted to the track committee according to the faculty's standard procedure. As a rule, faculty members who do not have a master's degree will not be approved as advisors. Exceptional cases will be discussed with the Graduate School.

PhD thesis advisors:

Faculty members who have a PhD degree will be able to serve as advisors as soon as they are awarded their PhD degree with the accompaniment of an unlisted mentor (as is the current practice). As a rule, faculty members who do not hold a PhD degree cannot serve as PhD advisors. Exceptional cases will be discussed with the Graduate School, according to the following specifications:

Faculty members who do not hold a PhD degree, yet have a proven track record[3] of successfully advising graduate students at the Technion or in another institution that has been approved by the dean and the Graduate School will be able to serve as PhD advisors at the faculty as soon as the Graduate School approves their previous achievements as advisors. They will be accompanied by an unlisted mentor the first time they serve as advisors.

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[2] This policy document on advising at the Faculty of Architecture has been submitted, discussed, and approved by the Graduate School after corrections were made in June 2019.

[3] Determination of success in a mentor's role and the decision of whether to permit the faculty member to serve as a primary or co-advisor for a PhD thesis will be made by the dean in consultation with the Graduate School, the head of the relevant track at the faculty, and the faculty's vice deans of graduate studies and research.

Faculty members who have a master's degree but not a PhD degree and who have no experience advising doctoral students, will be required to successfully* advise a master's thesis student at the faculty before they will be permitted to advise their first doctoral thesis as a co-advisor. Only after having successfully* served as co-advisor on a thesis will they be able to serve as independent PhD thesis advisors, subject to the approval of the dean of the faculty.

b. Full- or part-time guest faculty members:

As a rule, only those who hold an academic appointment as Technion faculty members throughout the entire term of the student's thesis can serve as primary advisors at the Technion. The below sections also apply to guests who hold such an academic appointment.

c. Part-time faculty members:

The below sections also apply to part-time faculty members who hold an academic appointment as part-time Technion faculty members.

d. Retired faculty members and emeritus professors:

- Retired faculty members and emeritus professors can serve as primary advisors at the faculty. They will be joined by a full-time faculty member with advising experience who will serve as co-advisor.
- Students who began their thesis before their advisor retired will continue to be advised by their original advisor.
- If the advising process begins after retirement, it will only be approved if the retired faculty member is joined by an active faculty member (who is not retired) with an affinity to the research field as co-advisor.

4.4. The Advisory Quota ([Link](#))

- An advisor will be allowed to advise a limited number of students, based on the Graduate School's policies, which are as follows:
  - An untenured junior faculty member may advise up to eight students.
  - A tenured senior faculty member may advise up to 10 students. If none of these students take long to complete their thesis the advisor will be permitted to advise two more students—a total of 12 students.

- At the recommendation of the Graduate Studies Committee, the Dean of the Graduate School may approve an exception to this number. In any such event, the recommendation will be accompanied by a statement from the advisor (to be approved by the committee) according to which the number of students under their supervision will not provide any excuse for postponing various deadlines e.g., prolonging the duration of the studies, delaying the submission of the brief essay, etc.

- The Dean of the Graduate School will notify the advisor and the committee of having approved the exception and the approval will be included in the relevant students' files for follow-up purposes.

4.5. Appointing a Co-Advisor/Research Consultant ([Link](#))

- **A co-advisor** contributes to the student's research thesis on topics on which the primary advisor is not an expert. A co-advisor may be appointed when the research topic is submitted or at a later date. In any event, their contribution to the advising process and the research must be specified. If the co-advisor is not a Technion faculty member, their CV must be attached.

- **The co-advisor** is not obligated to supervise the student's studies and is not required to report the student's progress to the Graduate School. When the primary advisor is absent, the co-advisor will take over the role of supervising the student's study program at the Technion.

- **A research consultant's role** is to provide consultation to the student during their research thesis. The consultant's contribution is less significant than that of the co-advisor as they mainly offer consultation regarding work methods. The following can serve as research consultants: laboratory technicians working in the primary advisor's lab; professional experts in the research field; and professional experts specializing in work methods used in the research, who can assist the student in overcoming obstacles in their research.

- **A research consultant** does not have to participate as an examiner in the candidacy examination or the final examination.

4.6. Going on Sabbatical/Unpaid Leave ([Link](#))

a. An advisor who plans to go on sabbatical or unpaid leave will notify the Academic Faculty Office.

b. The Office of Academic Affairs will notify the Students' Progress Office of the date of leave.

c. Advisor replacement forms will be sent to the department, requesting the appointment of a substitute advisor for each of the students being supervised.

d. The Students' Progress Office appoints substitute advisors and approves the sabbatical/unpaid leave.

e. If the advisor asks for this in advance, they will automatically return to advising their students upon their return.

f. The substitute advisor will serve as the students' primary advisor in every respect.

g. An advisor taking a sabbatical in Israel who would like to continue advising their students must commit to being available to them, with everything this entails.

h. Advisors are urged not to take on new students before going on sabbatical, and especially not to take on PhD students before their candidacy examinations.

4.7. Cessation of Advising ([Link](#))

- If an advisor resigns or is unable to fulfill their duties due to illness, absence, going on sabbatical, or for any other reason, the dean of the Graduate School will appoint another advisor based on the committee's recommendation.

- If a student continues with the same research topic, the original advisor must give approval.

- If another advisor cannot be secured, the advisor will be required to limit their leave to no more than two semesters.

- If the student cannot find another advisor for this period, their studies will be terminated.

4.8. The Advisor's Role

a. The advisor[4] is responsible for accompanying and guiding the student throughout their studies, and serves to liaise between the student, the departmental graduate studies committee, and the school on all matters pertaining to their studies.

b. The student will conduct their research under the advisor's direct guidance. It is the advisor's responsibility to ensure that the research is carried out and provides the student with the means for doing so.

c. Any information passed on to the student by the advisor must be in accordance with the school's regulations and procedures. In the event of contradicting information, the school's regulations and procedures as they appear on this site supersede.

d. The advisor must respond to any request made by the student and give their recommendation to the departmental graduate studies committee after reviewing the student's academic achievements based on their grade sheet.

e. The primary advisor oversees all aspects of the student's studies, as detailed below (direct links):

1. Advising
2. Course of studies
3. Scholarships
4. Graduation stages
5. Forms for the advisor
6. Plagiarism
7. A guide for the departmental graduate studies coordinator

4.9. The Essence of PhD Research (Link)

The research must be original and may be theoretical or experimental, basic or applied, while implementing an analytical and scientific approach. It involves significantly less guidance from the advisor compared to a master's thesis. Candidates must demonstrate that they are qualified to conduct research and that they are able to conduct original research that holds value. Furthermore,

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[4] https://graduate.technion.ac.il/advisor_info

they must demonstrate that they possess the initiative, imagination, investigative character, discretion, and diligence necessary for conducting independent research. The research will be considered to be of value if it can be published in a reputable international scientific journal and if it significantly advances knowledge and understanding of the research field.

4.10. Approval of a Study Program by the Advisor ([Link](#))

4.11. Proposing a Research Topic for a Master's Degree ([Link](#))

4.12. Submission Date for Research Topics

If the academic department has made no other requirement, research topics should be submitted by the middle of the study program.

4.13. Students Applying for or Receiving a Scholarship

These students are required to submit a research thesis topic according to the procedures that apply to scholarship recipients, as detailed in the "Scholarships" section. These are the terms for submitting a research thesis topic:

- Meeting prerequisite requirements (only regular students will be permitted to submit a research topic).
- Completing the "research ethics" requirement.
- Including key words for the research.

4.14. Grading the Student's Progress ([Link](#))

a. At the end of each semester, the advisor will evaluate and grade the student's progress in their research. The grade must reliably reflect the student's efforts, progress, and achievements, including during the thesis writing stage. This grade serves as an important parameter in evaluating the student's academic state of affairs.

b. A delay in submitting the grade may adversely affect the student (their scholarship might be terminated, or a committee discussion may be held). Once a grade has been given, it cannot be changed.

c. A low grade may adversely affect the student's scholarship; the matter is at the discretion of the vice dean who is in charge of this topic.

4.15. Composition of the Exam Committee for the Final PhD Exam

According to Regulation no. 37.01, the exam committee for the final PhD exam will be assembled as follows:

Based on the graduate studies committee's recommendations, the dean will appoint a committee of three or more members comprised of the following:

a. The advisor, who will chair the exam committee.
b. A faculty member of the rank of associate professor or higher or a research faculty member of the same rank.
   - **Every advisor who served as a permanent advisor throughout the project must be included (we recommend working with a printout). A substitute advisor who was not active can submit a request in writing to be excluded as a member of the committee (while stating that they had nothing to do with the research). A substitute advisor who had anything to do with the research should be included as a member of the committee.**
   - **According to regulations, an additional examiner (who participated in the candidacy exam—aside from the advisor) must be included.**
c. An appropriately qualified professional expert who is not a Technion faculty member (an external examiner), who is not closely associated with the candidate, and is not their direct supervisor.
   The external examiner cannot be an accompanying teacher under any circumstances, even if they are associated with another faculty (no exceptions apply).
d. At least one of the examiners should have an academic rank that is equal to, or more senior, than that of the advisor.
   While this is only a recommendation, in cases where there is no other examiner who holds as high an academic ranking as the advisor, a letter must be attached explaining why this is the case.
e. If there are two advisors, the exam committee will include at least four members and will be chaired by the primary advisor. The other advisor and members will be determined according to sections b, c, and d above.

If there are three advisors, three additional examiners will be appointed according to the regulations.

f. If the dean decides to appoint more than three members, these will be academic faculty members of the rank of associate professor and above; research faculty members of equal ranking; faculty members of the rank of lecturer who have PhD degrees; or professional experts from outside the Technion who are appropriately qualified, who are not studying at the school and who are not the student's direct supervisors.

g. Aside from the advisor(s), the examiners will be appointed after they announce that they are willing to serve as examiners. The examiners must submit their position in writing within two months from the day they receive the final paper.

Prior to signing the proposal form, please make sure it has been filled in correctly (including the examiners' academic rank, their connection to the research, the external examiners email addresses, the way they prefer to receive the paper, etc.). If the form states that a certain examiner has had no connection to the research, please ensure that this is in fact accurate (e.g., that no joint paper is being written).

