

UNIVERSITY OF CAPE TOWN

DEPARTMENT OF COMPUTER SCIENCE

Honours 2017

Research Methods — Honours Project Proposal

1. Instruction on Preparing the Proposal

The purpose of the proposal process is to enable the Department to judge the feasibility and level of your project as a whole, as well as each individual student component. Your project supervisor will guide you through this process.

Clearly formulate your research problem according to the guidelines presented in the Research Method lectures. Select the most appropriate research method and the supporting research methods. Specify how you will evaluate your work. You will decide on the stages of the project and the dependencies between them, draw up a list of deliverables and milestones, compile a project plan and draw the corresponding Gantt chart.

In the proposal, it is essential that each student have a *clearly identifiable individual piece of work* that constitutes a fair subdivision of the project load. For examination purposes, the work done by each individual student must be able to stand alone as a Computer Science project. The project proposal is a team effort and the whole project team will hand in a single proposal. Thus all members must contribute equally to the proposal.

Requirements

Submit your literature review assignment as a **PDF file** in the Association for Computing Machinery (ACM) Proceedings Format. No other formats are permitted. MSWord and LaTeX templates for this format are available from the ACM website <https://www.acm.org/publications/proceedings-template>.

Length: 2000-4000 words (the upper limit must be strictly observed).

The proposal document *must* contain the following information:

1. **Project Title** (which captures the project as you intend doing it). State the abbreviation and list all the team members as the authors and state who the supervisor and second readers are.
2. **Project Description:** This comprises a high-level introduction to the problem and must be as clear as possible: short sentences, citations, all technical terms all explained.
What is the problem? Why is it important? What are the issues/difficulties?
3. **Problem Statement** (Research Questions) — Important Section. Unambiguously deal with the central issue that you will be confronting in the project, leave ancillary issues to your methods section.
 - a. What are the aims of this work? Why is the problem important, has anyone else said so?
 - b. What are the main research questions you are asking?
 - c. If your project is more of a Software Engineering project (rather than research) then state the most important requirements here. For example: who are the clients and the users, what do they want?
4. **Procedures and Methods:** show that you have specific methods to solve the problems stated above. Work out which other problems will have to be solved on the way. Explain and justify your approach and the methods you will be using. Ensure that this description is split into parts that can be allocated to the different team members (refer back to this when you discuss team member roles in your project plan).

Also make sure you cover the following if they apply:

- a. If a system or prototype is to be developed then state design features, development platform, implementation strategy and expected challenges.

- b. How will you evaluate your system? You should have a plan for testing your system when it is complete. Work this out now; everything will be wasted if you finish your implementation but cannot evaluate your “advance” convincingly. These can be performance measurements, user experiments, or client satisfaction measures.
 - c. If you anticipate having a theoretical or mathematical contribution as part of your project then explain what it will be used for and what methods of analysis will be employed.
5. **Ethical, Professional and Legal Issues:** Are there any legal implications for your work? *Should you get ethics clearance for any experiments?* What decisions have been taken about intellectual property rights that might result from the project?
6. **Related Work:** Just a few key works to show how others have tackled your specific issues or to provide more information on the methods you intend using. You have already done a related work paper so this is just to include those works (if any) that are key to understanding your proposal. All work must be properly cited.
7. **Anticipated Outcomes:** Major results, including:
- a. System (software, key features, major design challenges)
 - b. Expected impact of your project (What results do you expect? What difference will they make?)
 - c. Key success factors – how will you judge whether the project has succeeded or not
8. **Project Plan and Work Allocation:**
- a. Risks (e.g., delays in obtaining key resources) and Risk Management Strategies.
 - b. Timeline, including Gantt chart.
 - c. Resources required (equipment, people, special software etc.)
 - d. Deliverables
 - e. Milestones (which should refer to the Timeline)
 - f. Work Allocation to team members such that each has a viable project in their own right. If your team members have different skills then show how this maps onto the tasks they have been allocated. Discuss which parts of the project (as detailed under 4 above) will be done by whom.

2. Marking

The outcome of the marking should be an overall judgement of the value of the proposal. We would normally expect all team members to get the same mark for the proposal, except if there is evidence that contributions have differed substantially.

The broad guidelines are:

First (75% or more): This is a highly professional and outstanding proposal which reflects a clear appreciation of the Computer Science research or software engineering problem. It is supported by a technically sound and state-of-the-art design (either of the experimental system and experiments or of the proposed software system). The project implementation is carefully planned and team’s roles clearly defined.

It is well organized with excellent development of ideas and description of technical issues, reflecting the intellectual qualities of a good Computer Science Team. The presentation, text, figures and references are clear and concise, showing that the authors are in control of the standard conventions of technical writing.

Upper Second (70% – 75%): This is a very good proposal which responds well to the research or software engineering problem. It shows evidence of clear thought, careful design, and good planning.

It is well organized and correctly formatted, with adequate supporting details; it is of satisfactory professional quality. The writing is fluent, the graphics are clear, the technical design is viable,

and the project planning is in order. There are slight errors, omissions and presentation deficiencies which detract from the overall quality of the proposal.

Second (60% – 70%): This is a satisfactory proposal which mostly responds to the project set, showing a moderate level of attention to design, project planning and documentary presentation. There are several omissions, errors and demonstrations of inadequate understanding which render it marginally acceptable for execution in the honours year. The actual plans will have to be adapted according to the comments before they are practical, but a revision of this proposal may not be essential. There is no evidence of any particular strengths that characterize this proposal.

Third (50% – 60%): This is a sub-standard proposal which is not acceptable at honours level without revision. There may not be enough scope in it for Computer Science work at honours level. It may have difficulty with the logical flow of the design, reflect inadequate attention to planning, or it may be poorly written and presented. It does not convey to the supervisor a favourable impression of the project team's capability to solve a Computer Science problem. It must be revised according to the comments; this mark will stand.

Fail (< 50%): This proposal does not address a problem or it fails adequately to describe a workable design solution. The technical approach may be erroneous, or the poor documentary presentation may not convey a technically feasible approach. The team will pretty much have to start from scratch with a new proposal for the supervisor, but this mark will stand.

3. Next Steps

Once the proposal has been submitted you need to prepare a presentation of the proposal for the staff and students. Your supervisor and second reader will mark the proposal and give you feedback.

You will have an opportunity to revise your proposal based on the comments received during the presentation and from your supervisor. This is to ensure that you have a feasible project, but it will not change your proposal mark.

Proposal Mark Allocation

Category	Total Marks
Paper Style	6
a. Language (Grammar and Spelling — comment only)	0
b. Style suitable for scientific communication. Well organized, with logical sections. Correct length.	6
Content	26
c. Project Description (suitable high-level introduction)	4
d. Problem Statement (or Research Questions for experimental type project): problem clearly identified, why is it worth doing	6
e. Procedures and Methods: Experiments, Design, etc.	6
f. Ethical, Professional and Legal Issues addressed.	4
g. Related Work (Showing relevance, properly cited)	2
h. Outcomes: Expected Impact: Expected Results, effects; Key success factors.	4
Project Plan	10
i. Real and important risks anticipated	2
j. Timeline, milestones and deliverables (including but not limited to honours milestones specified by the Department).	6
k. Team members' work specified.	2
Overall Excellence	8
l. Technical Soundness (Completely correct, sound, partial, major errors, unsound) and Originality (Award Quality, Excellent, Good, Fair, Poor)	8
	50