NZQA Level: 7 Credits: 15 GD3S01- Software Engineering Capstone Project	Summative Brief Research Project (Weighting: 100%)	Issue: **Week 1**
		Submission weeks: Proposal: **Week 4** Midway presentation: **Week 10** Final presentation & project: **Week 15**

Submission filename:
YYYY-MM-DD-GD3S01-CapstoneProposal-StudentName.zip
YYYY-MM-DD-GD3S01-CapstoneDraft-StudentName.zip
YYYY-MM-DD-GD3S01-CapstoneFinal-StudentName.zip

This assignment requires students to **extensively research on a topic related to the game industry**, with particular focus on software engineering aspects in order to improve student learning with the ability to synthesize knowledge from a broad range of knowledge base, to evaluate and appraise software engineering principles applied to game development process.

Students are encouraged to **investigate** an area of their choosing, through which they will improve their knowledge in software engineering philosophy, approach and application. For this purpose, students **propose a topic** of their interest, **discuss** with the lecturer and **agree upon doing a research** on the proposed topic.

The course of the project is **self-driven for every individual** requiring six **one-to-one meetings** scheduled in class contact time over the course of the project. Also, students are required to **keep a blog** as a research journal and provide weekly update about their progress.

Learning Outcomes:
On successful completion of this component students are able to
- evaluate, interpret, appraise and apply software engineering principles and practices in their capstone project.
- deliver a capstone project from proposal to final phase producing appropriate research outputs.

Research Topic
Students are welcome to come up with topics that bring aligned disciplines together, investigating approaches for software engineering for game development, production phases etc.

Research might cover but not limited to the approaches listed below:
- Utilise a range of information
- Produce software designs, justifying and defending the decisions
- Discuss and reflect upon problem solving strategies
- Application of theory to practice
- Evaluate, compare and contrast development approaches, processes and designs
- Learn new models, techniques and technologies

NZQA Level: 7 Credits: 15 GD3S01- Software Engineering Capstone Project	Summative Brief Research Project (Weighting: 100%)	Issue: Week 1
		Submission weeks: Proposal: Week 4 Midway presentation: Week 10 Final presentation & project: Week 15

Roadmap and Deliverables

Roadmap of the project is as listed below along with the deliverables:

- Week 4:
    - Proposal Phase: Students present their proposal
        - By the third week, a **proposal document** is created. Proposal is composed of one or two paragraphs and explains the aims of the research, stating the research question and a short discussion around it as well as **four citations** in bibliography.
        - Each proposal is **reviewed by peers**.
        - Lecturer and classmates comment and green-light based on the criteria as:
            - Is it a valid question?
            - Is the aim/question clear to understand?
            - Is it achievable?
        - Deliverable: **Proposal Document: GD3S01-CapstoneProposal-*Student_Name*.pdf**

- Week 10:
    - Midway Presentation (To be scheduled in class time.)
        - Midway presentation explains the ongoing state of the research as to "What has been found so far?", "What is to be done next?", "Where are we?" etc.
        - Deliverable: **Midway Presentation**
    - Draft Research Document
        - Draft research document is not to be marked, but to provide feedback about the structure and breadth of the research. Draft document should be representing the unfinished final work, in middle stage.
        - Deliverable: **Draft Research Document: GD3S01-CapstoneDraft-*Student_Name*.pdf**

- Week 15:
    - Final Presentation (To be scheduled for class time.)
        - Final presentation explains the research with results/outputs/findings, demonstrating the research itself with supporting material, implementation and demo (if any).
        - Deliverable: **Final Presentation**
    - Research Document
        - Research, investigation along with any findings through the progress of the proposed topic is collated in a research document of no less than 5000 words.
        - The *Research Document* must have a professional and consistent appearance; images/diagrams/charts should be used to help illustrate decisions, concepts and findings.
        - Deliverables:
            - **Research Document: GD3S01-CapstoneFinal-*Student_Name*.pdf**
            - Software application / Implementation of the proposed topic (if any) as per the Research Document along with the results obtained (if any).

All deliverables to be created in the week declared above and submitted as stated in the submission file name section by the submission times.

Presentations should take place as scheduled ahead and enclosed in the relevant deliverable submission.

NZQA Level: 7 Credits: 15 GD3S01- Software Engineering Capstone Project	Summative Brief Research Project (Weighting: 100%)	Issue: Week 1
		Submission weeks: Proposal: Week 4 Midway presentation: Week 10 Final presentation & project: Week 15

Document Structure Guideline:
Research document should be organised under relevant titles and subtitles depending on the course of the topic. Most of the titles are left to researchers' choice; nevertheless, following a general outline similar to the analysed articles is recommended. Regardless of the titles between Introduction and Conclusion, the document should start and end with the sections as listed below:

> Table of Contents
> List of Figures
> List of Tables and Charts
> Abstract
> 1. Introduction
> 2. …
> 3. …
> 4. Conclusion
> 5. Future Work
> Bibliography

Document Formatting Guidelines:
- The documents are to be in the form of an Adobe PDF document.
- The font must be Times New Roman point size twelve, 1.5 line spacing.
- Layout set to fully justified.
- The header must contain the author's name using left justification.
- The footer must contain the page number using right justification.

Citations and Bibliography:
Bibliographic entries in the body of the research paper should be cited as necessary and a comprehensive bibliography of resources used should be constructed adhering to the referencing guide specified below.