Remote examination:

According to the regulations, the examiners and candidate must be present for the exam. Special cases need to be approved by the dean of the school a reasonable period of time in advance. If an examiner's absence has been approved, they will be required to participate via telephone or other electronic means during the exam and they will approve the exam results and report by signing it. An external examiner <u>cannot</u> be a "remote examiner."

4.16. Composition of the Exam Committee for the Final Master's Exam

<u>According to Regulation no. 29.01, the exam committee for the final master's exam will be assembled as follows:</u>

Based on the graduate studies committee's recommendations, the dean will appoint a committee of three or more members comprising the following:

a. The advisor, who will chair the exam committee.

b. One or two academic faculty members of the rank of lecturer or above or equally ranking research faculty members.

Every advisor who served as a permanent advisor throughout the project must be included (we recommend working with a printout). A substitute advisor who was not active while they were substituting can submit a request in writing to be excluded as a member of the committee (while stating that they had nothing to do with the research). A substitute advisor who has had anything to do with the research should be included as a member of the committee.

c. A professional expert on the research topic who is not from the same department (an external examiner), is not closely associated with the candidate, and is not their direct supervisor. <u>In special cases</u>, an accompanying teacher from the same department can serve as an external examiner, subject to the stipulations of this sub-paragraph and provided they have no direct relationship with the candidate.

    ° **According to the regulation, a letter explaining why the case is special must be attached. In addition, there must be no relationship between the accompanying teacher and the student, including a working relationship.**

    ° **If a co-advisor is from a different faculty than that of the primary advisor, the external examiner needs to be from a third faculty (different from those of the advisors).**

d. At least one of the examiners should have an academic rank that is at least as senior as that of the advisor.

While this is only a recommendation, in cases where no other examiner has as high an academic ranking as the advisor, a letter must be attached explaining why this is the case.

e. If there are two advisors, the exam committee will comprise at least four members and will be chaired by the primary advisor. The other advisor and members will be appointed according to paragraphs b, c, and d above.

If there are three advisors, three additional examiners will be appointed according to the regulations.

f. If the dean decides to appoint more than three members, they will be appointed in accordance with the requirements of paragraphs b, c, and d above.

g. If the paper is a capstone paper, the exam committee will consist of the advisor(s) and another examiner who has an appropriate level of expertise, provided they have no direct relationship with the student.

Prior to signing the proposal form, please make sure it has been filled in correctly (including the examiners' academic rank, their connection to the research, the external examiners' email addresses, the way they prefer to receive the paper, etc.). If the form states that a certain examiner has had no connection to the research, please ensure that this is in fact accurate (e.g., that no joint paper is being written).

Remote examination:

According to the regulations, the examiners and candidate must be present for the exam. Special cases need to be approved by the dean of the school a reasonable period of time in advance. If an examiner's absence has been approved, they will be required to participate via telephone or other electronic means during the exam and they will approve the exam results and report by signing it. An external examiner cannot be a "remote examiner."

4.17. Distancing the External Examiner from the Advisor at the Master's and PhD Candidacy Exam Committees

According to the Graduate School's dean's notice for the 2020–2021 academic year regarding the procedure for distancing the external examiner from the advisor in the master's and PhD candidacy exam committees, the rules must be followed in the spirit of the new procedure. The procedure outlines that:

"General Background

The academic regulations require that the master's and PhD candidacy exam committees must include an external examiner. The external examiner in the final exams for master's and PhD degrees must not belong to the same department (this probably refers to the student's department, however it is also reasonable to assume that is could refer to the advisor's department). For PhD final exams specifically, the external examiner cannot be

associated with the Technion. While the regulations state that the external examiner cannot belong to the department or Technion, we at the Graduate School, the senior vice presidents, and deans (past and present) understand it that in essence, they seek to distance the external examiner in a broader sense. Following are some extreme examples. It is unreasonable for an industrialist who until a year ago held the appointment of faculty attaché to serve as the **only** external examiner. Such an examiner is too "close" to the department, even though they are not affiliated with it at the time of the exam. It is also unreasonable for a faculty member at Tel Aviv University who completed their PhD studies a year ago under the supervision of the student's advisor to serve as the **only** external examiner. It is unreasonable for a faculty member from Ben Gurion University of the Negev who served as the student's advisor's doctoral advisor until three years ago to serve as the **only** external examiner. Such examiners are "too close" to the advisor to fulfill the essence of the regulations. We will now only address the matter of closeness between the external examiner and the advisor; however, distance should also be maintained between (a single) external examiner, the department, and the student."

Processing at the Graduate School Up to This Stage

Final exams are processed by the Graduation Office under the academic responsibility of the dean of the school, while candidacy exams are processed by the Students' Progress Office under the responsibility of the school's vice dean. Naturally, the dean and vice dean take measures to ensure a uniform policy regarding matters of principle such as the matter discussed here. Until a year ago, the forms for proposing the establishment of an exam committee did not include any questions addressing the existence of a relationship between the external examiner and the advisor, nor between the external advisor and the student (other than in regards to any involvement the external examiner may have had with the research). The school relied on the Associate Dean for Graduate Studies and Academic Affairs and the departmental graduate degree committee to prevent cases where such a meaningful relationship existed. Master's and PhD Graduation Stages (Link), and the PhD Candidacy Exam (Link)

a. The brief description (pre-doctoral) (link)
b. Guidelines for submitting the brief description (link)

4.18. Intellectual Property and Publication Rights (**[Link](#)**)

- Rights to intellectual property developed as part of the research will belong to the Technion unless otherwise agreed upon in advance in coordination with the school, the advisor, and the student. Any publication ensuing from the research thesis/project/final paper requires the consent of the advisor and the student (Regulations 29.12 and 37.12).
- For further details regarding [intellectual property regulations](#), please contact the Department of Business Affairs, at tel. 8294851.

5. Guidelines for Writing a Thesis Research Proposal

5.1. The Purpose of the Thesis Research Proposal

The purpose of the thesis research proposal is to concisely present the proposed research topic; position the topic in relation to the existing international literature; present the research questions or hypotheses (depending on the type of methods proposed) in a focused way; specify the research methods; and present its theoretical and/or practical and applied contribution, as applicable.

5.2. The Structure of the Thesis Research Proposal

The recommended components of the paper are generally as follows:

a. **Abstract:** Presents a brief description of the proposed research and the key points of the proposal. Recommended length: <u>no more than half a page</u>.

b. **Introduction:** Providing general background on the research field and a general framework for understanding the research topic. The introduction describes the phenomenon under investigation and explains why the specific research question was chosen. The introduction can begin with a general statement on the topic and then transition to focusing on the central questions it raises. The introduction is not a literature review but a gateway to the proposal that describes the investigated phenomenon, positions it in relation to the existing literature, and raises the question or questions the research will focus on. Recommended length: <u>no more than 1–2 pages</u>.

c. **Literature Review:** This section presents a review of the literature relevant to the research. It is important to note that the literature review must be pertinent and purposeful. In general, the literature review has three general purposes:

1. The review provides a critical and pertinent report on what has been happening in the research field ("What does the existing research have to say about the phenomenon under investigation?"). It positions the current research in relation to this literature. The goal here is for the student to show that they are familiar with the existing literature dealing with their proposed research topic.

2. When the research deals with methodological development, methodologies of other studies conducted on the topic must be addressed.

3. It addresses the research gap in the existing literature and how the proposed research is designed to fill the gap.

The literature review ultimately provides the foundation for the research questions and hypotheses. Therefore, at the end of this section we recommend summarizing the literature review and laying the foundation for presenting the research questions/goals and/or hypotheses. Recommend length: <u>3–4 pages</u>.

d. **Research Questions/Hypotheses and Goals:** This section presents the research goals and questions or hypotheses (depending on the type of research and method). If the research is quantitative, it must present hypotheses. Recommended length: <u>up to 1 page</u>.

e. **Research Methods:** This section specifies how the research will be conducted. The method chosen must be suited to the research and its goals. This section should generally include the following items:

1. <u>Type of method</u>: Clearly define whether the research method is qualitative, quantitative, or mixed. You must address the proposed method type and expound the issue over several sentences.

2. <u>Research population</u>: Define the population the research seeks to investigate. This could refer to people, groups, structure, cities, or anything else.

3. <u>Data collection and research tools</u>: What data does the research seek to collect? Where will it come from? How will it be collected? Will questionnaires be used, and if so, will these be existing questionnaires or will the student develop their own questionnaire, or a different method?

4. <u>Sampling</u>: If sampling is going to be conducted, it needs to be described here.

5. <u>Procedure</u>: Describe the various research stages, e.g., how the data will be collected along with any instructions regarding the data collection, etc.

6. <u>Data analysis</u>: Describe how the data will be analyzed, i.e., the analysis method. Recommended length:<u> 3–4 pages</u>. The research method must be as specific as possible within the recommended 3 to 4-page limit.

f. **Contribution:** State the research's expected contribution, which may be theoretical, practical, and/or applied. The purpose of this section is to convince its readers that the research should be conducted and that its expected contribution is worthwhile. Recommended length:<u> half a page</u>.

g. **List of References:** This list must include all the references cited in the paper. There are several academic referencing styles. The accepted style at the faculty is that of the American Psychological Association, known as APA. Instructions on how to write a list of references in APA style can be found on the APA website.

5.3. Length and Formatting of the Thesis Research Proposal

- The proposal should be no longer than 10 pages, not including the list of references.
- The recommended line spacing is 1.5.
- The recommended font for proposals written in English is Times New Roman and Arial or David for proposals written in Hebrew.
- The cover page must include the name of the faculty and track followed by the title of the work in both Hebrew and English, the first title appearing in the language in which the proposal in written. This is then followed by the student's name, the advisor's name, the submission date, and a space for the advisor(s) signature(s).

6. Faculty Guidelines for Writing an Expanded Seminar Paper

6.1. Definition

The purpose of the expanded seminar is to allow students who are not on a thesis track to gain experience conducting research. The seminar includes the components of standard research; however, it is more limited in scope in terms of the literature and empirical research it involves. The work of architects, landscapers, and planners often involves dealing with questions related to town planning and social, economic, physical, and environmental development. The ability to address these questions require knowing how to conduct research. Therefore, students need to demonstrate their knowledge and experience as it relates to research in general and specifically to applied research. Accordingly, the *advanced seminar* offers students an opportunity to deal with research questions, methods, empirical research, and data collection and analysis as well as a theoretical framework for understanding the world through the spatial and urban issues investigated.

