

1. Project Proposal Guidelines

Outline and advice for crafting a project proposal to use when setting up MEng Projects as well as convincing a faculty advisor or client to work with you on a project

Depending on the faculty advisor a formal document may or may not be required but it is strongly recommended that you write a proposal as part of your professional education and to help you end up with good project results.

Also note it is possible that the proposal may have to be modified during the term or year to adapt to intermediate results. This is not a bad thing but is often necessary and desirable -- compared to proceeding with a plan that is not working.

Goals of Project Proposal

- **Convince** the faculty advisor and/or client that the project is both worthwhile and feasible, and that the proposed approach is the best possible.
- **State** the goals of the project and what the faculty/client can expect to see accomplished.
- **Specify** a time limit and budget for completion of the project.
- **Identify** milestones by which the faculty/client can monitor the progress of the project.
- **Clarify** the relationship between the faculty/client and the project team; in particular, to state what data and services the faculty/client is expected to provide.
- **Establish** and delineate a professional approach to the project to gain experience with proposal skills that will be needed in professional life.

Suggested Outline

- **Executive Summary** – 1-2 paragraph statement of project goals and deliverables emphasizing the benefits to the university/department/faculty/client, outline of methodology, and statement of time and budget required.
- **Introduction** - Statement of problem context (background) and problem essentials (foreground).
- **Project Statement** – Expanded statement of goals. Clarify the deliverables of the project.
- **Methodology** – Description of approach to be taken. Organize in subsections. Motivation for the approach and the advantages and disadvantages of the approach. As necessary, provide definitions and a brief technical outline. Note skills to be learned by students.
- **Resource Requirements** – Identify software, hardware, facilities, space, funding and data required for project completion. Identify what data you will collect, and

what data and services the university/client will provide.

- **Schedule** - Set up a method for the client to monitor the project through measurable accomplishments, milestones, and a meeting schedule with the client. Timeline or list of dates and deliverables.
- **Budget** – This section is not required for many MEng. Projects but is an essential part of any other proposal. Outline monetary requirements for the project along with a schedule for expenditure.
- **Contacts** – It may prove useful to identify all parties involved with their contact information

Tips on How to Write a Project Proposal

Use typical sales techniques to create a better proposal.

- Know your client
- Know their needs and address them
- Use *positive* language
- Promise only what you can deliver
- Understand the difference between *needs* and *wants*

Consider the possible negative outcomes of your proposal so that you may avoid them.

- Rejected
- Accepted but you didn't want it
- Oversold – the client expected more than was intended
- Under-resourced – possibly the result of the project being over-scoped

How a project will be judged and graded:

The Master of Engineering project will receive a letter grade as other courses, but it is not just another course. It is the centerpiece of the Master of Engineering program. It requires sustained effort and time comparable to that of your most difficult courses, over a longer period of time. The work effort is close to activities in the workplace. The project report must meet the high academic standards applicable to a thesis while communicating effectively to non-specialist client(s). While the faculty advisor and any client are valuable resources, the individual student or student team, not the advisor or the client, is responsible for overcoming obstacles and moving the project steadily forward.

The grade is entirely the responsibility of the faculty advisor, who is the official instructor of the course for the team being advised. Here are some criteria that faculty advisors usually take into account in establishing individual project grades:

- Creativity and judgment
 - Accurately discern and define the essential and true elements of the real-world problem, develop a practical solution strategy, and follow through to a useful product.
 - Searching out, learning and making appropriate use of available theory and tools, seeking additional expertise and data as needed.
 - Figuring out how to deal with a difficult, complex and unstructured real-world problem with incomplete data, for which the solution may not be straightforward or 'cookbook'

- Communication
 - Establishing clear two-way ongoing written and oral communication with the client and the advisor about progress, status, and issues, up to and including the final presentation
 - Producing clear, well-organized and accurate project documents.
- Leadership and Teamwork
 - Taking initiative, resolving conflicts, and maintaining participation
- Professionalism
 - Making and updating the project plan and meeting the resulting commitments about deadlines, milestones and budgets
 - Justifying recommendations by conclusions and findings
 - Adhering to high ethical standards

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