

Research Proposal

For postgraduate students

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**Civil Engineering Department, College of Engineering,
University of Mosul**

*Note that this outline is slightly flexible – it may be modified to suit the purpose of a particular project under the agreement of related department. The total length of the proposal normally no more than **20 pages** (excluding appendix and references).*

This Research Proposal is considered as an academic/public document, something that will accompany the confirmation process, something to append to the Ethics Application, something to send to a Project Management, something to send to the Institute Director, Head of School, Dean of Faculty, Pro Vice Chancellor-Research, etc.

Proposal Structure and Contents

- First page is **Title** page.
- Table of content** is page-2
- Following pages contain the following items:

1. Introduction

Describe in general the problem/issue that you seek to research. Why is it an issue? How is the problem/issue being developed in brief?

Maybe 2 to 3 pages, each page contains 2-3 paragraphs. Some pictures are allowed to be mentioned in this section.

Define any key terms, which may be useful for the reader.

2. Research motivation

Define the reasons behind the selection of this research topic.

Basic motivations or the love of the work itself include: interest; challenge; learning; ... etc.

This maybe 2-4 points or 1-2 paragraphs are enough to describe the motivation.

3. Review of literature

Here, we want a bit of a description about the type of literature that you will review. At this stage, it is expected that you would have an idea about the areas of literature that you will need to review. You should also know the main theorists/writers and any major controversies.

- *It is expected that the M.Sc. student should cite more than 20 references. Whereas, the PhD student cites more than 30 references in this section only.*
- *Arrange the research papers from oldest to newest.*
- *Classified literature papers into groups. Each group discuss the same point and it has subtitle.*
- *2-4 groups are recommended in the literature writing.*
- *Pictures, tables and figures are allowed here.*

About 4-6 pages for literature.

4. Research gap

This part is a conclusion of the previous section (Review of literature). The student comes with research gap after reading and go through many researches discuss the same topic.

Why research gap? *Because you will want to show to the reader that you are not duplicating existing research.*

1-2 paragraphs are enough to describe the research gap.

5. Research objectives

The objectives of a research project summarize what is to be achieved by the study. These objectives should be closely related to the research problem. The general objective of a study states what researchers expect to achieve by the study in a specific terms. It is possible (and advisable) to break down a general objective into smaller, logically connected parts. These are normally referred to as specific objectives. Specific objectives should systematically address the various research questions. They should specify what you will do in your study, where and for what purpose.

The formulation of objectives will help you to:

- *Focus the study (narrowing it down to essentials);*
- *Avoid the collection of data which are not strictly necessary for understanding and solving the problem you have identified;*
- *Organize the study in clearly defined parts or phases.*

Few points or 1-2 paragraphs.

6. Research scope

The scope of research is the areas covered in the research. This part of the research paper you will tell exactly what was done and where the information that was used specifically came from. The type of information that would be included in the scope of a research project would include parameters, variables, and theories or methods will be used to solve research problem. Depending on the subject, the scope can be large or small, as there are different materials available for different projects.

Few points or paragraphs.

7. Research methodology

Describe in full every detail of the proposed methodology. This is needed to ensure that it is a researchable project, and to enable assessment of the ethical considerations.

Methodology should explain where you are coming from and how you want to do the research in a particular way. A judging committee, a referee, a funding company want to be assured that your research that your approach will answer your research question or address your objectives and that your approach will deliver the outcomes you seek.

Explaining your methodology helps readers to know why you want to do your research in a particular way. It helps readers to know that you know what you are doing. It gives confidence to funding agencies and university that you are not going to waste the money. If your methodology is new and innovative then you have to write more of a justification so that others understand what you are trying to do and why it is important to do it this new way.

2-3 pages with figures, flow charts and tables are recommended.

8. Research outcomes and significance

Say something about the expected outputs (results, equations, relations between variables, ... etc.), and any other outcomes that might be achieved. In addition, you should mention the importance of your results to academic research.

Few points or 1-2 paragraphs.

9. Timeline

Describe in full every detail of the proposed methodology according to the available time. This will inform the reader how you are going to manage your activities against time. The timeline includes the proposal writing and thesis writing items.

Schedule of activities (March 2012 – March 2013)

Activities	2012				2013			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Review of literature								
2. Proposal development								
3. Material testing:								
a. Collection/preparation of specimens								
b. Testing for strength parameters								
c. -----								
d. -----								
e. -----								

10. Budget (optional)

Outline what all the costs of the research will be. Also provide a justification/explanation.

11. References

Usually universities and academic institutions follow Harvard or Harvard_AGBS6. If you are using software, the references are written automatically following the above references. If you are writing the list of references manually, the following format is recommended for Harvard_AGBS6:

Source type	Format
Book	Allen, HG 1969, <i>Analysis and design of structural sandwich panels</i> , Pergamon Press Oxford, England.
Journal paper	Alrefaei, MH & Diabat, AH 2009, 'A simulated annealing technique for multi-objective simulation optimization', <i>Applied Mathematics and Computation</i> , vol. 215, no. 8, pp. 3029-35.
Conference paper	Kemp, M 2008, 'use of pultruded sections in civil infrastructure', in 20th Australasian Conference on the Mechanics of Structures of Materials (ACMSM20): <i>proceedings of the 20th Australasian Conference on the Mechanics of Structures of Materials (ACMSM20)</i> , T Aravinthan (ed.), CRC, Toowoomba.
Chapter in book	Knox, CE 1982, 'Fiberglass Reinforcement', in G Lubin (ed.), <i>Handbooks of Composites</i> , VAN NOSTRAND REINHOLD, New York, ch 8, pp. 136-59.
Standard	ASTM-C365-94 1994, <i>Standard Test Method for Flatwise Compressive Properties of Sandwich Cores</i> , West Conshohocken, PA.
Thesis	Awad, ZK 2012, 'Novel fibre composite civil engineering sandwich structures: behaviour, analysis, and optimum design', PhD, University of Southern Queensland.

.....End of proposal

Appendix A (optional)

Any further information that you would like to attach to your main proposal like; expecting and undergoing publications, and primary results.

Writing style format

- *Title font size 16 point, and Times new roman type (bold).*
- *Text font size 12 point, and Times new roman type.*
- *Use 1.5 line spacing between text.*
- *12 point spacing before and after paragraphs.*
- *12 point spacing before and after titles.*
- *Write tables and figures like;*
Table (-) ----- , Figure (-) -----.
- *Write equation and symbols using Ms-Word.*
- *Page number in the bottom of the page – middle. Page (1) is the **Introduction** page.*

Things you shouldn't use

- *Using bold or italic style in the text.*
- *Putting brackets without real need.*
- *Shading some of your text.*
- *Colour your text.*
- *Cut and paste things from other documents.*
- *Direct copy from the other references.*
- *Page outline.*

We wish you all the best in your research