M.Sc. in Informatics and Intelligent Systems Engineering
(Project Proposal Guidelines)

A) Basic Prerequisites (worth 20% of marks allocated for proposal report)

S.N.	Checklist	Requirements	Remarks
1.	Document Length	20 to 25 Pages	Page count excludes: • Pages before "Introduction" section • Pages after "Expected Results" section
2.	Section Lengths • Introduction • Literature Review • Proposed Methodology • Expected Results	 4 to 5 Pages 4 to 5 Pages 8 to 10 Pages 4 to 5 Pages	 20% of Report Length 20% of Report Length 40% of Report Length 20% of Report Length
3.	Base Paper Recordings	5 Papers	• Articles published in reputed journals within the past five years
4.	Documentation Software	LaTeX	• Recommended editor is Overleaf • Must comply with LaTeX Template
5.	Plagiarism Check	• Below 20% for all sources combined • Below 1% per source	• Permitted level of plagiarism as per rule of IOE, Dean's office
6.	Softcopy Submission	• LaTeX Source Code • Compiled PDF	File naming convention: • "student name (proposal)".zip • "student name (proposal)".pdf
7.	Hardcopy Submission	• Tape Binding (2 Copies)	• Must incorporate corrections if pursuing initial research idea • Must prepare new proposal if pursuing fresh idea

B) Compulsory Contents (worth 80% of marks allocated for proposal report)

1. **Cover Page**

2. **Title Page**

3. **Acknowledgement**
   a. Mention how individuals and organizations have helped you in completing the research work

4. **Abstract (200 to 250 Words)**
   a. Include three to four keywords in lexicographical order

5. **Table of Contents**

6. **List of Figures**

7. **List of Tables**

8. **List of Abbreviations**
   a. Arrange in lexicographical order

9. **Introduction:**
   a. Background
   b. Motivation
   c. Problem Statement
   d. Objectives of Project
      ✓ Maximum of two major goals written as phrases in bulleted format
   e. Scope of Project
      ✓ Two paragraphs, one for the capabilities and one for the limitations
   f. Potential Applications
      ✓ Subheadings with explanations for each domain where the project idea / outcome can be applied
   g. Originality of Project
      ✓ Must be bulleted (highlighting / focusing) on your new contribution
   h. Organization of Project Proposal

10. **Literature Review**
    a. Dedicate a paragraph for each author's work
    b. Arrange in chronological order as per publication date starting from the oldest
    c. Mention the method / architecture tried by authors, the quantitative and qualitative results obtained, and the overall strengths and weaknesses of the paper

11. **Proposed Methodology:**
    a. Theoretical Formulations
       ✓ Basic concept about the chosen model and supporting pre-/post-processing steps
       ✓ Major benefits of the chosen technique
       ✓ Assumptions taken into account
    b. Mathematical Modeling
       ✓ Equations describing the pre-processing steps, the mathematical foundation of the model and the post-processing steps
       ✓ Description of the parameters / symbols used in the equations
       ✓ Inclusion of figures to backup the equations
    c. System Block Diagram
       ✓ Make figure by yourself (input stage, intermediate stages and output stage)
       ✓ Properly illustrate the training/validation/testing phases
       ✓ Briefly explain the purpose of each block
    d. Instrumentation Requirements
       ✓ Must mention both the hardware & software tools
       ✓ Clarify the purpose of the device in your project
       ✓ Mention the tentative device version / type that you will use (must be sensible for your project)
       ✓ Declare how you will obtain access to the device
    e. Dataset Explanation
       ✓ Must explain the relevancy of the dataset
       ✓ Must explore the contents of the dataset
       ✓ Irrelevant datasets will not be accepted
       ✓ Prototype of dataset prepared by yourself must be discussed

12. **Description of Algorithms**
    a. Explain the working mechanism of the major pre-/post- processing algorithms needed for your project
    b. Must include flowcharts or pseudo-codes to backup the explanation

13. **Working Principle**
    a. Describe how the raw input data gets preprocessed to make it ML ready
    b. Illustrate how the ML ready data gets manipulated as it passes through the different stages of the chosen model
    c. Exemplify how the output of the model gets post-processed
    d. Must present sample calculations for 13 (a), 13 (b) and 13 (c) to reinforce the explanations

14. **Verification and Validation:**
    a. Must discuss the relevance of the chosen metrics to judge the output
    b. Provide basic definitions and formula of the metrics

15. **Expected Results:**
    a. Provide possible outputs for the various scenarios that may be encountered
    b. Outputs must contain figures and tables together with descriptions
    c. Refrain from using other's work (make your own figures)
    d. Mention the research works with whom you want to tally your output
    e. Mention the scenarios that you expect your project to work very well and those that it cannot handle
    f. Provide sample calculations to backup the claims of verification and validation

16. **Appendices:**
    a. Project Schedule
       ✓ Must be professional and display all anticipated activities
       ✓ Timeline must be organized on a biweekly basis, and it must show the project start and end dates
       ✓ Must show the percent of completed and remaining tasks
    b. Base Paper Recordings
       ✓ Must be recorded based on provided template
       ✓ Must be paraphrased without plagiarizing

17. **References**
    a. Must follow the IEEE guidelines
    b. Ordering of references must be as per their occurrence within the report