6.2. Registration and Choosing a Topic

- In the first stage, students need to secure an advisor who is a lecturer from their track or the Faculty of Architecture.
- Students are highly encouraged to choose a topic they are interested in and suggest it to the lecturer they choose as their adviser.
- The topic of the paper will be determined at the start of the advising process.
- The student will register for the seminar in the Graduate Studies Office. Registration includes the advisor's name and the title of the paper.

6.3. Structure and Components of the Seminar Paper

The recommended components of the seminar paper are generally as follows:

a. **Abstract:** Includes a brief description of the proposed research and its key points. The abstract does not include any references. Recommended length: no more than one page.
b. **Introduction (Chapter 1):** Provides general background on the research field and a general framework for understanding the research topic. The introduction explains why the student chose the specific research question. It can begin with a general statement on the

topic and then focus on the central questions it raises. The introduction is not a literature review but a gateway to the paper. It presents general background on the investigated phenomenon, positions it in relation to the existing literature, and raises the question or questions the research will focus on. It also presents the paper's argument and the research's potential contribution. Recommended length: no more than 2–3 pages.

c. **Scientific Background (Chapter 2):** This section presents a review of the literature relevant to the research. In general, the student is required to concisely present the relevant literature and position their research in relation to it. The goal here is for the student to show that they are familiar with the existing literature on their research topic. At the end of this chapter students are highly encouraged to present a summary of the literature review and lay the foundation for the research questions/goals and/or hypotheses. Recommend length: 5–10 pages.

d. **Research Questions/Hypotheses and Goals (Chapter 3):** This chapter presents the research goals and questions or hypotheses (depending on the research type and method). Recommended length: up to 1 page.

e. **Research Methods (Chapter 4):** This chapter specifies how the research was conducted. The student must choose a method suited to the research and its goals. This chapter should generally include the following items:

1. *Type of method:* Clearly define whether the research method is qualitative, quantitative, or mixed.

2. *Research tools:* What is the proposed data collection method? Does it involve questionnaires, for example, and what is the source of the data?

3. *Sampling:* If sampling was conducted, describe it here.

4. *Procedure*: Describe the various research stages, e.g., the data collection process along with any instructions given regarding data collection, etc.

5. *Data analysis:* Describe how the data was analyzed, i.e., the analysis method.

Chapter 4 recommended length: 2 pages.

f. **Findings (Chapter 5):** This chapter presents the data collected and its analysis—statistical analyses in quantitative research and the themes or categories that emerged in qualitative research. The data should be presented in tables, illustrations, graphs, and text, in a way that reflects the research's major findings. As we are dealing with the spatial field, the

presentation should be as aesthetic as possible. Recommended length: as needed, based on the research and specific findings and the required level of analysis.

g. **Discussion (Chapter 6):** This chapter discusses the findings and interprets them in the context of the literature review presented in the paper itself. Therefore, we recommend including the following components:

1. A brief review of the findings and conclusions regarding the research hypotheses or questions (generally answering the question of whether the findings were as anticipated).

2. How the findings relate to the theories presented in the literature review.

3. The limitations of the research. This is an important section as ultimately the research is limited in scope, as stated in Paragraph 7.1. above.

4. Recommendations for planning practices and policies in Israel or beyond.

h. **List of References:** This list must include all the references cited in the paper. There are several academic referencing styles. The accepted style at the faculty is that of the American Psychological Association, known as APA. Instructions on how to write a list of references in APA style can be found on the APA website.

7. Mentoring Graduate Students

One of the enduring challenges of our profession is **successfully mentoring our graduate students** from initiation to the successful submission of their research thesis. Although it is one of our main tasks as faculty members, very few of us (if any) have had any formal training on how to mentor. We rely on our common sense, our own role models (for better and for worse), and our joint experience.

Based on these, we offer a few recommendations to help faculty members improve their mentoring skills:

1) **Recognize your own mentoring style and make sure that you make it known to potential students**. Some of us are more active and some more passive. Some prefer to let students "figure things out" while others like "showing them the way." Each student is unique and performs best with a particular mentoring style. What is important here is that potential students **know what to expect of you** as a mentor and whether your style suits them. **Our diverse mentoring styles is a strength** that makes it possible for us to appeal to all types of students.

2) **The mentor and student should align their expectations of one another prior to starting the research**. Before entering into a formal mentor-student relationship, the mentor should carefully articulate what they expect of the student regarding their attendance at the faculty (both the mentor's and the student's), attending regular one-on-one meetings, participation in the research group, the student's level of independence in their work, etc. Likewise, the mentor should ask the student exactly what they expect of the mentor in terms of the frequency of interaction, availability, level of assistance, etc.

3) **Be responsible!** Regardless of your mentoring style, **the faculty advisor assumes responsibility for providing the student with proper guidance in all aspects of their research** (see the attached document). This includes conducting regular meetings, providing prompt and thorough feedback on writing, helping the student secure the resources they need to conduct and complete the research, and overseeing the research process through to its conclusion. As one of the linked articles points out, **supportiveness** is the most important component of the graduate student's experience.

4) **Let your student into your professional world**. Introduce them to your colleagues and professional networks, encourage them to present their work publicly, accompany them to conferences, and put them in the spotlight when possible.

5) **Be compassionate!** Being a graduate student is extremely rewarding (otherwise we would not be here), however it is also extremely stressful and demanding. As mentors we sometimes need to push our students—but we need to do this sensitively and with the appropriate amount of force.

6) Finally, we recommend **reading these two short articles** from online magazines *Science* and *Nature*, respectively, on what it takes for a thesis/PhD advisor to be successful. These should be helpful to anyone interested in improving their mentoring skills (and some of the answers might surprise you!).

a. https://www.sciencemag.org/careers/2019/04/what-matters-phd-adviser-here-s-what-research-says

b. https://www.nature.com/articles/d41586-018-06959-0

8. The Technion's Intellectual Property Regulations

([Link](#))

Technion – Israel Institute of Technology

Intellectual Property Regulations[5]

Approved by the Technion's Board of Directors on 27 April, 1999

Introduction

The Technion's intellectual property policy is based on the objective of creating and distributing knowledge to benefit society. The way the knowledge is distributed is determined by those who create it: academic freedom takes priority over financial gains. Protecting knowledge is of great importance for protecting the best interest of the Technion and its employees and in order to achieve the greater public good. Protected intellectual property rights that are not in the public domain hold financial potential when they are commercialized. Protecting intellectual property goes beyond the protection of financial assets that could bear fruit in the future; it is part of the Technion's public duty to make technology available for the benefit of society and to promote industry and the economy. The Technion helps its employees protect and distribute intellectual property while maintaining the Technion's primary goals. Intellectual property created through significant use of the Technion's resources belongs to the Technion, however the products of its commercialization will be divided between the Technion and the creators. The Technion has adopted these Regulations for the following reasons: to encourage implementation of the results of studies conducted at the Technion; to help in assessing and determining the appropriate division of rights; to enable the submission of applications for registering patents or commercializing knowledge; to assist in securing funding for research; and to provide uniform procedures regarding patents and commercialization where the Technion has rights. These Regulations serve as the guidelines of the Technion – Israel Institute of Technology and/or of the Technion Research and Development Foundation Ltd. (hereinafter: "The Technion"), in relation to rights and duties pertaining to inventions, developments and discoveries, patent registration and commercial exploitation thereof, and prevention of conflicts of interests. These Regulations are binding on the

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[5] https://graduate.technion.ac.il/wp-content/uploads/2016/10/Takanon.pdf

Technion and its employees and are an integral part of the Technion's terms of employment for any employee who began their employment prior to the date of which these Regulations were approved. These Regulations constitute the Technion's interpretation of the Patent Regulations dated 17 June, 1962. If an employee believes there is a discrepancy between the previous regulations and these Regulations, the employee can contact the executive vice president for research regarding the rights they believe they are entitled to under the previous regulations. The executive vice president for research will deliberate on the application and arrive at a decision.

2) <u>Definitions</u>

2.1. <u>Employee</u>: Anyone permanently or temporarily employed by the Technion, including employees on sabbatical, in training, or on unpaid leave and/or any other temporary absence.

2.2. <u>Researcher who is not an employee</u>: A person engaged in research and/or joint research with Technion employees who uses Technion resources, e.g., students, trainees, scholarship recipients, researchers from other institutions, retired employees and faculty members, academic guests, and others, unless explicitly stated otherwise.

2.3. <u>Inventor</u>: An employee, group of employees, or researcher who is not an employee who have discovered, developed, or created an invention.

2.4. <u>Invention</u>: For the purpose of these Regulations, the term "invention" refers to scientific, engineering, technological, technical, medical, biological, or chemical knowledge and/or concepts, including processes, algorithms, software, hardware, materials, formulas, and unique information as well as any development and improvement of an original invention, in relation to which an employee intends to do one or more of the following: a) submit a patent application on their own or through a third party; b) grant commercial rights to it; c) keep confidential for the purpose of commercial exploitation; d) use themselves or any other type of use for the purpose of manufacturing a product or generating financial gains.

2.5. <u>Exempt invention</u>: An invention that complies with the stipulations of Section 7 below.

2.6. <u>Patent committee</u>: Appointed from time to time by the executive vice president for research to deliberate and decide whether to obtain protection for an invention.

2.7. <u>Business unit</u>: The Business Unit at the Technion Research and Development Foundation Ltd. or that of any other institution that the Technion decides will replace it for the purposes of this procedure.

3. <u>The Right to Publish</u>

3.1. As an academic institution, the Technion is committed to allowing and encouraging its academic faculty members, researchers, and students to publish their research results and this right supersedes any other commitment under these Regulations.

3.2. Despite the foregoing, the right to publish is subject to rights granted to a third party as part of a funded study and/or consultation and/or any other research, in regard to which the faculty member and/or their student and/or any other entity participating in the research have signed an undertaking to abstain from or postpone publication, as specified in the undertaking.

3.3. The aforementioned right to publish does not apply to employees who are not academic faculty members, researchers, or students.

4. <u>Duty of Disclosure</u>

4.1. An inventor must inform the Technion of any invention through the Invention Disclosure Form. This should be done as close as possible to when the discovery is made and in any event prior to granting any rights or entering into any agreement with a third party.

4.2. For the removal of doubt, it is hereby clarified that the duty of disclosure also applies to exempt inventions.

4.3. If an inventor believes a certain invention should be considered as an "exempt invention" and that the rights to it should not be transferred to the Technion as specified in Section 7 below, they should specify their arguments in writing on the Invention Disclosure Form.

4.4. An inventor who makes an invention available for commercial application without giving notice as aforementioned in Section 3.1. above will be considered to have waived the argument that the invention is an "exempt invention."

5. <u>Sabbatical or Unpaid Leave</u>

5.1. An employee who goes on sabbatical or unpaid leave who is considering signing a document to transfer their rights to their employer during the sabbatical or unpaid leave (or whose employer during that period is entitled to ownership over these assets) needs to fill in an Invention Disclosure Form if they have an invention or are at the beginning of developing one, prior to going on sabbatical. They also need to inform their employer during their sabbatical or unpaid leave that they have submitted an Invention Disclosure Form to the Technion.

5.2. Subject to the above, the rules of the hosting institution shall apply to intellectual property developed while on sabbatical or unpaid leave.

5.3. An employee returning from sabbatical or unpaid leave will inform the Technion upon their arrival of any invention or start of an invention developed while they were on sabbatical or unpaid leave.

5.4. If while on sabbatical or unpaid leave the employee invents an invention, the full rights to which the hosting institution was not entitled to begin with, the matter of the Technion's rights will be determined by the vice president for research after receiving the patent committee's recommendation, based on the following criteria:

> 5.4.1. If the invention was patentable before the employee went on sabbatical or unpaid leave, or if the employee invented it by making significant use of the Technion's resources and it was only improved or advanced during the sabbatical or unpaid leave, the Technion will have only partial rights compared to what it would have had owned had the entire development taken place at the Technion. This will be determined on a case-by-case basis.

> 5.4.2. If the invention became patentable due to the employee's activity while on sabbatical or unpaid leave, no significant use of the Technion's resources was made, and the employee has no intention of continuing to develop or improve the invention at the Technion, the invention will belong to the employee.

6. Ownership of an Invention

6.1. Subject to the inventor's right to part of the revenues derived from the invention, as specified below, the Technion shall have ownership of all inventions and related intellectual property.

6.2. An invention created by a student will remain the student's property. However, when the invention was created by the student while they were employed by the Technion, or while conducting research or engaged in a project financed by the Technion and/or a third party, or under the supervision of a Technion faculty member serving as their advisor, or when the student is receiving an academic scholarship—the rules that apply to inventors apply to the student. The advisor will also be considered an inventor and the Technion will have ownership of the invention and related intellectual property.

6.3. If research or related activity is conducted based on an agreement between a third party and the Technion, ownership of the invention rights will be determined based on the stipulations of this agreement. An inventor who participates in such research activity is bound by the terms of the agreement. During the negotiations the Technion will strive to advance and protect its intellectual property rights.

6.4. The business unit will exclusively handle all inventions with commercial value, including patent registration and their commercial exploitation.

6.5. The patent committee will determine whether to obtain protection for an inventor's invention.

7. **Exempt Inventions**

Notwithstanding the above, an invention shall remain in the full ownership of the inventor if they have made such a request in the Invention Disclosure Form and proven to the patent committee that all the following conditions have been met:

    a. The invention does not originate from research or a project conducted at the Technion.
    b. The invention was created by the employee alone without the participation of and/or assistance from anyone affiliated with the Technion, including researchers, students, academic guests, and others.
    c. The invention was not created at the Technion's facilities or by making significant use of the Technion's resources.
    d. The continued development and handling of the invention and its commercial aspects will not involve significant use of the Technion's resources.

e. The inventor must ensure that a third part who acquires rights to an exempt invention confirms that they are aware that the agreement is a personal one vis-à-vis the inventor and is unrelated to the Technion.

The patent committee will deliberate the request and inform the inventor of its decision.

8. <u>Notice of an Invention</u>

8.1. Subject to the right to publish, as aforementioned in Section 3 above, any inventor who invents any type of invention (regardless of whether or not they believe it is an "exempt invention") is obligated to submit in writing, immediately and without delay, all the details, information, documents, plans, drawings, etc. necessary for examining the nature of the invention. The employee must keep detailed records in a "lab notebook" describing the course of the invention's development, with the understanding that these entries may be vital for protecting intellectual property related to the invention.

8.2. This information must be disclosed through the Invention Disclosure Form and all the details required on the form must be addressed.

8.3. The notice will be sent to the business unit, the head of the employee's department and the patent committee.

8.4. The patent committee may require expert opinions on the invention. The committee will deliberate and decide whether to register a patent.

8.5. Once the patent committee makes the decision, the business unit will inform the inventor as soon as possible of one of the following possible outcomes:

8.5.1. The Technion intends to submit a patent application.

8.5.2. The Technion has decided to waive its rights to the invention.

8.5.3. The Technion intends to exploit the invention without registering a patent.

8.6. In the event that the business unit does not notify the inventor of its decision within six months from the date the notice was submitted or within any other period of time coordinated with the inventor, this shall be deemed as the Technion's waiver of rights to the invention. In such an event, and in cases where the business unit has informed the inventor that the Technion is waiving its

rights, no obligations stemming from these Regulations shall apply to the inventor regarding that invention. The provisions of this section shall apply also in cases where the Technion has not applied for a patent or taken any measures to exploit the invention without registering a patent without reasonable justification, within six months from the date the patent committee made its decision, or within another length of time coordinated with the inventor. In the event of disagreements regarding the reasonableness of the justification for delaying action beyond six months, the Technion's president will deliberate and arrive at a decision on the matter. Notwithstanding the above, if in such cases the inventor exploits the invention in any way, the Technion will be entitled to receive 20% of the invention's profit.

9. Submitting a Patent Application

9.1. Once the patent committee has decided to apply for patent registration, the Technion will register the patent in various countries from time to time, as determined by the business unit.

9.2. The inventor will cooperate on all aspects related to preparing the patent application and its registration, including signing all the necessary documents. The inventor will disclose all the details required for obtaining protection of the invention.

9.3. Verbal or written details pertaining to the invention are not to be disclosed or published without the approval of the business unit or anyone it has appointed on its behalf as aforementioned, unless the business unit does not intend to submit a patent application for the invention or exploit it in any other way.

9.4. The inventor will cooperate in all matters related to commercial exploitation of the invention, while providing advice and information on their field of expertise, as required by the Technion.

9.5. The Technion may stop handling the patent registration, its maintenance, and the commercial exploitation of the invention at any stage. In such an event, the Technion will inform the inventor of its decision as soon as possible once the decision has been made. The inventor will be entitled to exploit the invention in any way they please and the Technion will be entitled to 20% of the profit of the invention, as stipulated in Section 8.6.

10. The Rights of the Technion and the Inventor

10.1. The Technion will deduct all the expenses invested in all the activities related to executing the stipulations of these Regulations from the profits of commercializing the invention. The remaining balance will constitute the net revenue for distribution.

10.2. The net revenue will be equally divided between the Technion and the inventor. When there is more than one inventor, half the net revenue will go to the Technion and the remaining half will belong to the group of inventors. The distribution of the revenue between the various inventors will be based on a mutual agreement between them. If the invention stems from a student's research as mentioned in Section 6.2., half the net revenue will go to the Technion, a quarter to the advisor, and a quarter to the student. In cases of a disagreement regarding whether or not an invention should be considered an "exempt invention," the distribution will be different, based on a mutual agreement between the Technion and the inventor. In cases of disagreements regarding revenue distribution, the matter will be determined by the executive vice president for research.

10.3. The Technion or anyone it appoints on its behalf for this purpose will manage separate accounts for each invention and allow the inventor or their representatives to review the accounts.

10.4. If the invention stems from work financed by a third party, the provision of the agreement between the Technion and this third party shall apply. In cases where the Technion stands to gain any type of benefit from the exploitation of the invention under that agreement, this benefit will be divided equally between the Technion and the inventor, subject to the provisions of these Regulations.

10.5. The rights of the inventor and their legal heirs shall remain in effect even if the inventor has left the Technion.

11. **Preventing Conflicts of Interest**

Below are guidelines for Technion employees on how to conduct relationships with business entities:

a. The employee's commitment and obligations to the Technion supersede any undertaking toward any business entities whatsoever, as the Technion is the employee's employer.

b. An employee on sabbatical or unpaid leave will take measures to prevent a conflict of interest with the Technion and will be exempt from their commitment to the Technion in regard to an

invention created while they were on sabbatical or unpaid leave only in accordance with the stipulations of Section 5 above.

c. During these periods, the employee will be prohibited from transferring knowledge and/or an invention created prior to having gone on unpaid leave, sabbatical, or paid vacation.

d. An employee providing consulting services to a third party, in accordance with the Technion's academic regulations, shall take measures to prevent a conflict of interest with the Technion. While providing these consulting services, the employee will fulfil their all commitments to the Technion, including the stipulations of these Regulations and non-disclosure of confidential information related to inventions.

12. **Applicability**

The provisions of these Regulations apply to all inventors throughout their employment at the Technion and at all times after ending their employment at the Technion. These Regulations are binding on both the inventors and their legal heirs, their estate administrators, the executors of their will and/or anyone acting on their behalf in any form whatsoever, according to the specific case.

9. Plagiarism

9.1. Checking Papers before Submission

- The world of academic publication is broad and databases are constantly evolving and expanding.
- New media makes it possible to check for plagiarism in innovative and accurate ways. Such checks are impossible to avoid nowadays.
- It is important to note that sometimes plagiarism may be unintentional, yet part of the work intended for publication may be suspected as such. For this purpose, there are tools and software available at the Technion for accurately checking the level of plagiarism.
- Academic plagiarism is considered an extremely serious offence.
- It can significantly harm the researcher's future career.
- Civil action may be brought against plagiarists.
- There are currently many software programs that check for plagiarism.
- <u>In the event of suspected plagiarism, software can be used to verify the matter.</u>[6]
- Disciplinary proceedings will be taken against students who plagiarize, according to the Technion's regulations.
- Following is the definition of plagiarism as defined by Harvard University:[7]

    "In academic writing, it is considered plagiarism to draw any idea or any language from someone else without adequately crediting that source in your paper. It doesn't matter whether the source is a published author, another student, a website without clear authorship, a website that sells academic papers, or any other person: taking credit for anyone else's work is stealing, and it is unacceptable in all academic situations, whether you do it intentionally or by accident."

