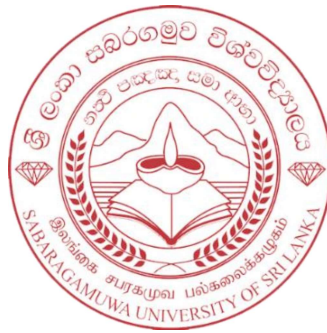




GUIDELINE CAPSTONE / MINI PROJECTS

**Faculty of Computing
Sabaragamuwa University of Sri Lanka
2024**

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2024**

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The information in this document was correct and up to date at the time of publication. The Faculty reserves the right to modify any statement if necessary by the Faculty examination/assessment panel.

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We also extend our appreciation to all team members and stakeholders who provided feedback and suggestions during the revision process. Your input was instrumental in refining these guidelines to meet our organizational needs.

1. Introduction

Capstone Project (IS4110)/ Mini Project (SE 5104) is a compulsory course module to complete the Bachelor of Science Honours Degree Programme in Information Systems and Bachelor of Science Honours Degree Programme in Software Engineering offered by the Department of Computing and Information Systems (DCIS) and Department of Software Engineering (DSE), Faculty of Computing, Sabaragamuwa University of Sri Lanka. This is a group project which every Student should have to complete within their relevant Semesters. Information Systems students should complete their Capstone Project in Semester IV and Software Engineering student should complete their Mini Project in Semester V. This course will enable students to carry out project work to implement a solution for real-world IT problem, under the supervision of an internal supervisor and a mentor. The Internal Supervisor provided by the respective department is responsible for helping students if they have any internal matters and they should monitor the interaction between the students. Every group should find their own mentor who is an expert in the industry and those mentors are responsible for supporting and guiding students throughout the projects and evaluate the progress. The mentors should be aware of the students about the emerging technologies and current trends in the Software Industry and guide the students to apply those technologies to their projects. Also, Mentors should monitor the progress of the student continuously and all the students are required to submit a Project Progress Journal once in three weeks to the mentor. Mentors and Internal Supervisors can schedule meetings with the students to assess the progress as well as to discuss the project work. A student is responsible for updating the progress of the project addressing the feedback given by the internal supervisors and mentors throughout the semester and completing the final software product before the end of the semester by covering all the requirements and the scope defined initially. The Capstone Project/Mini Project is evaluated by the internal supervisors and the same panel of evaluators in the Proposal Presentation and the Final Evaluation.

The duration for the Capstone Project/Mini Project is 15 Weeks (One Semester) and it weighted 2 credits. Upon successful completion of this course, the student will be able to identify the requirements for real-world IT problems, study & enhance software/hardware skills, demonstrate & build the project successfully by hardware requirements, coding, and emulating & testing Report & present the findings of the study conducted in the preferred domain.

1.2 Vision

Our vision is to guide the Software Engineering (SE)/Information Systems (IS) students to achieve their individual goals and to lead the next generation of IT professionals in advancing the Information Technology and Business Process Management (IT/BPM) industry.

1.3 Mission

Our mission is to produce Software Engineering/Information Systems graduates to design and develop quality software solutions, work effectively within challenging environments, and be good professionals. Since the field of Software Engineering/Information Systems has rapidly grown and diversified, we have to create Software Engineering/Information Systems graduates who have high-quality standards, broad-based education and experiential learning in Software Engineering, create knowledge through pioneering scholarship and impactful research, enrich our students' development and leadership skills, and nurture the inherent innovation of our students.

2. Objectives

Objectives of the Capstone Project/Mini Project work:

- Develop students' ability to apply knowledge and techniques learned in theoretical classes to develop software products for real-world problems.
- Gives an insight of a real working environment of an organization to the students.
- Assist students in exploring career opportunities in their areas of interest.
- Develop students' ability to identify the requirements for a real-world IT problem and to gain a deep understanding of a specific function area.
- Develop students' reporting, presenting, and demonstrating ability.

3. Proposed Action Plan

The students are usually required to carry out their Capstone Project in semester III / Mini Project in semester IV. But 15 weeks are not enough for the implementation. Considering this matter, FOC plans to extend the time allocation by dividing the Project work into two Semesters such as:

1. Designing and Planning Phase

The Information Systems students are required to complete the prior requirements for the Capstone Project within their Semester III. The Software Engineering students are required to complete the prior requirements for the Mini Project within their Semester IV. The DCIS and DSE planned several activities within this Semester as shown in Figure 1.

