Bachelor of Computer and Information Sciences

Software Engineering ENS701 and 737205
Semester 1, 2016

ASSIGNMENT 1b
Team Project

Contribution to final marks: 35%

Due date:
Milestone 1. Due date: 5pm, 15th April 2016
Final Deliverables. Due date: 5pm, Friday 27 May

Team Effort

- This is a team assignment to be managed and submitted as a Team of 3-4 people.
- All Team members will receive the same mark for this assessment unless it is indicated in the Team Participation Form that contribution or participation was not equal.
- The lecturer may also negotiate an unequal assignment of marks under certain circumstances.

Submission Requirements:

All deliverables and required evidence for this assessment must be made available on the official team wiki provided for your team on Blackboard.

Your wiki must be structured as follows:
- Your wiki should clearly identify the names and Student IDs of all your team members.
- Separate sections for 'Deliverables' and 'Evidence'.
- Within 'Deliverables' separate sections for 'Milestone 1' and 'Final'.
- The 'Evidence' section should include at a minimum separate sections to cover collaboration, planning and tracking, and quality assurance. You should add whatever other sections you need to make your approach to this project work effectively.
- All deliverables should be professionally presented and use APA 6th reference formatting for citations and reference lists. Authors and document history should be included.

Purpose of Assignment

This assignment relates directly to the following course learning outcomes:

- *Describe contemporary professional and technical issues in software engineering.*
- *Analyse issues affecting the organisation, planning and control of software-based systems development and select appropriate methods or techniques for addressing those issues.*
- *Evaluate the relative merits of a range of software engineering techniques and methods.*
- *Demonstrate advanced, critical knowledge of a specialist area of software engineering.*

Aims

- To analyse a case or particular context in software engineering and to select an appropriate approach along with a suitable set of practices and tools for that situation.
- To justify that selection based both on the particular project or context and on evidence derived from research about the relative merits of software engineering techniques.
- To collaborate with others to plan, track and deliver this analysis, recommendation and justification.
- To communicate clearly to others your recommendations and rationale with supporting evidence.

Deliverables & Milestones

Milestone 1. Due date: 5pm, 15th April 2016

Deliverable	Detail/ Marking Criteria	Weighting
Team Agreement	*Who will do this work?* Identifies team members, their roles and responsibilities. Must include coverage of: — Agreed modes and frequency of communication. — Mechanisms adopted for work allocation. — Decision making processes including any processes for handling disputes.	5%
Work Breakdown Structure /Release Plan	*What work will you do? Which case study have you selected?* Convey using a single page how you plan to approach this work and share it amongst the team. Must include: — Time-boxes for tasks. — Estimates of effort.	5%
Work Approach & Practices	*How will you do this work?* What approach or practices will you use to ensure you produce the best products in a timely manner? How will you make use of principles and practices that have been shown to be effective (see Meyer 2014, p154)	5%

Final Deliverables. Due date: 5pm, Friday 27 May

Deliverable	Detail/ Marking Criteria	Weighting
Recommendations for Project Approach	This comprises two items. **Report** Introduces the project and context and makes recommendations for suitable project approach/s. All recommendations are supported with clear rationale that reference both project attributes and software engineering literature where relevant. The report should also link to the 'Project Practice Guide' and the 'Project Tool Guide' (see below) for specific details related to implementing practices or tools. **Executive Summary** A single presentation slide that provides a summary of both your project and context and of the recommendations you are making and why. The goal is to convey your results clearly to a set of intelligent but busy people.	25%