    The University of Oxford defines plagiarism as:[8]

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[6] The vice dean for research can be consulted with on the matter.

[7] Harvard University: file:///C:/Users/user/Downloads/Gu_as_de_Harvard_sobre_plagio.pdf

[8] University of Oxford: https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism?wssl=1

See also, the University of London: https://onlinelibrary.london.ac.uk/sites/default/files/files/guides/PLAGIARISM-FINAL.pdf

"Plagiarism is presenting someone else's work or ideas as your own, with or without their consent, by incorporating it into your work without full acknowledgement. All published and unpublished material, whether in manuscript, printed or electronic form, is covered under this definition. Plagiarism may be intentional or reckless, or unintentional. Under the regulations for examinations, intentional or reckless plagiarism is a disciplinary offence."

- The University of Oxford goes on to define various forms of plagiarism:[9]
  - **"Verbatim (word for word) quotation without clear acknowledgement**
    Quotations must always be identified as such by the use of either quotation marks or indentation, and with full referencing of the sources cited. It must always be apparent to the reader which parts are your own independent work and where you have drawn on someone else's ideas and language.
  - **Cutting and pasting from the Internet without clear acknowledgement**
    Information derived from the Internet must be adequately referenced and included in the bibliography. It is important to evaluate carefully all material found on the Internet, as it is less likely to have been through the same process of scholarly peer review as published sources.
  - **Paraphrasing**
    Paraphrasing the work of others by altering a few words and changing their order, or by closely following the structure of their argument, is plagiarism if you do not give due acknowledgement to the author whose work you are using.
  - A passing reference to the original author in your own text may not be enough; you must ensure that you do not create the misleading impression

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[9] University of Oxford :https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism?wssl=1

that the paraphrased wording or the sequence of ideas are entirely your own. It is better to write a brief summary of the author's overall argument in your own words, indicating that you are doing so, than to paraphrase particular sections of his or her writing. This will ensure you have a genuine grasp of the argument and will avoid the difficulty of paraphrasing without plagiarizing. You must also properly attribute all material you derive from lectures.

- **Collusion**

  This can involve unauthorized collaboration between students, failure to attribute assistance received, or failure to follow precisely regulations on group work projects. It is your responsibility to ensure that you are entirely clear about the extent of collaboration permitted, and which parts of the work must be your own.

- **Inaccurate citation**

  It is important to cite correctly, according to the conventions of your discipline. As well as listing your sources (i.e. in a bibliography), you must indicate, using a footnote or an in-text reference, where a quoted passage comes from. Additionally, you should not include anything in your references or bibliography that you have not actually consulted. If you cannot gain access to a primary source, you must make it clear in your citation that your knowledge of the work has been derived from a secondary text (for example, Bradshaw, D. Title of Book, discussed in Wilson, E., Title of Book (London, 2004), p. 189).

- **Failure to acknowledge assistance**

  You must clearly acknowledge all assistance which has contributed to the production of your work, such as advice from fellow students, laboratory technicians, and other external sources. This need not apply to the assistance provided by your tutor or supervisor, or to ordinary proofreading, but it is necessary to acknowledge other guidance which leads to substantive changes of content or approach.

- **Use of material written by professional agencies or other persons**

You should neither make use of professional agencies in the production of your work nor submit material which has been written for you even with the consent of the person who has written it. It is vital to your intellectual training and development that you should undertake the research process unaided. All members of the University are prohibited from providing material that could be submitted in an examination by students at this University or elsewhere.

- **Auto-plagiarism**

    You must not submit work for assessment that you have already submitted (partially or in full), either for your current course or for another qualification of this, or any other, university, unless this is specifically provided for in the special regulations for your course. Where earlier work by you is citable, i.e. it has already been published, you must reference it clearly. **Identical pieces of work submitted concurrently will also be considered to be auto-plagiarism."**

- Examples and an explanation on the matter can be found on the University of Oxford[10] and Harvard University's[11] websites.

9.2. Checking for Plagiarism

- o Lecturers, researchers, and students can use the software available at the Technion to check for plagiarism.
- o If the degree of similarity between what the student or researcher at the faculty has written and other material that has been published exceeds 20%, this is considered global plagiarism. Some journals check submitted papers for plagiarism before beginning the review process. If the similarity exceeds 20%, the paper is automatically rejected.
- o There is software specifically designed to check the degree of plagiarism, such as **iThenticate**.

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[10] https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism?wssl=1

[11] file:///C:/Users/user/Downloads/Gu_as_de_Harvard_sobre_plagio.pdf

o Go to the Technion's website to perform a plagiarism check:

https://library.technion.ac.il/he/research/plagiarism-check

Click on the links below to access the various available software programs for checking plagiarism:

1) Plagiarisma
2) PlagTracker
3) CopyScape
4) CheckText
5) Plagscan (free trial only)
6) PlagiarismcheckerX (free trial only)
7) COPYLEAKS Plagiarism Checker (free) – sign up for a free account and use it for an unlimited period to check up to 10 pages or 25,000 words once a month.

10. The Ethical Code of Conduct in Research

The Technion's code is based on the European Code of 2017:

The European Code of Conduct for Research Integrity[12]

Research is the quest for knowledge obtained through systematic study and thinking, observation and experimentation. While different disciplines may use different approaches, they each share the motivation to increase our understanding of ourselves and the world in which we live. Therefore, "The European Code of Conduct for Research Integrity" applies to research in all scientific and scholarly fields. Research is a common enterprise, carried out in academic, industry and other settings. It involves collaboration, direct or indirect, which often transcends social, political and cultural boundaries. It is underpinned by freedom to define research questions and develop theories, gather empirical evidence and employ appropriate methods. Therefore, research draws on the work of the community of researchers and ideally develops independently of pressure from commissioning parties and from ideological, economic or political interests. A basic responsibility of the research community is to formulate the principles of research, to define the criteria for proper research behavior, to maximize the quality and robustness of research, and to respond adequately to threats to, or violations of, research integrity. The primary purpose of this Code of Conduct is to help realize this responsibility and to serve the research community as a framework for self-regulation. It describes professional, legal and ethical responsibilities, and acknowledges the importance of the institutional settings in which research is organized. Therefore, this Code of Conduct is relevant and applicable to publicly funded and private research, whilst acknowledging legitimate constraints in its implementation. Interpretation of the values and principles that regulate research may be affected by social, political or technological developments and by changes in the research environment. An effective Code of Conduct for the research community is, therefore, a living document that is updated regularly and that allows for local or national

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[12]https://www.allea.org/wp-content/uploads/2017/05/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017.pdf

differences in its implementation. Researchers, academies, learned societies, funding agencies, public and private research performing organizations, publishers and other relevant bodies each have specific responsibilities to observe and promote these practices and the principles that underpin them.

1. Principles

Good research practices are based on fundamental principles of research integrity. They guide researchers in their work as well as in their engagement with the practical, ethical and intellectual challenges inherent in research.

These principles are:
- *Reliability* in ensuring the quality of research, reflected in the design, the methodology, the analysis and the use of resources.
- *Honesty* in developing, undertaking, reviewing, reporting and communicating research in a transparent, fair, full and unbiased way.
- *Respect for colleagues*, research participants, society, ecosystems, cultural heritage and the environment.
- *Accountability* for the research from idea to publication, for its management and organization, for training, supervision and mentoring, and for its wider impacts.

2. Good Research Practices
- We describe good research practices in the following contexts:
- Research Environment
- Training, Supervision and Mentoring
- Research Procedures
- Safeguards
- Data Practices and Management
- Collaborative Working
- Publication and Dissemination
- Reviewing, Evaluating and Editing

2.1 Research Environment

- Research institutions and organizations promote awareness and ensure a prevailing culture of research integrity.

- Research institutions and organizations demonstrate leadership in providing clear policies and procedures on good research practice and the transparent and proper handling of violations.

- Research institutions and organizations support proper infrastructure for the management and protection of data and research materials in all their forms (encompassing qualitative and quantitative data, protocols, processes, other research artefacts and associated metadata) that are necessary for reproducibility, traceability and accountability.

- Research institutions and organizations reward open and reproducible practices in hiring and promotion of researchers.

2.2 Training, Supervision and Mentoring

- Research institutions and organizations ensure that researchers receive rigorous training in research design, methodology and analysis.

- Research institutions and organizations develop appropriate and adequate training in ethics and research integrity to ensure that all concerned are made aware of the relevant codes and regulations.

- Researchers across the entire career path, from junior to the most senior level, undertake training in ethics and research integrity.

- Senior researchers, research leaders and supervisors mentor their team members and offer specific guidance and training to properly develop, design and structure their research activity and to foster a culture of research integrity.

2.3 Research Procedures

- Researchers take into account the state-of the-art in developing research ideas.

- Researchers design, carry out, analyze and document research in a careful and well considered manner.

- Researchers make proper and conscientious use of research funds.

- Researchers publish results and interpretations of research in an open, honest, transparent and accurate manner, and respect confidentiality of data or findings when legitimately required to do so.

- Researchers report their results in a way that is compatible with the standards of the discipline and, where applicable, can be verified and reproduced.

2.4 Safeguards

- Researchers comply with codes and regulations relevant to their discipline.

- Researchers handle research subjects, be they human, animal, cultural, biological, environmental or physical, with respect and care, and in accordance with legal and ethical provisions.

- Researchers have due regard for the health, safety and welfare of the community, of collaborators and others connected with their research.

- Research protocols take account of, and are sensitive to, relevant differences in age, gender, culture, religion, ethnic origin and social class.

- Researchers recognize and manage potential harms and risks relating to their research.

2.5 Data Practices and Management

- Researchers, research institutions and organizations ensure appropriate stewardship and curation of all data and research materials, including unpublished ones, with secure preservation for a reasonable period.

- Researchers, research institutions and organizations ensure access to data is as open as possible, as closed as necessary, and where appropriate in line with the FAIR Principles (Findable, Accessible, Interoperable and Re-usable) for data management.

