DEPARTMENT OF SOFTWARE ENGINEERING
LAKEHEAD UNIVERSITY
ESOF 4969 - DEGREE PROJECT GUIDELINE
2020-21

1. Degree Project Due Dates and Marking Scheme

Section	Due Date	Marks
Choice of Supervisor	Within 2 weeks of the start of the Fall Term	---
Software Requirements (Project Proposal)	October 6	5 marks
Software Project Management Plan (SPMP) Document	October 31	5 marks
First Oral Presentation	First week of November (November 7)	5 marks
Specifications Document (Interim Report)	January 9	15 marks (Late penalty -5 marks)
Final Oral Presentation	Between the 2nd and 3rd weeks of March	15 marks
Design Document (final report)	April 3	----- (Late penalty -5 marks)
Approved Design Document (approved final report)	April 22	40 marks Late penalty (<7 days) -5 marks Late penalty (≥7, <14 days) -10 marks Late penalty (≥14 days) -15 marks
Efforts		15 marks
TOTAL		100

2. Software Requirements Document (Project Proposal)

Students in the group should submit a Software Requirements document. The mark for the software Requirements document is based on the following, but not restricted to:
- Clarity of the project objectives and statement of problem.
- Domain analysis and description of background information (literature survey)
- Business model, including

- Description of general field of business or technology in which the software to be used.
- Societal and economic impacts of the product
- Potential customers and users
- The environment: the equipment and system to be used
- Competing software products available in the market
- References to technical documentation, client documents, and literature led to the business model.
- Functional requirements: description of the functionality of the system to be designed. These include inputs, outputs, computation, data storage, and synchronization issues
- Non-functional requirements: discussion of parameters affecting performance of the designed system, and limitations & restrictions of the system. These include response time, storage requirements, reliability, availability, **privacy, security and/or safety issues**.
- Document structure, style, readability, and the use of high-quality drawings, graphs, and other figures.

3. Project Management Plan

Students in the group should submit a <u>Software Project Management Plan (SPMP) document</u>. The mark for the SPMP document is based on the following, but not restricted to:
- Description of the software process model (methodology) to be used.
- Project roles, task breakdown, responsibilities, and leadership.
- Each team must appoint a <u>project leader</u> who will be replaced by the next student through the project. Team leaders are responsible for delegating tasks, motivating team members, and making people's role clear. Team leaders are encouraged to produce log files that contain minutes of the team meetings. Project effort is assessed by means of project leadership, planning, and initiative skills. Log files are indications of your leadership skills and effort. We will use the log files to assess the efforts in addition to a number of other criteria.
  - If you have taken ESOF 3050 you should remember how to create log files on D2L; that is, click on the Discussions tab, next click on your group number, next click on "Start a New Thread", and then write a new log file. This ensures that every log file will be timestamped.
- Project deliverables and milestones.
- Project development cost/duration estimation.
- Market cost and revenue generation.
  - Note: Throughout the project you are required to monitor and measure the actual development effort and compare it with the estimated effort.
- Description of risks involved and potential ways to mitigate these risks.
- Document structure, style, readability, and the use of high-quality drawings, graphs, and other figures.

4. Interim Report: Specifications Document

Students in the group should submit an interim report containing the specifications of the software product. The mark is based on the following, but not restricted to:
- Description of the project's requirements and specification.
- Description of the system architecture, including

- o Class diagrams and other interaction diagrams (if applicable)
- o Database models and diagrams (if applicable)
- o Algorithms used to implement methods and preliminary analysis of algorithms' complexities (time and storage).
- o System interface description (GUI)
- o The interim results and pseudo-code
- Technical documentation related to requirements elicitation, specification and system design (please submit these documents on CD ROM along with your report).
- Document structure, style, readability, and the use of high-quality drawings, graphs, and other figures.

5. Final Report: Design Document

The following items should be properly addressed in the final report.

5.1 System Requirements & Specification
The mark is based on how well the following questions are answered, but not restricted to:
1. Did students show how requirements are captured, analysed, validated and specified?
2. What requirements engineering tools have they used?
3. Are requirements well documented

5.2 System Design
The mark is based on how well the following questions are answered, but not restricted to:
1. Did students show that the design meets the requirements & specification?
2. Has a theoretical model been used or developed?
3. Has a formal design methodology been adopted and, if so, properly used?
4. Is the design well-structured (e.g. is it hierarchical, are there well-identified interfaces and is there a functional specification for each sub-system)?
5. <u>Did students introduce algorithms used to implement methods and did they analyse the complexity of these algorithms in terms of time and storage?</u>

5.3 System Implementation / Simulation
The mark is based on how well the following questions are answered, but not restricted to:
1. Is the hardware and/or software fully implemented and/or simulated?
2. Is the implementation modular?
3. Is the quality of the final system high/low (*i.e.* elegant or robust implementation consistent with industrial standards)?

5.4 Testing & Evaluation
The mark is based on how well the following questions are answered, but not restricted to:
1. Is the adopted software testing strategy well described?
2. Are the test cases clearly identified and test results clearly documented?
3. Are all faults clearly documented and catalogued?
4. Have students adopted any Software Quality Assurance standards for developing their system?
5. Have students compared the system performance with that of other systems, if any?

5.5 Organization & Clarity of the Report
The mark is based on how well the following questions are answered, but not restricted to:
1. Is the abstract representative of the content of the report?

2. Is there evidence that the student has read a representative amount of relevant material? (Minimum 10 references are required). Is this material properly cited?
3. Is the report logical in its development of the material?
4. Are conclusions significant and well written?
5. Are the grammar and spelling generally correct?
6. <u>Does the report include high quality drawings, graphs and other figures?</u>

5.6 Design Impacts
The mark is based on how well the following questions are answered, but not restricted to:
1. Final analysis of privacy, security and/or safety issues in the design of the software system
2. Final analysis of the societal and economic impacts of the software system.
3. Updated project costs including marketing cost and revenue generation and profitability analysis.

6.   Efforts (15% of total mark)
This mark is based on the supervisor's assessment of:
1. How independently the students handled the different components of the project,
2. Students' collaboration, initiatives, and the theoretical and technical skills learned from the project.
3. <u>Self-learning activities and techniques that helped the students prepared for, and deal with, obstacles and challenges faced in this project.</u>

7. Oral Presentations
There will be two presentations: one near the beginning of the project in early November, and the other is the final oral presentation toward the end of the project (3rd week of March). The mark is based on the students' ability to make an oral presentation with good use of audio/visual aids; clear, precise, and logical language; poise and audience engagement in the presentation and in the answering of questions.

8. General Grading and Document Submission
Each team must submit both in hardcopy and electronic formats on the day on which the report is due. Two hard copies of each document are required, one for the Department and one for the thesis supervisor. Electronic copies must be submitted to the course D2L site. Reports that are late will receive a zero. If you do not submit either hardcopy or electronic formats you will receive INCOMPLTE grade.

A template cover page is provided for the progress report and must be downloaded from D2L, and placed in the report. Each student in the team must report on his/her own part in the progress report. Once the report is complete, it must be circulated between the team members for evaluation and reviewing. Each student must read, approve, and sign the report in the space provided in the 2nd page of the cover page. If you cannot approve the document you should provide reasons in the text box provided in the cover page. If you do not read and sign the report, you will receive no more than 50% of the mark allocated to that report. The project leader is responsible for the coordination of the efforts led to this report and is the one that submit the report to the D2L.

Comments

Comment on Project Proposal:

Comment on Progress Report:

Comment on the overall performance of the students and the quality of the final report: