5.1.05

הנחיות לכתיבת פרויקט גמר

(מסלול לימודים ללא תיזה-עם פרויקט)

Guidelines for M.Sc. Projects (non-thesis)

proposed by Prof. R. Boxman

Objective

The objective of the M.Sc. Project is to give the student experience in performing independent engineering work at the M.Sc. level according to strict academic standards. In the course of a project, the student is expected to learn and demonstrate project planning, engineering decision making, and technical reporting, as well as execution of specialized engineering work.

Level and Scope

The level of the project should be commensurate with M.Sc. thesis research, but the scope (3 credits) should be approximately ¼ of that of a thesis (12 credits). The scope of the M.Sc. thesis should be the equivalent of approximately 9 months of full-time work, and thus that of a project should be the equivalent of approximately 2-1/4 months of full time work.

Types of Projects

The nature of the project may vary, with the provision that there must be a component of high level engineering work involved in its execution. The project should include some element of literature searching and reading, but it may not be entirely a literature survey. Some examples of project types are indicated below:

1) "Classical" *research project*, following the general outline and guidelines of a research thesis, but limited in scope. The research should be centered around a well defined but limited "research question", which can be answered with an effort of the equivalent of 2+ months full time work.

2) *Engineering design project,* in which the student designs a circuit, system, device, etc., to fulfill a given specification. The project supervisor should ensure that good engineering practice is followed throughout, and that all design choices are decided based on a proper engineering analysis of the alternatives (rather than "seat of the pants" or "whatever works first" approaches).

3) *Engineering analysis project*, in which a student analyzes approach alternatives, a proposed system or device performance, etc., and based on the analysis, proposes recommendations.

4) *Feasibility study*, in which the student tests the suitability of a proposed component, system, approach, or solution to some specified application. The study may be based on laboratory measurements, theoretical analysis, numerical simulation, etc., as appropriate.

Project Report

The student will be required to report on his project in writing. The report should be organized similar to a "research report" (i.e. a thesis or journal article), including an informative abstract, an introduction which gives the general background, presents a literature review,

indicates the gap in the previous work (and hence the need for the current work), and states the objective of the present work, a body which details what was done and what was obtained, a discussion, and conclusions. The report should follow all the accepted standards for scientific reporting (citation of previous work, presenting sufficient detail for duplication elsewhere, correct grammar, acceptable style, etc.).

Examination and Grade

The project report will be read by the project supervisor and one other examiner appointed by the department chairman. Either the project supervisor or the additional examiner should be a regular faculty member – the other may also be a researcher at TAU, or an engineer or scientist from industry or an external research institution, who hold at least a M.Sc. degree. The exam should include an oral presentation by the student of his work (~20 minutes), followed by questions from the examiners. The duration of the exam should be 1-2 hrs. The examiners assign a numerical grade (0-100) to the project on the basis of the written report and the exam.