- Document referencing should adhere to IEEE citation and referencing standards.
- Caption for the images should be present below the image and numbered with the section number in the form of "*Figure [Chapter Number].[Image number]*".
- Name of the chart and a short description should be present below the chart and numbered in the form "*Chart [Chapter Number].[Chart number]*".
- Tables should have names above the table, numbered with the section number in the form of "*Table [Chapter Number].[Table number]*".

Spelling and Grammar:
The document should be spell checked and grammar checked. Proof reading to ensure consistency and correctness of the document is strongly recommended.

NZQA Level: 7 Credits: 15 GD3S01- Software Engineering Capstone Project	**Summative Brief** **Research Project** **(Weighting: 100%)**	Issue: **Week 1**
		Submission weeks: Proposal: **Week 4** Midway presentation: **Week 10** Final presentation & project: **Week 15**

Assessment Requirement:
Students are required to be engaged in research and demonstrate their engagement throughout the component by arranging meeting with the lecturers, sound knowledge and discussions in the meetings, writing an online journal in contribution to the research culture. In order to be eligible for finalising their research, students need to fulfil these requirements.

A submission that is not complying with the requirements of the **Demonstration** element is unacceptable, and will not be evaluated to a passing grade.

Assessment Criteria:
Assessment criteria is based on the elements listed below.
Table 1. Assessment Criteria – Elements

Elements

Demonstration (25%)

• An eligible proposal to start the project.

• Six meetings over the project time.

• Online journal: Weekly blog posts and discussion.

• Midway Presentation demonstrates the proposed topic, course of the research and ongoing state of the project.

• Final Presentation demonstrates the research project as a whole, explaining the domain, analysing the information, and drawing a conclusion.

A (Range: 80% ≤ x ≤ 100%) Outstanding/Excellent	B (Range: 65% ≤ x < 80%) Very Good/Good	C (Range: 50% ≤ x < 65%) Acceptable/Satisfactory	D (0%) (Range: x < 50%) Unsatisfactory/Below standard
Complete all the activities	Few meeting are missing but all other activities are completed. Research proposal is a must.	Three or less of the activities are completed. Research proposal is a must.	Missing almost all activities.

Sources (10%)

• Considerable number of purposeful sources is collated to synthesise information.

• Valid and relevant sources are used including scholarly articles.

A (Range: 80% ≤ x ≤ 100%) Outstanding/Excellent	B (Range: 65% ≤ x < 80%) Very Good/Good	C (Range: 50% ≤ x < 65%) Acceptable/Satisfactory	D (0%) (Range: x < 50%) Unsatisfactory/Below standard
15 credible and relevant sources have been used	10 credible and relevant sources have been used	5 credible and relevant sources have been used	Sources are not credible and relevant

Citations (5%)

• All sources are cited and formatted properly throughout the document and included in proper places.

• All cited sources are used in the document.

A (Range: 80% ≤ x ≤ 100%) Outstanding/Excellent	B (Range: 65% ≤ x < 80%) Very Good/Good	C (Range: 50% ≤ x < 65%) Acceptable/Satisfactory	D (0%) (Range: x < 50%) Unsatisfactory/Below standard
All sources have been cited and formatted properly.	Not all sources have been cited and formatted properly.	Few sources have been cited and formatted properly	Sources have not been cited

NZQA Level: 7 Credits: 15 GD3S01- Software Engineering Capstone Project	Summative Brief Research Project (Weighting: 100%)	Issue: Week 1
		Submission weeks: Proposal: Week 4 Midway presentation: Week 10 Final presentation & project: Week 15

Writing Style (10%)

- Grammar, spelling, punctuation, terminology and language of the document are coherently and academically appropriate.

- Adheres to the writing guideline stated in the brief.

A (Range: 80% ≤ x ≤ 100%) Outstanding/Excellent	B (Range: 65% ≤ x < 80%) Very Good/Good	C (Range: 50% ≤ x < 65%) Acceptable/Satisfactory	D (0%) (Range: x < 50%) Unsatisfactory/Below standard
The report is free from errors	Very few (not more than 5) errors are present	Few errors (less than 10) errors are present	More than 10 errors are present

Quality of research and research document (50%)

- Document is organised in a logical manner enabling the reader follow through and easily grasp the information provided.

- Proposed topic/research question is stated clearly.

- Research is built on/around the proposed topic collating information in appropriate breadth and depth, explaining, demonstrating and applying (if applicable) the acquired knowledge, facts, techniques, and approaches clearly without losing focus.

- Research provides appropriate analysis and evaluation across samples based on the citations and/or application of the research itself.

- Research demonstrates valuable collection of knowledge explaining, constructing and synthesising information, providing insights, critical thinking and analysis, with reflection upon the game industry.

A (Range: 80% ≤ x ≤ 100%) Outstanding/Excellent	B (Range: 65% ≤ x < 80%) Very Good/Good	C (Range: 50% ≤ x < 65%) Acceptable/Satisfactory	D (0%) (Range: x < 50%) Unsatisfactory/Below standard
A complete report including Title, Abstract, Introduction, Literature review, Research problem statement, Methodology, Results, Discussion, Conclusion, Future work, with an excellent depth and details.	A complete report including Title, Abstract, Introduction, Literature review, Research problem statement, Methodology, Results, Discussion, Conclusion, Future work, with a good depth and details.	A complete report including Title, Abstract, Introduction, Literature review, Research problem statement, Methodology, Results, Discussion, Conclusion, Future work, with a fair depth and details.	Mostly incomplete report.