2. Implementation Phase

The DCIS students are required to start the implementation phase of the Project at the beginning of the Semester IV and DSE students are required to start the implementation phase of the Project at the beginning of the Semester V. And they have to submit their final software product at the end of each respective Semesters. The activities in this Semesters were given in Figure 2.

3.1 Designing and Planning Phase (IS: Semester III/ SE: Semester IV)

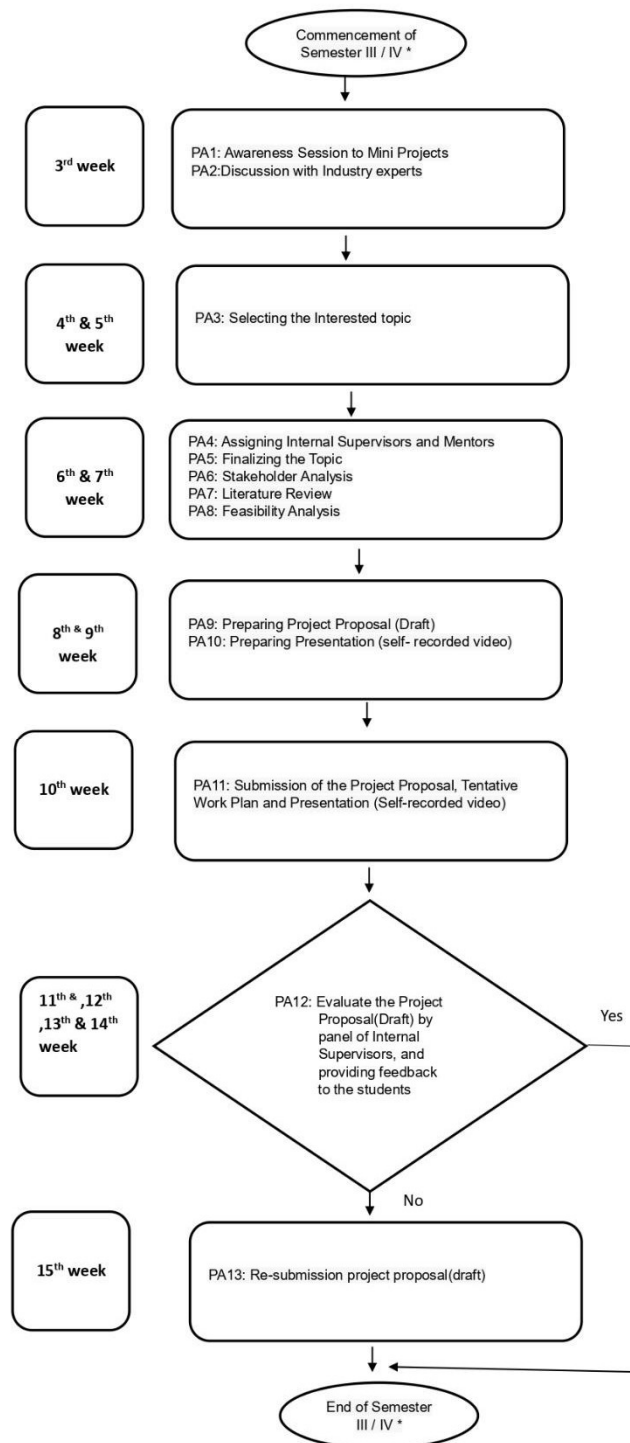


Figure 1 Action plan for Designing and Planning Phase

* IS: Semester III/ SE: Semester IV

PA1: Awareness Session to Mini Project

An Awareness Session will be organized to aware students of the Capstone Project/Mini Project. Under this Awareness Session, students will be aware of current technology trends and Capstone Project/Mini Project guidelines. The awareness program mainly focuses on producing the products as the final outcome of the Capstone Project/Mini Project.

PA2: Discussion with the Industry experts

Professional Development Committee (PDC) will organize a session to have a discussion with industry experts. Under this session, student will be able to discuss their doubt about the Capstone Project/Mini Project and they will clarify their technological doubt regarding the Capstone Project/Mini Project.

PA3: Selecting the interested topic

Students will be informed to select their interested area to do the Capstone Project/Mini Project. They can select a broader area for the first time and then they can select the specific area.

PA4: Assigning the Internal Supervisors and Mentors and Issuing Weekly Meeting Report

The respective departments will be providing an internal supervisors to each group and every group should find their own mentor who is working in the IT industry. The particular mentors should be capable enough to guide the projects, transfer needed knowledge and assess the project progress throughout the project period. Moreover, Weekly Meeting Report will be issued to all the individual students to maintain the records of the weekly meeting taken with the respective internal supervisors. Students need to take the confirmations from the internal supervisors at the end of each weekly meeting.

PA5: Finalizing the topic

Students should have a clear idea about their finalized topic after the feasibility analysis and the discussion with the assigned mentors.

PA6: Stakeholder Analysis

This process is to analyses the Stakeholders for the finalized topic of the project and students will ask to analyses the stakeholder who are influencing the Capstone Project/Mini Project.

PA7: Literature Review

This process is to check whether availability of the existing products for a similar area. Every product must be a novel one.

PA8: Feasibility Analysis

This process is to check the possibility of completing the project during the given time period with appropriate requirements (Technologies, Budget, Time and etc.).

PA9: Preparing project Proposal (Draft)

Drafted Capstone Project/Mini Project proposal should be prepared in consultation with the internal supervisor and the mentor. It should clearly state the objectives and environment of the proposed Capstone Project/Mini Project to be undertaken.

PA10: Preparing Presentation (Self-recorded video)

The presentation should be a concise yet detailed summary of the student's plan for the Capstone Project/Mini Project presented in an interesting and logically organized way. The presentation should consist of a self-recorded video that describes the particular project with the proposed plan. Each member of the groups should be presented their specific tasks to be done within the project.

PA11: Submission of the Project Proposal, Tentative Work Plan and Presentation (Self Recorded Video)

Every groups are responsible to submit the prepared project proposal, Tentative Work Plan, and Self-Recorded video.

PA12: Evaluate the Project Proposal (Draft) by panel of Internal Supervisors, and providing feedback to the students

This process is to evaluate the submitted Project proposal and self-recorded video presentation by the panel of internal supervisors. Every group will be given suggestions and feedbacks about the proposal.

PA13: Re-submission project proposal (Draft)

Students are responsible to resubmit the project proposal by addressing all the comments and feedback from the reviewers.

3.2 Implementation Phase (IS: Semester IV / SE: Semester V)

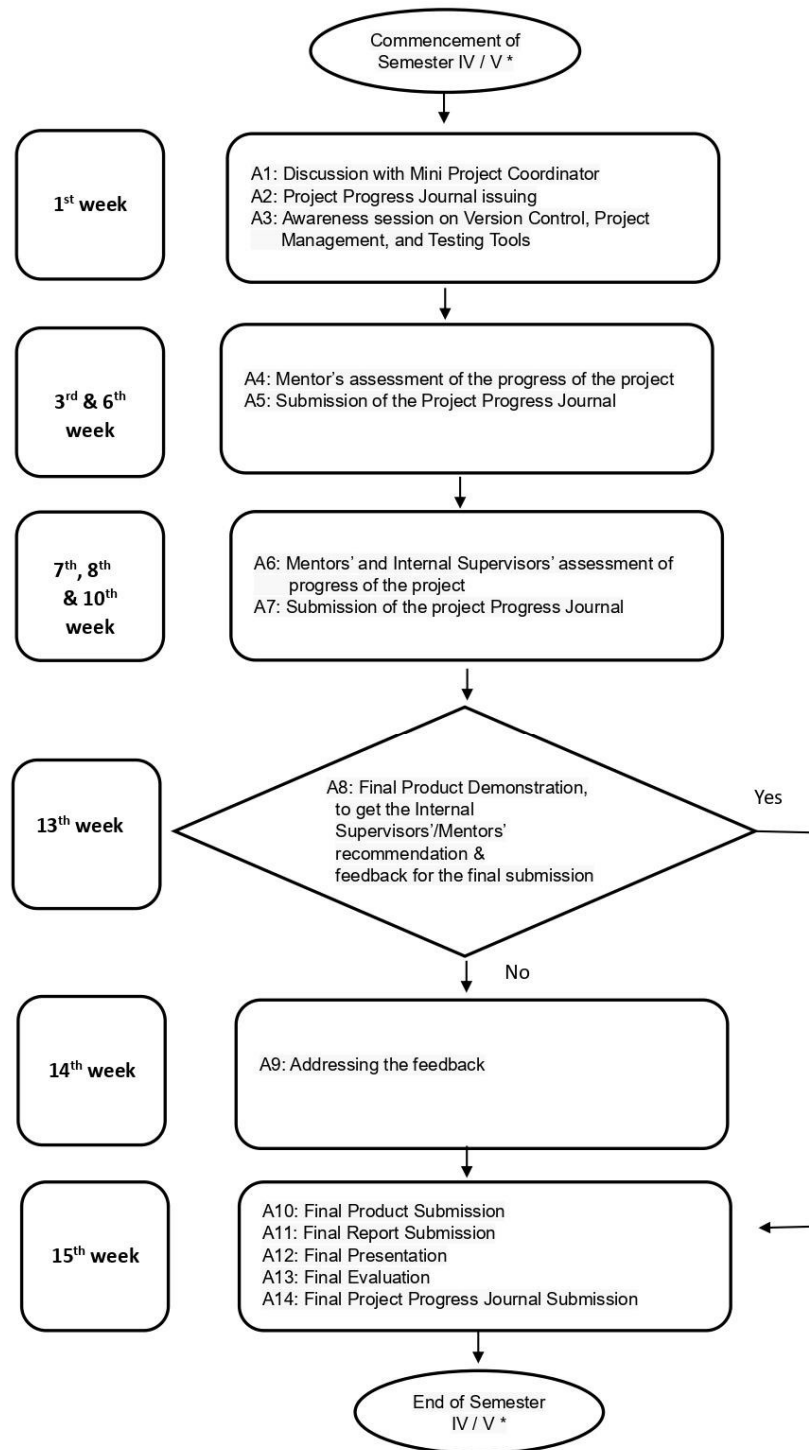


Figure 2 Action Plan for Implementation Phase

* IS: Semester IV / SE: Semester V

A1: Discussion with Mini Project Coordinator

After addressing the feedbacks given by the Review panel, students will be able to start the project implementation. This discussion will help each group to solve the problems which they are facing at the moment. Project Coordinator is responsible for helping students and facilitate them with needed requirements.

A2: Project Progress Journal Issuing

The Professional Development Committee (PDC) will issue a Project Progress Journal book for the students. Each student of the group must maintain a Project Progress Journal to record of their daily tasks, meetings along with mentors and supervisors, remarks of their discussion with the signature of their mentor and the internal supervisor.

A3: Awareness session on version control and project management tools

An Awareness Session will be organized to aware students about Version controlling and project management tools. This will be conduct by an expert in the field and students will be able improve their knowledge in the regarding fields.

A4: Mentors assessment of progress of the project

The performance of the students will be assessed by the respective mentors once in each three weeks. Consequently, Students are responsible to submit a Project Progress Journal to respective mentor and it should be verified by the internal supervisor as well.

A5: Submission of the Project Progress Journal

The performance of the students will be assessed from project progress journal during the semester. These project progress journals are required to be submitted by the students at the end of each three weeks with the mentor's signature and considerable amount of marks will be given to each submission.

A6: Mentors' and Internal Supervisors' assessment of the progress of the Project

The performance of the project group will be assessed by the respective mentors and internal supervisors. Consequently students are responsible to submit a Project Progress Journal to their respective mentors and it should be verified by the internal supervisor as well.

A7: Submission of the Project Progress Journal

The performance of the students will be assessed from project progress journal during the semester. These project progress journals are required to be submitted by the students at the end of each three weeks with the mentor's signature and considerable amount of marks will be given to each submission.

A8: Final Product Demonstration to get the Internal Supervisors/Mentors' recommendation & feedback for the final submission

Each group must complete 100% of their final product and demonstrate it to their respective mentors and internal supervisors to get approval for the final submission. The respective mentors and internal supervisors should check whether the final product meets the given scope and will give feedback and recommendations for the final submission.

A9: Addressing the feedback

Students must address all the feedback given by the mentors and internal supervisors and the progress of the project before the final submission. If there is no any given feedback, they can submit their project for the final submission.

A12: Final Product Submission

The final product of the Capstone Project/Mini Project must be submitted by every project group at the end of the Capstone Project/Mini Project semester (Beginning of 15th week). This should be a completely workable product that completes all the defined scope of the project proposal.

A13: Final Report Submission

The final report must be submitted by every project group at the end of the Mini Project (Beginning of 15th week). The report should be prepared using the Mini Project Report Preparation Guidelines provided by the respective departments.

A14: Final Presentation

The oral presentation should be a concise yet detailed summary of the Students' overall performances during the project presented in an interesting and logically organized way. The presentation should submit to the department at the beginning of the 15th week.

A15: Final Evaluation

The final evaluation will be taken by a panel of experienced evaluators. This panel of evaluators will be the same from the beginning to the end of the Capstone/Mini Projects. They will assessed the overall performances of the each student and the final outcome.

A17: Final Project Progress Journal and Weekly Meeting Report submission

The Final Project Progress Journal and the Weekly Meeting Report should be submitted by the students after completing the project implementation and he/she should be clearly state their daily tasks and weekly summary with the signature of the respective mentor and the internal supervisor.

4. Instructions for the Students, Mentors and Coordinator

4.1 Instructions for Students

- This is a group project which every students should be completed.
- A list of final guidelines as approved by the Department of Computing and Information Systems/ Department of Software Engineering is floated to students.
- Projects groups have to select the interested topic of the project by discussing with its members during the 4th and 5th weeks of the Mini Project (Semester IV)/ Capstone Project (Semester III).
- Project groups are allowed to select any interested project with trending/timely technologies such as Machine Learning, Image processing, IOT, Artificial Intelligence, Computer Networking, and etc.
- The Department will provide an Internals supervisor to each project group and each group should find their own mentor who is working in the industry and who is capable enough to support and guide the students throughout the period.
- If the students have any internal matters they need to get the guidance of the respective internal supervisors/project coordinator.
- Project groups should finalize the topic with the help of a selected mentor and they can obtain the needed technical support and guidance to complete the task from the mentor.
- Consequently, students should do a stakeholder analysis, literature review, and feasibility analysis.
- Project Groups are highly encouraged to select a novel project which aligns with emerging technologies with a minimum of 10-12 functionalities and students must strictly consider the important project milestones such as version controlling, testing, and project deploying.
- Projects which are not encouraged to do;
 - Simple Inventory management systems
 - Systems with only a simple database
 - Systems with only CRUD(Create, Read, Update and Delete) Function
- Project groups should submit the project proposal with a self-recorded video and the tentative project plan.
- All the Project proposals will be reviewed by a panel assigned by the Department and students should address all the feedback given by the review panel students should resubmit the proposal within 7 days of the project proposal being reviewed.
- The proposal should be approved by the Department before commencing the project.
- The project groups must report to their **mentor at least once in three weeks** and the **internal supervisor once in a week** to show/update the progress of their work. If the students/groups are not properly communicating with the mentors/internal supervisors, they have the power to take strict actions and report to the respective departments.

- Student need to maintain the Weekly Meeting Report with the Internal Supervisor with the needed approvals and confirmations at the end of each weekly meeting.
- Project Groups should contact their internal supervisors and mentors at the first possible instance and waiting for the last moment will cause for late submissions and marks reductions.
- Each student must maintain a project progress journal to record their daily tasks, meetings, remarks of their discussion and they need to get the signatures of their mentor. This project progress journal should be verified by their internal supervisor as well.
- Project groups must submit their final project report along with the final product, and final presentation to the final evaluation.
- Students should strictly follow the Guidelines provided by the Department to prepare each and every report.
- Students are encouraged to use Version Control Tools like GitHub and Project management tools like Trello, and Microsoft Projects.
- Students are strictly advice to work for the given deadlines. If anyone is not following the rules, each departments have the power to take strict actions and reduce considerable amount of marks for the each submission/milestone. Departments will not extending the deadlines for any reason.

4.1 Instructions for Internal Supervisors

- Every Group will get one Internal Supervisor to get the guidance during their Capstone Project/Mini Project.
- Internal supervisors may get more than one project group to guide during the semester.
- Supervisors are expected to find out the solutions for their internal matters, monitor the interaction between the students and the mentors and they should directly involve to evaluate the progress of the Students.
- Internal Supervisors can schedule the meetings in every week to provide feedback on progress of the project and internal supervisors should confirm the every student's attendance for the weekly meeting by signing the weekly meeting report.
- The department will provide guidelines to prepare proposals, interim reports, final dissertations, and presentations. Internal Supervisors also have access to those resources and are expected to adhere to these guidelines during supervision.
- Internal Supervisors should participate in each and every evaluation throughout the project.
- Guidelines for Supervision
 - Please note that all guidelines for the preparation of documents and presentations are provided to students. Therefore, please advise the students that they should adhere to those guidelines.
 - Please note that those guidelines use very generic terms such as Others' work, Approach, Design, etc. and you are required to guide students to

find suitable terms for these as per their own projects.

- The internal Supervisor should be aware the students with the project objectives, process, evaluation, and the interaction between the Mentor and the Student.
- Please advise students about the importance of testing or evaluation in all scientific projects. You may guide the students to organize the evaluation in terms of evaluation strategy, identification of participants, controlling the experiments, design of questionnaire, and reporting the results. Please make sure that the evaluation has been structured to measure the objectives.
- Always encourage students to work before the deadlines. If any groups is not following the rules, internal supervisors have the power to take immediate strict actions and report to the project coordinator of department heads.

4.2 Instruction for Mentors

- Mentors are expected to help finalize the topic which selected by project group, select the scope of the project, objectives, and other needed technical knowledge.
- The mentor is expected to guide the project groups in the preparation of the final project proposal.
- Each project group can schedule regular meetings (at least once every three weeks) with mentors to discuss about the progress of the project and the mentors can provide feedback/ assessments.
- The Department is not responsible for arranging student/Mentor meetings and both parties can arrange those meetings at a place convenient to each other.
- Mentors are expected to go through Project Progress Journal and Final Report before submitting those to the Department. These reports require the mentor's signature.
- Guidelines for Mentoring
 - Please make sure that the project problem is worth addressing, and that the technology to be used also has a reasonable challenge. In addition, look into the resource requirements and feasibility of the activity schedule in the proposal.
 - Mentors should aware the students of the project objectives, solutions, technologies, project management tools and other needed knowledge.
 - Please check whether students are clear about users, inputs, outputs, processes, features, and technology as per the approach.
 - Based on the analysis, students should be able to develop a top level architecture for the solution with various modules. The design must have a diagram. Please check whether the students have described the modules in the design diagram in terms of what each module does. Advise the students to send the detailed diagrams (class, activity, sequence, etc.) to an appendix. At each meeting check how far they have worked on each module.
 - Please check whether students have identified algorithms, pseudo codes, software, hardware, etc. to implement the role of each module. Advise them to justify the choice of such sources for respective modules.
 - Please advise students about the importance of testing or evaluation in all scientific projects. You may guide the students to organize the evaluation in terms of evaluation strategy, identification of participants, controlling the experiments, design of the questionnaire, and reporting the results. Please make sure that the evaluation has been structured to measure the objectives.
- Copyrights of all the projects will be owned by the Department of Software Engineering, Sabaragamuwa University of Sri Lanka.

4.3 Instructions for Coordinating Committee

- All the Capstone Project/Mini Project activities will be organized by the Professional Development Committee (PDC).
- PDC is responsible for internal supervisor for each project group.
- PDC should float the list of mentors assigned by the Department.
- PDC is responsible for aware the students about the Mini Projects/Capstone Project, organizing awareness sessions.
- This committee will call the number of meetings (at least two meetings) with the respective mentors to monitor the progress of the Capstone Project/Mini Project. The deadlines of each milestone are decided by the PDC.
- PDC is responsible for organizing evaluation sessions, creating project progress journal, and evaluation rubrics.
- This committee will be responsible for evaluating the timely progress of the projects and communicating the progress report to the students.
- In case it is observed by the PDC that any student/project group is not performing well, this committee should take special care to improve their performance by means of counseling them.

5. Guidelines for Proposal and Report

5.1 Capstone Project/Mini Project Proposal Guidelines

Capstone Project/Mini Project proposal should be prepared in **consultation with the Mentor and the internal supervisors**. It should clearly state the objectives and environment of the proposed Capstone Project/Mini Project to be undertaken. Ensure to include the pages and sequence of contents strictly should be in the following order:

- Title of the Project
- Approval of Capstone Project/Mini Project.
- Index
- Acknowledgment
- Group Details and Contribution
- Introduction & Objective of the Capstone Project/Mini Project
- Analysis (Feasibility Study, DFD Diagrams/ER Diagrams, and etc.
- HW and S/W requirement
- Tables and Structure, Number of Modules, Details of Modules, Data Structure
- Proposed System(Including functional and non-functional requirements, Methodology)
- Modules Split-up and Gantt Chart References
- Cost analysis

5.1.1 Guidelines for the Proposal Formatting

- Font face - Times New Roman.
- Font size- 11pt
- Line spacing - 1.5 line space

5.1.2 Template for the Approval sheet

Approval of Capstone Project/Mini Project

1. Title of the Capstone Project/Mini Project :
2. Details of Group members:

Index No	Name with Initials	Email	Mobile No	Signature of Student

3. Name of the Mentor:
4. Mentor's designation:
5. Mentor's Organization

For office use only:

Approved/Not approved

Signature of the Mentor

Date:

Suggestions if any:

5.2 Capstone Project/Mini Project Final Report Guidelines

The Capstone Project/Mini Project may contain 50-100 pages (excluding coding) with double spacing. The project documentation must be with respect to the project only. Capstone Project/Mini Project Report should strictly follow the points given below:

5.2.1 Report Formatting

The information given in this section explains the formatting of the report. Use any word processing tools/latex to set them up.

Layout

- Use A4 size with 35mm left margin 30mm right, top, and bottom margins
- Page numbers should be included (See Tables of Content)

Fonts

- Font type: Times New Roman
- Font Size: 12pt

Alignments

- Allow 1.15mm line-spacing
- Paragraphs should be separated by one blank line
- Permitted font color - only black
- Left and right margins should be justified

Legends

- Should be emboldened and centered

Page limit (Quantity can't substitute the Quality)

- There are no any limitations/strict rules about overall page count.
- Get advice from your respective supervisor regarding the page limit

Print

- The whole report should be printed on one side
- Type: Grayscale

Structure

- Follow the instructions given in Anatomy of the Report

5.2.2 Anatomy of the Report

Title Page

Generally, the title page contains a precise title, names, and affiliations of investigators along with institutional details. Don't do fancy though you are free to follow your own set of ideas.

Declaration

Type the particular declaration given in *Appendix A*.

Group Details and the Contributions

All the details of group members and their contributions need to be included.

Certificate of Approval

Appendix B

Acknowledgment

Even though it is optional, the gratitude towards the people who gave the real contribution and support can be praised here (typically your supervisor, head of the department, friends and colleagues, etc.).

Abstract

The abstract is the shortened form or the summary of the complete report. Give more emphasis on results, recommendations, and conclusion and it should be more concise. Apart from these major points, the purpose of the report can also be included.

This section;

- can contain 250 - 300 words
- should be written as a single paragraph using the present tense

Table of Contents

The arrangement of the complete report can be illustrated in the table of contents. Use Roman numbering except for primary chapters, for which the numerals can be used.

List of Figures

The list of figures with numbers and titles can be shown together with page numbers where the figures are located. Keep in mind that all figures and tables listed here must be referred to inside the main text.

E.g. “The use case diagram shown in Figure 1”

5.2.3 List of Tables

This list of all tables can be shown together with their page numbers. The arrangement of tables should be arranged with chapters.

Chapter 1: Introduction

Through this chapter, a detailed description about the project can be given to the audience. The major points elaborated in other chapters of the report have to be merged together with a brief description. Most importantly, it should encourage the reader to read the complete report.

This section may include the following major points as subsections;

- Major goals and objectives
- Motivation
- The scope of the completed project
- The approach and assumptions while carrying out the project work
- Concise summary of major outcomes

The length of this chapter depends on the nature of the project, where 4000-8000 words is adequate in most cases

Chapter 2: Background

The background section should provide the reasons why the project was initiated, which assists the audience to get complete understanding about rest of the report. The major attention has to be given in explaining the reason why project is intending to address the problem pointed out in the report. With that a clear indication of other related works where the same problem has been tried previously.

Chapter 3: Specification and Design

A specification should describe what the software system is required to do once it is implemented. In more simple words, the specification can be referred to as “expectation” and described as “what the proposed software system does.” The design always gives the description about top-level details of the way of meeting the software requirements.

A strong recommendation is to make extensive use of;

- Algorithms
- Use case diagrams
- ER diagrams
- UML diagrams
- Sequence diagrams
- State charts

Chapter 4: Implementation

In implementation give more description at a finer level of detail by touching the coding level of your project. Possible to describe any problems which caused difficulties during implementation with the solution you found in solving those. Try to describe critical code segments in the system, significant interfaces and other components.

Implementation may include;

- Software and hardware requirements
- Illustration of a non-standard or innovative way of implementing an algorithm and data structure
- Difficulties involving existing software
- Lack of appropriate supporting software
- Over-ambitious project aims

Chapter 5: Results and Evaluation

The primary purpose of the results and evaluation is to indicate taken inferences from your observations. Pay more attention on describing the way you demonstrated that the system works as per the intention.

In evaluating the results, you may include:

- The comparison of experimental results with expected values
- Description of the interrelationship of the experimental results
- Analyze and state the achieved accuracy
- Analyze and state implications or limitations

Chapter 6: Future Work

Some discussions and critiques on your project in order to provide openings to future research should be included in this section. This can be provided as an opportunity for future researchers by expressing unrevealed ideas.