- Researchers, research institutions and organizations provide transparency about how to access or make use of their data and research materials.

- Researchers, research institutions and organizations acknowledge data as legitimate and citable products of research.

- Researchers, research institutions and organizations ensure that any contracts or agreements relating to research outputs include equitable and fair provision for the

management of their use, ownership, and/or their protection under intellectual property rights.

2.6 Collaborative Working

- All partners in research collaborations take responsibility for the integrity of the research.

- All partners in research collaborations agree at the outset on the goals of the research and on the process for communicating their research as transparently and openly as possible.

- All partners formally agree at the start of their collaboration on expectations and standards concerning research integrity, on the laws and regulations that will apply, on protection of the intellectual property of collaborators, and on procedures for handling conflicts and possible cases of misconduct.

- All partners in research collaborations are properly informed and consulted about submissions for publication of the research results.

2.7 Publication and Dissemination

- All authors are fully responsible for the content of a publication, unless otherwise specified.

- All authors agree on the sequence of authorship, acknowledging that authorship itself is based on a significant contribution to the design of the research, relevant data collection, or the analysis or interpretation of the results.

- Authors ensure that their work is made available to colleagues in a timely, open, transparent, and accurate manner, unless otherwise agreed, and are honest in their communication to the general public and in traditional and social media.

- Authors acknowledge important work and intellectual contributions of others, including collaborators, assistants, and funders, who have influenced the reported research in appropriate form, and cite related work correctly.

- All authors disclose any conflicts of interest and financial or other types of support for the research or for the publication of its results.

- Authors and publishers issue corrections or retract work if necessary, the processes for which are clear, the reasons are stated, and authors are given credit for issuing prompt corrections post publication.
- Authors and publishers consider negative results to be as valid as positive findings for publication and dissemination.
- Researchers adhere to the same criteria as those detailed above whether they publish in a subscription journal, an open access journal or in any other alternative publication form.

2.8 Reviewing, Evaluating and Editing

- Researchers take seriously their commitment to the research community by participating in refereeing, reviewing and evaluation.
- Researchers review and evaluate submissions for publication, funding, appointment, promotion or reward in a transparent and justifiable manner.
- Reviewers or editors with a conflict of interest withdraw from involvement in decisions on publication, funding, appointment, promotion or reward.
- Reviewers maintain confidentiality unless there is prior approval for disclosure.
- Reviewers and editors respect the rights of authors and applicants, and seek permission to make use of the ideas, data or interpretations presented.

3. Violations of Research Integrity

It is of crucial importance that researchers master the knowledge, methodologies and ethical practices associated with their field. Failing to follow good research practices violates professional responsibilities. It damages the research processes, degrades relationships among researchers, undermines trust in and the credibility of research, wastes resources and may expose research subjects, users, society or the environment to unnecessary harm.

3.1 Research Misconduct and other Unacceptable Practices

Research misconduct is traditionally defined as fabrication, falsification, or plagiarism (the so-called FFP categorization) in proposing, performing, or reviewing research, or in reporting research results:

- Fabrication is making up results and recording them as if they were real.
- Falsification is manipulating research materials, equipment or processes or changing, omitting or suppressing data or results without justification.
- Plagiarism is using other people's work and ideas without giving proper credit to the original source, thus violating the rights of the original author(s) to their intellectual outputs. These three forms of violation are considered particularly serious since they distort the research record. There are further violations of good research practice that damage the integrity of the research process or of researchers.

In addition to direct violations of the good research practices set out in this **Code of Conduct**, examples of other unacceptable practices include, but are not confined to:
- Manipulating authorship or denigrating the role of other researchers in publications.
- Re-publishing substantive parts of one's own earlier publications, including translations, without duly acknowledging or citing the original ('self-plagiarism').
- Citing selectively to enhance own findings or to please editors, reviewers or colleagues.
- Withholding research results.
- Allowing funders/sponsors to jeopardize independence in the research process or reporting of results so as to introduce or promulgate bias.
- Expanding unnecessarily the bibliography of a study.
- Accusing a researcher of misconduct or other violations in a malicious way.
- Misrepresenting research achievements.
- Exaggerating the importance and practical applicability of findings.
- Delaying or inappropriately hampering the work of other researchers.
- Misusing seniority to encourage violations of research integrity.
- Ignoring putative violations of research integrity by others or covering up inappropriate responses to misconduct or other violations by institutions.
- Establishing or supporting journals that undermine the quality control of research ('predatory journals'). In their most serious forms, unacceptable practices are sanctionable, but at the very least every effort must be made to prevent, discourage and

stop them through training, supervision and mentoring and through the development of a positive and supportive research environment.

3.2 Dealing with Violations and Allegations of Misconduct

National or institutional guidelines differ as to how violations of good research practice or allegations of misconduct are handled in different countries. However, it always is in the interest of society and the research community that violations are handled in a consistent and transparent fashion. The following principles need to be incorporated into any investigation process.

Integrity

- Investigations are fair, comprehensive and conducted expediently, without compromising accuracy, objectivity or thoroughness.
- The parties involved in the procedure declare any conflict of interest that may arise during the investigation.
- Measures are taken to ensure that investigations are carried through to a conclusion.
- Procedures are conducted confidentially in order to protect those involved in the investigation.
- Institutions protect the rights of 'whistleblowers' during investigations and ensure that their career prospects are not endangered.
- General procedures for dealing with violations of good research practice are publicly available and accessible to ensure their transparency and uniformity.

Fairness

- Investigations are carried out with due process and in fairness to all parties.
- Persons accused of research misconduct are given full details of the allegation(s) and allowed a fair process for responding to allegations and presenting evidence.
- Action is taken against persons for whom an allegation of misconduct is upheld, which is proportionate to the severity of the violation.
- Appropriate restorative action is taken when researchers are exonerated of an allegation of misconduct.

- Anyone accused of research misconduct is presumed innocent until proven otherwise.

11. Postdoctoral Research at the Faculty: Scholarships, Procedures, and Expectations

11.1. Introduction: Attracting Outstanding Postdoctoral Researchers

The Technion's Faculty of Architecture and Town Planning seeks to attract outstanding postdoctoral researchers in the fields of architecture, special design, urban planning, landscaping, the environment, ecology, spatial economy, the history of architecture and special design, art, industrial design, technology and design, big data, transportation planning, and all the developing and innovative fields of knowledge related to spatial design.

11.2. Postdoctoral Fellowships

- The Glass-Balaban Foundation Fellowship is awarded every three years at the Technion's Faculty of Architecture and Town Planning.

Following are links to other scholarship programs:

- China and India: Scholarship Application Form for postdoctoral fellows from China and India 2019–2020
- The Ministry of Science: Postdoctoral scholarships from the Ministry of Science for 2018–2019
- Technion scholarships: Announcement of Technion fellowship programs for postdoctoral researchers and academic guests for 2019–2020
- The 2015 scientist exchange program
- The Fulbright Scholarship
- **The Zuckermann Scholarship**: Link to the website
- The Lady Davis Fellowship: Link to the Lady Davis Fellowship website
- British Council funding opportunities

11.3. Technion Procedures[13]

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[13] https://segel.net.technion.ac.il/he/post-doctorants-he/

- There are clear procedures for taking on postdoctoral fellows at the Technion, and these must be followed to the letter.
- There are procedures regarding beginning the fellowship, ending it, inviting fellows, salaries, travel expenses, etc.
- The procedures and respective forms can be found by clicking on the following links:
  - Notice of fellowship commencement
  - Notice of fellowship completion
  - Invitation to do a postdoctoral fellowship
  - Invitation to do a postdoctoral fellowship on a scholarship
  - Continuation of a postdoctoral fellowship
  - Extension of a postdoctoral fellowship
  - Travel expense refund request form
  - Opening a bank account
  - Changing the budget number for billing purposes

11.4. Procedure for Inviting Postdoctoral Fellows (**Link**)

- Extension of a postdoctoral fellowship
- Additional scholarship for a postdoctoral fellow
- Inviting a postdoctoral fellow
- Inviting a postdoctoral fellow (2)
- Fellowship commencement form
- Notice of fellowship completion
- Changing the budget number for billing purposes
- Opening a bank account
- Travel expense refund request form

11.5. Academic Guests

The Technion has clear procedures regarding academic guests. These can be viewed in the following links:

- [Announcing a guest's arrival](#)
- [Announcing a guest's departure (for a significant period of time)](#)
- [Inviting a guest to join a scholarship committee for a significant period of time](#)
- [Inviting a guest for a significant period of time](#)
- [Extending a guest's invitation for a significant period of time](#)
- [Raising a guest's salary](#)

12. Scholarships and Awards for Research Faculty

12.1. Technion Prizes under the Responsibility of the Office of the Vice President for Academic Affairs

Awards for outstanding achievements: **The Henry Taub Prize/The Norman Seiden Prize/The Cooper Award/The Diane Sherman Prize**

- For outstanding achievements by Technion researchers, prizes range from USD $9,000–$30,000, depending on the award. Part of the sum is given as a personal grant and the rest is given as a research grant. Estimated submission date: February.
- [Procedure for Awarding Prizes for Outstanding Achievements by Academic Faculty](#)

The Yanai Prize for Excellence in Academic Education

- Awarded to Technion academic faculty members who have made a significant and unique contribution to promoting the academic education of graduate students at the Technion. The prize is USD $22,500 for each winner. Estimated submission date: July.
- [The Yanai Prize for Excellence in Academic Education](#)

The Yanai Prize for an Outstanding Academic Department

- The prize is awarded as a token of gratitude and appreciation to academic, administrative, and technical staff, for their ongoing work to advance the quality and excellence in academic education and their efforts to nurture and improve the academic and social climate. The prize is USD $50,000 for the academic department. Estimated submission date: July.
- [The Yanai Prize for an Outstanding Academic Department](#)

The Israel Pollak Distinguished Lecture Series

- As part of the program, accomplished experts within the scope of the Technion's specialty fields are invited to spend a week at the Technion. Over the course of the week, they give several lectures to professionals and a broad academic audience and are available for conversations or consultations with colleagues at the Technion. Estimated submission date: February
- [The Israel Pollak Distinguished Lecture Series website](#)

12.1. Technion Prizes Submitted by the Office of the Vice President for Academic Affairs

The Krill Prize for Excellence in Scientific Research

- The Krill Prize for Excellence in Scientific Research is awarded by the Wolf Foundation to outstanding academic faculty members of the rank of lecturer, associate professor, or senior lecturer who have not received tenure yet (and whose tenure process have not yet begun). The prize is USD $10,000 for each winner.
- [Link to the Krill Prize website](#)

Here is a link to all the prizes: https://segel.net.technion.ac.il/he/scholarship-and-prizes-he/

13. Scholarships for Research Students

13.1. The Faculty's Scholarship Allocation Policy

The faculty's scholarship allocation policy aims to achieve three primary goals:

a. To ensure outstanding students receive the appropriate support.
b. To increase the stockpile of scholarship portions in order to increase the number of research students at the faculty.
c. To encourage faculty members to participate in funding research students through their designated research grants. The faculty works with the Graduate School to promote this important goal.

13.2. The Advisors' Contribution to Their Students' Scholarship Quota

- To increase the number of research scholarship portions (and thereby increase the number of scholarship recipients), in the upcoming years the faculty will begin to encourage every advisor to contribute at least one scholarship portion to the student they are supervising, as is standard practice at the Technion's other faculties. This way, each master's student will receive a total of three scholarship portions and each PhD student will receive five scholarship portions, together with the advisor's contribution.

- To that end, the advisor will be asked to contribute at least one scholarship portion to every new student[14] who applies for a scholarship throughout the course of their studies. If an advisor cannot make this contribution, they can ask for a "loan" for this amount from the faculty's budget under the following circumstances:

  a. The advisor has applied for or has already been awarded a grant from one of the foundations and will be able to repay the "loan."
  b. The advisor will repay the loan as soon as the budget is approved.
  c. Scholarship portions can be "mobilized" between students who are supervised by the same advisor. An advisor who contributes more than one scholarship portion to a particular student when they are also advising other students is not obligated to give the other students additional scholarship portions.

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[14] This policy does not apply to students who began their studies before October 2019.

- If the advisor is not able to secure a research grant, the additional scholarship portion will come from the faculty budget, provided the advisor continues to apply for research grants.
- It is important to note that this policy is a fulfilment of our duty to the Graduate School that increased the number of scholarship portions on the condition that we implement a new policy that ensures the advisors' participation in funding scholarship portions. As mentioned, the policy is intended to increase the faculty's scholarship portion budget and encourage faculty members to submit research proposals.

13.3. Scholarship Criteria

The faculty's primary considerations when awarding scholarships to research students are:

1. Academic excellence.
2. Scholarship availability at the faculty. The number of scholarship portions the faculty can award is limited. At times, the number of scholarships offered is somewhat smaller than the demand.
3. The criteria for awarding scholarships are completely transparent to the students and faculty members.
4. Scholarships are intended to enable their recipients to devote time to research. They are also meant to create the conditions that will result in completion of the degree requirements by the end of the scholarship period.
5. The scholarship period is limited and varies according to the type of degree and faculty policy. For more information, please see the link: Scholarship Period.
6. Link to: Scholarship Criteria

13.4. Scholarship Timeline

Generally, the timeline for awarding scholarships is as follows:

- November–May: Assessment of the number of scholarship portions for the upcoming semester and sending out a call for students to apply.
- December– July: The scholarship committee convenes and decides how the scholarships will be distributed.
- January–August: Students and advisors are notified of the committee's decision.

13.5. Obligations and Expectations of Scholarship Recipients

b. Recipients must complete their research within the allotted timeframe.

c. Recipients must be committed to excellence.

d. Recipients must be at the faculty 4–5 days a week.

e. Recipients must attend the faculty colloquium.

f. The faculty expects master's students to publish or submit a paper based on their research to a **peer-reviewed** journal with an impact factor.

g. The faculty expects PhD students to publish or submit at least two papers based on their research to a **peer-reviewed** journal with an impact factor.

h. The faculty expects PhD students to participate in at least two international conferences during their studies.

13.6. Guidelines for Supervising Scholarship Recipients: The Advisor's Obligations

- The primary advisor[15] is the person who is in direct contact with the scholarship recipient. They serve as the connecting link between the recipient, the departmental committee, and the school on a range of topics pertaining to the study program and receiving the scholarship (including meeting the scholarship criteria: attendance at the Technion and working while receiving a scholarship, accumulating credit points, and submitting a research topic).

- Other than in exceptional cases, any requests submitted to the school by a scholarship recipient must also include the advisor and the departmental committee coordinator's input.

- Any information the advisor passes on to the student or scholarship recipient must be consistent with the school's regulations and procedures. In the event of a contradiction, the school's regulations and procedures and the information published on its website shall supersede.

- Any absence of a scholarship recipient must be approved by the advisor in advance according to the requirements specified in the section titled "Absence of Scholarship Recipients."

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[15] Guidelines of the Graduate School at the Technion:
https://graduate.technion.ac.il/advisor_info/scholarships/rules_advising_scholarship

- Graduate School scholarships are granted based solely on academic considerations. The threshold for receiving scholarships is determined by each department separately and may change from semester to semester. However, a cumulative GPA of at least 80 must be maintained throughout the recipient's entire term of studies and for as long as they are receiving a scholarship.
- The research progress grade:
    - The grade is given once a semester by the advisor and serves as a valuable tool for monitoring the recipient's progress in a quantifiable way, beyond the impression they receive from daily interactions with the student.
    - It is very important to ensure that the grade accurately reflects the advisor's opinion of the student's progress.
    - If the student has not sufficiently progressed in their research, this must be documented to allow measures to be taken if necessary (e.g., cessation of the scholarship, cessation of studies, etc.).
    - In any event, the research progress grade influences the scholarship recipient's status (e.g., continuing to receive the scholarship) as detailed in the section titled "Explanation of the Grade Scale."
- The duration of studies in semesters is longer (almost double) than the number of scholarship months. Accordingly, the requirements that apply to scholarship recipients (Scholarship Criteria) are different than those that apply to students who do not receive scholarships. Therefore, the advisor is responsible for ensuring that the research topic and duration are adapted to the available scholarship period.
- It is the advisor's duty to enable the student to devote time to research and create the conditions that will lead to the student to complete their degree requirements (including completing the research and writing the thesis) by the end of the scholarship period.
- It is the advisor's duty to inform the department and school of any breach of the scholarship criteria they know of.

13.7. General Information about Scholarships at the Technion

- Graduate School scholarships[16] are granted based solely on academic considerations. The threshold for receiving scholarships is determined by each department separately and may change from semester to semester. However, a cumulative GPA of at least 80 must be maintained throughout the recipient's entire term of studies and for as long as they are receiving a scholarship.

- For further information, see the Procedure for Granting a Scholarship.

- Scholarships are intended to financially assist scholarship recipients during the scholarship period and are not intended for those who have an income, including a sabbatical salary or pension.

- It should be emphasized that the granting of scholarships, in so far as they are granted, is intended to enable recipients to devote time to research and create the conditions that will result in the completion of their degree requirements by the end of the period of scholarship.

- Scholarships at the Technion are granted in monthly portions. A student may receive 1–6 scholarship portions in a given month. The number of scholarship portions is determined by the department. The size of the scholarship portion is based on the student's degree and stage of research. In addition, scholarship recipients will be given a tuition scholarship (tuition exemption).

- For any period for which a scholarship has not been granted students are required to pay tuition according to the school's procedures and regulations.

- There are no scholarships for non-thesis tracks (except for soldiers in mandatory military service/students in national service who can apply for a tuition scholarship).

13.8.   The Scholarship Period

- Scholarships at the Technion are given in monthly portions.
- A student can receive 1–6 scholarship portions in a given month.
- The number of scholarship portions is determined by the department.

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[16] According to the Graduate School at the Technion:
https://graduate.technion.ac.il/en/information-for-the-advisor/scholarships/general-information/

- Every month a scholarship is given will be counted as a "full month" (out of the total possible scholarship months based on the particular degree), regardless of the number of scholarship portions given that month.
- A scholarship recipient whose request to extend their scholarship has been approved is required to submit their final paper at the end of the extension period.
- Here is a [link](#) to additional information regarding the requirements for scholarship recipients, including their attendance at the Technion, working while receiving a scholarship, and extending the scholarship period.

The scholarship period:

- The scholarship period for a **master's student** is up to 24 scholarship months during the time allotted for their studies.
- The scholarship period for a **PhD student in the regular track** is up to 42 scholarship months during the time allotted for their studies.
- The scholarship period for a **PhD student in the direct track** (the months are counted from the beginning of their master's studies) is up to 60 scholarship months during the time allotted for their studies.

13.9. Extending the Scholarship Period

The scholarship period can be extended at the discretion of the departmental graduate studies committee.

- For **master's students**: an extension can be given of up to six months (6–A).
- For **PhD students in the regular track, direct track, and special track**: an extension can be given of up to 12** months (6–A; 6–O).
- Link: Application [Form for Extending the Scholarship Period](#).
- **Please note:** In very special and unusual cases, the departmental committee and the dean of the Graduate School may consider an additional **unordinary** extension of up to six months (6–B) at the most, over and beyond all the quotas mentioned above, for master's students and PhD students in the regular, direct, and special tracks.
- Let us clarify that during a 6–B type of unordinary extension, the number of scholarship portions may be reduced with the approval of the dean of the Graduate School.

- Link: Application Form for an Unordinary Extension of the Scholarship Period.

13.10. The Scholarship Period for Qualifying Students

- The scholarship period for qualifying students is limited to a maximum of 12 months, with no possibility for extension. The number of scholarship months awarded are part of the total number of scholarship months the student can receive during their degree.

Scholarship Period and Scholarship Extension Period[17]					
Degree type	Max. no. of scholarship months in a 6–B unordinary scholarship extension	Max. no. of scholarship months in a 6–A scholarship extension	Max. no. of scholarship months in a 6–O scholarship extension (except in the faculties of physics, chemistry, biology, and medicine)	(*) Max. no. of scholarship months in the faculties of physics, chemistry, biology, and medicine	Max no. of scholarship months
Master's	6	6	0	24	24
PhD - regular track	6	6	6	48	42
PhD – direct and special tracks	6	6	6	66	60

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[17] The Graduate School:
/https://graduate.technion.ac.il/scholarships-and-housing/scholarships/duration-of-the-fellowship

13.11. Additional Scholarships

13.11.1.   Scholarships for Academic Excellence

The Dean's Scholarship for Outstanding Students (for master's students and PhD students on the special track) is a scholarship for academic excellence awarded to Technion graduates with a GPA of 90 and above, who are meant to receive a scholarship in at least three portions during their studies. This scholarship will be awarded only once per eligible recipient, at the end of the first or second semester (see here for recipients who have been admitted to "parallel studies" at the Technion), and retrospectively, in the form of another monthly portion for each semester month (a total of five additional scholarship portions). There is no need to apply for this scholarship, as eligible recipients are identified automatically.

