

GRADUATE PROGRAM IN COMPUTATIONAL MODELING

GUIDELINES FOR QUALIFYING DEFENSE

1. FRONT PAGE:

THESIS TITLE/NAME/SUPERVISORS/DATE

2. SUMMARY

Please include the problem statement, objectives, research methodology, expected output/outcomes/implication, and significance of output from the research project. See these [examples](#).

Limited to 300 words.

3. INTRODUCTION

3.1 Research Background

Should contain a rationale and motivation for your research which answer:

- Why are you undertaking the project?
- Why is the research needed?

The rationale should be placed within the context of existing research. **Please include a statement relating the report to at least one of the [UN Sustainable Development Goals \(SDGs\)](#).**

3.2 Problem Statement

A problem statement should focus on answering these questions:

- What is/are the research issue(s) that you will address in the thesis?
- What has been done to address these issues? Discuss and show the

research gap.

- How does your work differ and be similar to other related works?
- What is new about your work?
- Which work do you follow/motivate you?
- Why do you choose the method/technique/framework/etc.?

Demonstrate that you:

- Know what you're talking about and
- Have knowledge of the related literature.
- Must support the literature.

Basically, you have to convince people that you know what you're talking about and that the research is important.

3.2.1 Research Questions

What do you want to prove in this work? Relate to the research issues.

3.2.2 Research Hypothesis

What do you want to prove/test?

State your independent and dependent variables.

3.3 Research Aim and Objectives

The aim is the overall driving force of the research, and the objectives are how you intend to achieve the aims. These must be clear and concise. Relate to the research issues and research questions. Use [SMART](#) criteria to state your objectives (see the link). An example of a SMART-goal statement might look like this: Our goal is to [quantifiable objective] by [timeframe or deadline]. [Key players or teams] will accomplish this goal by [what steps you'll take to achieve the goal]. Accomplishing this goal will [result or benefit].

3.4 Research Scope

What is your focus, datasets, etc?

3.5 Potential Contribution

One or two paragraphs explaining what is/are the expected contributions of your work related to the research issue that you have addressed?

4. LITERATURE REVIEW (about 100 references)

Must be based on the theoretical framework. Please use the [PRISMA methodology](#) (see the links).

Must include a reasonable number of up-to-date references (suggestion: within 5 years back, 20 per year).

Leads to the problem you wish to tackle in your proposed work (i.e., to support your research gaps/contributions) and should answer the following questions:

- What have others done before within this context?
- What is being done now?
- What problems have been identified?
- What has not been worked on?
- How does your own work build/add to this?

5. RESEARCH METHODOLOGY

Need to clearly identify the proposed methodology and method for each objective and justify their use. To do this, you need to answer:

- Why have you decided upon your methodology?
- Why have you decided to use those particular methods?
- Why are other methods not appropriate?

6. RESULTS AND DISCUSSION

Present the results in detail, mapping the objectives to the research methodology steps.

7. GANTT CHART

Detail in a [Gantt Chart](#) the research activities, milestones, and publication plan. See an example [here](#). See also this [video](#) for instruction.

8. DISSEMINATION

What do you expect to do with the result of your research (e.g., journal papers, proceedings, copyrights, etc.)?

Number of pages between 50 - 90 pages