In this section you may include;

- Gaps of the project
- Proposal for enhancement or re-design

Chapter 7: Conclusions

The conclusion chapter should state the achievements of the project in brief. These should be derived directly from the results and evaluation. Simply it is referred as the summary of the finding, may include;

- The importance of the result
- Validity of the result
- Gaps and limitations of the findings

References

List down all important references which you have obtained the information or ideas in preparing the project report. You may include the consulted list of all books, research articles, and technical resources. Each and every reference should be cited in the main text. Follow IEEE standards for referencing.

Glossary

A list of special technical words or acronyms may be necessary. This is particularly true if the subject deals with a new area with a specialized vocabulary that the average reader in the discipline might not be familiar with, such as the Biotechnology. This list should come after the appendices.

Appendices (if applicable)

Appendices are supplementary documents to the main text. All appendices should be arranged in order, titled and alphabetical numbering can be used.

E.g. Appendix A, Appendix B and so on

Appendices may include;

- Pieces of bulky research work/summaries of results obtained elsewhere
- Complete or partial data as tables
- Program listing
- Detailed maps, charts and diagrams

Appendix A - Sample Declaration page Declaration (18pt + B)

We declare that this thesis does not incorporate, without acknowledgment, any material previously submitted for a Degree or a Diploma in any University, and to the best of our knowledge and belief, it does not contain any material previously published or written by another person or ourself except where due reference is made in the text.

Also, we hereby grant to Sabaragamuwa University of Sri Lanka the non- exclusive right to reproduce and distribute my thesis, in whole or in part in print, electronic or other medium. We retain the right to use this content in whole or part in future works (such as articles or books).

Index Number	Name of Student	Date	Signature of Student

Appendix B – Certificate of Approval

Certificate of Approval

We hereby declare that this thesis is from the student's own work and effort, and all other sources of information used have been acknowledged. This thesis has been submitted with our approval.

Index Number	Name of Student	Date	Signature of Student

Name of Internal Supervisor:

.....

Date:

Signature of Internal Supervisor

Name of Head of the Department:

.....

Date:

Signature of Head of the Department

6. Evaluation Procedure

To ensure proper conduction of each project, the progress of each project should be monitored on a continuous basis; first by the mentor, then by the internal supervisor, PDC and the evaluation panel. In order to do so, it is planned to hold three evaluations to be made by each project group in each semester. Entire evaluation will be taken by the same panel of evaluators from the beginning for each and every student.

6.1 Project Proposal Evaluation

This will be a proposal presentation, which will be taken by the panel of internal supervisors. The project topic is assumed to be already selected by the students with the help of the respective mentor. In this presentation, they are required to show a brief PowerPoint presentation describing the main Aim/ Objective of the project, the methodology to be used, the tentative work plan, and the Self recorded video.

If the presentation is not up to the required level, the panel will ask the project group along with their mentor and internal supervisor to modify the project slightly within a week and resubmit or change the project (in case the committee finds the project not of sufficient standard or not feasible). In this presentation the Internal Supervisor is supposed to evaluate each project group based on their project proposal content, self-recorded video and this will be weighted 30% of marks.(Evaluation is performed according to Project Rubrics)

6.2 Final Product Demonstration to get the Internal Supervisors/Mentors' recommendation & feedback for the final submission

Students must complete 100% of their final product and demonstrate it to their respective mentors and internal supervisors to get approval for the final submission. The respective mentors and internal supervisors should check whether the final product meets the given scope and will give feedback and recommendations for the final submission.

6.3 Final Product Evaluation and Presentation

This will be organized by the PDC at the end of Capstone/Mini project semester. The final evaluation will be taken by a panel which consists internal supervisors and department representatives. This same panel will review the progress of the students from the beginning of the semester. Each project group is required to make a project report showing the complete 15 weeks progress of the project. This report should be brief and should mainly contain the detailed methodology/ algorithms adopted/ studies during the entire semester. This report should be signed by the mentor and the respective internal supervisor and should be submitted to the PDC at least two days before the final presentation day during the 15th week.

The groups are also required to make a final power point presentation and present before the final Committee. The students should demonstrate the complete working product to the panel in the final evaluation. In this presentation the panel is supposed to mark each students based on their project content, project outcome and performances, presentation made, project progress (including the submission of project progress journals), queries answered, maintaining professionalism, and attendance and it weighs 70%(10% for all the progress journal submissions and 60% for final evaluations) of marks (Evaluation is performed according to Project Rubrics)