ENGG 390 - MEM PROJECT GUIDELINES

Objective
The purpose of this course is for you to learn from the experience of completing an engineering design project on your own, all the way from locating a suitable problem to delivering a useful contribution to its solution.

Because each project is different, it is not possible to specify in detail just how to go about yours. You will be judged by results. However, there are some common features of successful projects that may serve as guidelines.

Type of Project
Some projects involve creating a device or process that satisfies a specific need, including economic factors. Others may involve a strategy, policy, or an emphasis on management. Whatever the appropriate blend of activities and objectives, you must demonstrate the ability to use an engineering problem-solving approach. That is, define a problem, derive specifications for a successful solution, generate and evaluate appropriate alternatives, produce a solution in an analytically sound manner, and show that it meets suitable measures of success.

Project Initiation
It is up to you to find a suitable project. Industrial internships, personal interest, family connections, experiences in previous design courses, advice of friends, or other sources may suggest possibilities. Thayer School's Career Services Office maintains lists of companies (several in the Hanover area) that have supported projects in the past or suggested project topics. A list of recent MEM projects is available from the MEM Program Office.

Projects should be identified and approved by the course instructors during the term before the work is to be performed. Preliminary discussions with the course instructors about the suitability and scope of possible projects are often useful.

You should clearly identify a person as your "client," and you are strongly encouraged to find a Thayer or Tuck faculty member to act as your advisor.

Pre-Proposal
During the term before the project is undertaken, the student must give the course instructors a 1-page description of their project as well as meet with one of the instructor to discuss the project. The 1-page description should define the project and identify the sponsor and faculty advisor.

Proposal
Proposals usually contain an agreement of the client to support the work. The substance of the proposal includes:

- a definition of the problem,
- quantitative specifications describing the functions to be performed,
- a description of the design approach,

- a timeline of activities,
- a statement of expected results and deliverables,
- measures of success,

and any other information that can help assess the viability of the project.

Progress Reports
Usually two progress reports (written, and, if convenient, oral) are made during the course of the work. If there are difficulties, uncertainties or great successes, either encountered or anticipated, it may be advisable to schedule additional progress reports.

The first progress report usually contains a reassessment of the problem and the approach being taken in the light of experience. It should establish that the work is on track, the objectives are clear, and that there is reasonable expectation of success. Any difficulties, changes in scope or objectives, limitations, etc. should be identified at this stage.

By the second progress report, enough results should have been achieved to enable the end of the project to be anticipated with some confidence. You should be able to describe what needs to be done to finish the work.

It is desirable to have the faculty advisor and, when possible, the client, attend oral progress reports.

Final Report
The final written report should be a professional document that will impress the client, the advisor, and the course instructor(s). It should clearly describe how the results meet the objectives that were defined at the start of the work.

A final oral report is required. The client should be invited to attend and comment on how well the results meet his/her needs.

You are required to submit a copy of the report to the instructors and to your advisor, and a separate copy to the Registrar. You must also submit to the Registrar an electronic copy of your abstract and a project form, which is available in Room 206.

Grading
The course instructors determine your grade based upon input from the client and the faculty advisor, as well as your performance at the various stages of the project (proposal, progress reports, final written and oral reports). The basic passing grade is a "P". In order to deserve an "HP" the work must have some remarkable or outstanding aspects that the instructors can clearly identify.

On-line Resources
See the ENGG 390 website **http://engineering.dartmouth.edu/~engg390** for detailed information on the course.