The Departmental Scholarship for Outstanding Students: Outstanding students can receive an additional scholarship for a semester, at the discretion of the departmental graduate studies committee.

13.11.2.   Bridging Scholarships

- These scholarships are intended for master's degree scholarship recipients at the Technion who are continuing directly to a PhD program.

- Scholarship recipients at the Technion who are continuing directly towards a doctoral degree can receive a bridging scholarship that will be deducted from the quota of PhD scholarship months. A bridging scholarship can be granted for up to three months to allow the student to complete their master's degree.

- Bridging scholarships can be granted to recipients who have submitted their final paper and have been "admitted in principle" to a PhD program.

- The monthly bridging scholarship payments are at the amount paid to a "master's degree student with a research topic." Once the student is fully admitted to a PhD program, the balance for the bridging scholarship months will be paid. This balance refers to the difference between the amount paid to a "PhD student before the candidacy exam" and that paid to a "master's degree student with a research topic."

13.11.3. Parenting Scholarships

Parenting and adjustments to research scholarships:

- The adjustments coordinator at the Office of Undergraduate Studies determines whether a scholarship recipient is eligible to have adjustments made to their research scholarship due to fertility treatments, pregnancy, the birth of a child, adoption, or becoming the guardian of or fostering a child. This applies to qualifying events that have occurred since the winter semester of the 2012–2013 academic year. Once a student is found eligible, the matter is transferred to and handled by the Scholarship Office at the Graduate School.

- The complete Adjustments Procedure can be found on the website of the dean of students, including instructions for submitting a request.

- Request for adjustments can be submitted through the form for requesting adjustments due to fertility treatments, pregnancy, the birth of a child, adoption, or becoming the guardian of or fostering a child.

13.11.4. Extension of Maternity Leave

- A student's request (letter) to extend their maternity leave for a period of up to 15 additional weeks at most, **without receiving a scholarship** during this time, must be submitted directly to the secretary of the departmental graduate degree coordinator. The request must be submitted no later than one month before the end of the maternity leave.

- The request must include the dates of the additional leave and the date on which the student will return to their studies (to full academic activity). The request will be transferred to the Scholarship Office for processing once it has been approved by the advisor and the departmental graduate studies committee coordinator. During the additional leave period a tuition scholarship will be given (exemption from tuition fees). At the end of the additional leave the secretary of the departmental graduate studies coordinator must be informed **in writing** of the student's return to full academic activity in order for the scholarship to be reinstated.

13.11.5. Reserve Duty Scholarships

- Students on reserve duty for over 30 days (cumulatively) while receiving a scholarship (single days are not counted in this calculation) can receive a scholarship extension from the reserve duty fund based on the number of accumulated days, up to a maximum of three months.

- Applications for reserve duty scholarships must be submitted to the Scholarship Office at the Graduate School through the application form for extending the scholarship period and should state that the scholarship is a reserve duty scholarship. The request must include an official letter from the IDF's reserve duty website confirming the student's active reserve duty. This letter of confirmation must specify the student's service dates coinciding with the scholarship period.

- The application needs to be submitted about two months before the scholarship quota for the degree comes to an end and before submitting an application to extend the scholarship period to the academic department (if one is submitted).

13.11.6. Recipients' Absence from the Technion

The primary advisor is the person who is in direct contact with the recipient and they are obligated to approve, in advance, any absence of a scholarship recipient from the Technion, as stipulated in the section titled Absence from the Technion.

13.11.7. Travel Grants for Scholarship Recipients Presenting in Scientific Conferences Abroad

✓ The Technion considers the participation of research students in scientific conferences abroad of high importance. To encourage this activity, the Graduate School helps finance these trips abroad through travel grants, which at this stage are given exclusively to scholarship recipients.

✓ The purpose of these grants is to enable outstanding students to actively participate (i.e., present a paper or poster) in international scientific conferences.

✓ The travel grant is provided based on the student's outstanding performance, as expressed in scientific publications, course grades, and recommendation letters.

- ✓ The school's participation in expenses is contingent upon the advisor and/or the academic department supplementing the travel expenses.

- ✓ A student can apply for a travel grant from the school only if travel grants from other sources have been exhausted, if any exist. These may include:

  - ✓ Grants from extra-Technion scholarships for excellence, such as the Clore Scholarship, the Azrieli Scholarship, Planning and Budgeting Committee scholarships, Ministry of Science scholarships, and others.

  - ✓ Technion scholarships for excellence, e.g., the Jacobs Scholarship, the Jacobs Qualcomm Scholarship, the Gutwirth Scholarship, the Daniel Scholarship, the Zeff Scholarship, the Fine Scholarship, the Ed Stell Scholarship, and others.

  - ✓ Travel grants from the Scientific Relations Fund: There is the International Scientific Relations Fund (the ISRF) for scholarship recipients studying towards a PhD who are employed as auxiliary faculty at the Technion.

  - ✓ For more information on the topic (including all the criteria) please see the section titled [Travel Grants for Scholarship Recipients Presenting at Conferences Abroad](#).

13.11.8.   The Emergency Fund for Scholarship Recipients in Crisis

a. **The fund's goal**

The fund is intended to help scholarship recipients at the Graduate School who are in crisis/an emergency and are temporarily experiencing financial hardship.

For example, a spouse falling ill and requiring hospitalization, difficulty in paying for childcare, or the death of a first-degree family member abroad and the financial difficulty involved in needing to travel abroad, pay for burial expenses, etc.

b. **Basic criteria for receiving financial aid from the fund**

Financial aid is given to recipients based their financial situation while maintaining their privacy.

c. **The fund's sources**

The fund is financed by contributions from the Technion's faculty members and employees.

d. **Amount of financial aid**

Subject to the fund's resources, up to NIS 5,000.

e. When to apply for financial aid

Applications can be submitted throughout the year.

f. Application method

Contact the dean of the Graduate School via email or telephone, at: 04–8292478.

14. Procedure for Submitting a PhD Thesis as a Collection of Papers (For PhD Students Only)

1. In certain cases, with the approval and based on procedure detailed below, a thesis may be submitted as a collection of papers, provided three or more of the papers have been published or accepted for publication in a scientific journal. The PhD submission must include at least three integrated papers. The student must appear as the first author on these papers (aside from cases where the order of authors is alphabetical or the paper explicitly states that the student's contribution is equal to that of the first author).

2. A given paper may be used as an integral part of the PhD thesis of one student only, unless the paper explicitly states that the all the students have made an equal and substantial contribution to the paper.

3. Only papers that are related to the research topic will be accepted.

4. Each faculty can make these conditions more stringent and even entirely prohibit the submission of a thesis as a collection of papers.

14.1. Submitting the Application

1. The student will submit the application for the submission of a thesis as a collection of papers to the departmental graduate studies committee. The request needs to include details of the papers (titles, names of the co-authors, etc.) and state the stage of the process at which they are in (accepted/published).

   The following must also be included:

- A detailed description of the role of each of the papers' authors and the academic institutions they are affiliated with.
- A detailed description of the contribution of each author to each paper that will be included in the PhD thesis. For example: Author A conducted the experiments described in pictures 1–3, Author B performed those detailed in pictures 4 and 5, Author C wrote the software, and Author D is the head of the lab who wrote the paper. The application needs to include a specification of additional results and chapters intended to be included in the thesis.

- The student must attach a declaration stating that they will ensure that any publication stemming from their PhD thesis will comply with the copyrights of the other authors and the platforms where the papers appeared.

2. The advisor(s) recommendation will address the papers themselves, the journals in which they were published or to which they have been accepted for publication, including their impact factor, the student's part in each paper (or confirmation of the specification appearing in the student's letter) and the results that have not yet been published that will be integrated in the thesis. When several students have made equal contributions to a paper and this has been explicitly stated in the published paper, the advisor must explain the part each student played and justify the student in question's inclusion as part of the work.

3. The recommendation of the departmental graduate studies committee: The committee will consider the student and advisor's application and if they decides to grant it, the committee will send its recommendation to the dean of the Graduate School to approve the submission of the thesis as a collection of papers.

If the application is approved by the Graduate School, the documents detailed in Sections a, b, and c will be sent to the thesis examiners, who will reference it in their opinion and in the final exam.

14.2. Guidelines for Editing a Thesis as a Collection of Papers (Contingent upon Approval of the Application)

The thesis must be submitted according to the guidelines for writing a thesis as they are practiced and appear on the Graduate School's website under; Graduation – [Editing a Thesis](). The student must address the following issues:

d. **Introduction**
The introduction should include a broad and current review of all of the research fields included in the thesis and must be at least five pages long.

e. **Research Method**
This section should describe the research methods beyond the description appearing in the papers' abstracts. Special attention should be devoted to research methods developed during the research.

f. **Findings**

The Findings section comprises the papers arranged according to the progression of the research. The papers need to be presented in a uniform size and formatting, and bound together.

g. **Unpublished Material**

Unpublished material should be included in the Findings section and arranged in the following way: a cover page including the names of the other researchers, Abstract, Introduction, Results (including tables and illustrations in the appropriate places), Discussion, and List of References. Here the student can develop and expound their arguments.

h. **Discussion**

The Discussion section should include a brief summary of the papers' findings with proper reference to the illustrations they contain. The Discussion should address the entire body of research, while summarizing the sections discussed in the papers. All the papers' innovations and contribution to the research field should be noted while ensuring that the thesis as a whole is coherent and well-integrated. This section should be at least five pages long.

i. **References**

A list of the references appearing in the Introduction and the Discussion, as well as references that do not appear in the papers.

j. **Thesis language**

A thesis comprised of papers must be written in a single language. When a thesis is submitted in English, an abstract in Hebrew must also be attached.