Project Practice Guide	The project practice guide identities and describes the recommended practices for each of the following areas: — Collaboration & Communication — Requirements Engineering — Project Planning and Tracking — Managing Change — Quality Assurance Links are provided to resources that support the practice and that enable future teams to upskill.	15%
Project Tool Guide	Identify and justify the tools needed to support the recommended processes and practices.	10%
Tool/Practice Learning Package	Select one tool or practice that you have recommended and prepare a learning package that would help a team quickly upskill to include the tool/practice in their daily process. You must include: — Goals. — Target Audience – assume people that are not familiar with the tool/practice. — Learning plan — Learning resources. You are free to include resources produced by others where they are freely available and correctly referenced. — Learning activity. At least one activity to support learning. This should be developed by you. Assume that you have 4 hours available to upskill the team. It may be used in a single session or divided across multiple sessions	10%
Evidence of Development Process	Your team must provide evidence to support how you have collaborated and produced these deliverables. This should include evidence of: • collaboration, • planning and tracking, • version control, • quality assurance.	15%
Team Retrospective	Reflecting on your results and work practices is an important aspect of continuous learning and improvement. Hold a retrospective for this project and summarise your conclusions in a single page document that identifies: — Practices/processes that you would use again & why. — Practices/processes that you would drop & why. — Practices/processes that you would add if you had to do a similar project again & why.	5%
Individual Retrospective	Individual reflection is also important for learning. Identify: — Two things you did well.	5%

	— Two things you could improve. How? — Two things you have learned during this project.	

Project Description

This project requires your team to select **one** of the case studies identified below.

Software Engineering research provides many examples that share positive and negative software engineering experiences, and that provide empirical evidence of the effects of a range of approaches, practices and tools. Making the best use of this body of knowledge is essential to improving our professional practice. This assignment asks your team to apply this knowledge to a particular context and use it to justify the selection of software engineering techniques.

- ### Case Study 1

Product: Software associated with a new robotic health device which will work in hospitals.

Organisation: Large NZ based company with long term experience selling into international market for health products.

Background:

This new health device is the result of the company's considerable investment over time in research and development. They are excited about the possibilities it brings and about the way it will round out the products they already sell into the international health market. The research and development arm of the company is domiciled within New Zealand, as are two of their software development teams, but many of their other functions (eg manufacturing, marketing, software development) are spread across their other 4 sites in Vancouver, Thailand, Mexico and Vietnam.

The company has already registered patents for the technology involved. They have a strong in-house skill set in the compliance and regulatory infrastructure for health products. Their existing overseas software teams support other products already in the market. For this new product they would like to use one of their New Zealand based teams used to working on prototypes with their research engineers to lead off, and extend it with teams from Vancouver and Vietnam once they are in full development. The current New Zealand based team is 9 people and uses a somewhat adhoc process as they produce proof of concepts rather than products. Both the Vancouver and the Vietnam teams use a company specified plan-driven development process that has been in place for 11 years.

- ### Case Study 2

Product: Share portfolio management software. First released in 2004. Current version 6.4.

Organisation: Used exclusively in NZ by 11 small to medium sized companies that belong to a single Investment Management franchise.

Background:
Stability, usability and support of current platforms by the software have become an issue for the franchisees. This triggered a search for a replacement product. The result of that extensive project was a decision to redevelop and extend the existing product because it was relatively unique in the market. The franchise group believes that this product differentiates their business but also has potential as a product for on-selling if it is redeveloped effectively.

The existing software has a large body of code which has decayed over time. There is a team of 3 people currently that maintain and support the software. The software does not currently support mobile platforms.

The Franchise group has confirmed feasibility for this redevelopment and, following a failure to interest software development companies has decided on an in-house development team for the new product. They envisage that this team will be attached to the franchise headquarters in Albany and will start with 12 new members (in additional to existing team) and increase to around 18 by the end of 2017.

- **Case Study 3**

Product: Multiplayer interactive game.

Organisation: Small indie game development startup. Current work force: 4;

Background: A small game startup has been successful in promoting their idea in an international contest. As a result they have received some startup funding and now need to scale up their company to make this game a reality. Their current scoping and planning work suggests that this is a 2 year project for a team of 45 – 50 people, including developers, designers, artists etc.

Note: it is important to make sure all work that is not your own is acknowledged using appropriate referencing (in APA 6th format) and is either marked as quotations or the ideas are appropriately paraphrased.

If you are unsure what this means please see your lecturer.

Non-conformance to this will be treated as plagiarism and may end up with you being allocated a fail mark.

If you are unsure of the meaning of the instructions or the criteria against which your work will be assessed ask your lecturer.

References

Meyer, B. (2014) *Agile! The Good, the Hype and the Ugly.* Switzerland : Springer International Publishing.