**228.711 Engineering Practice 6: Capstone Project**

**Mechatronics/ECE/EIM**

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| **Assessment** | **Date Due** | **Weighting** |
| 1st Progress Meeting | 25 May 2022 | 10%  (10% Group modified by ICP) |
| 1st Progress Report  (Assessment 6) | 27 May 2022 | 5% Individual |

Due date: 25 May 2022

Percentage: Assessment 2: 10% Progress Meeting (Group modified by ICP)

Assessment 6 (part) 5% Teamwork (Individual)

Form: Team interview/presentation with staff (Progress meeting mark) and Individual report (progress report for teamwork)

Purpose:

To demonstrate progress against a clearly presented project plan and to provide evidence of the level of individual understanding and engagement in the project.

Content guideline:

The team meeting to demonstrate progress against a clearly presented project plan and demonstrate team understanding of the problem and creative approaches to solving the problems they have encountered, including prototyping of ideas and solutions. The team must provide an ICP assessment at the meeting.

Individual team members should clearly demonstrate their progress against the team’s project plan and assigned tasks, specific key decisions and their basis, any specific issues that may impact project completion, individual contribution to team and project, and future planning. Each student needs to submit an individual report (3 pages max.).

**Progress Meeting (Group, 10%):**  Key elements that might be considered are:

Any changes to the background and project context, project scope, deliverables and outcomes, constraints, risks, and key stakeholders. Report on Progress to Date, background research, initial design, Initial concepts that have been generated, any design requirement or Design specifications – initial technical specifications for your design. Review Tasks performed and key decisions made. Project planning – progress against plan and future planning and have any issues arisen that may impact on the future progress of the project, and how will you address these?

| **Criteria** | **Team:\_\_\_\_\_\_\_ Team Mark allocation** | | | | |
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| **Poor (D<50)** | **Pass (50-64%), %) C range** | **Good (65-79%) B range** | **Excellent (80-100%) A range** | **Mark** |
| Project context, project planning & management. | Limited understanding of the company, project scope and external context.  Limited project planning. Unable to demonstrate individual team members responsibilities within the plan and its implementation | Sound appreciation of the project objectives, scope and context incl. the company, stakeholders’ competitors, regulations etc.\  Sound understanding of the project plan by the team, how it contributes to successful project completion and of individual responsibilities to implementation | Clearly demonstrate extensive knowledge of the project context with ability to widely reference sources of information and their relevance to the project. Are able to demonstrate the development of the plan and its on-going revision to meet project goals and manage risks | Demonstrated application of knowledge of the project context to make well informed decisions that furthers the project both objectively and creatively. Clearly demonstrate a highly mature approach to project planning recognizing implications related to risks, unknowns, changes in stakeholder requirements etc. | \_\_/15 |
| Engg Problem Solving (about what you have found out and not the process itself) | Unable to demonstrate technical knowledge that underpins key decisions in the project | Sound understanding of the technical principles that underpin the project and able to point to key decisions and the technical information on which these were founded | Extensive knowledge of the technical principles and can clearly demonstrates how these principles were derived and how they can be applied to the final solution and its justification | Able to demonstrate an investigation of basic technical principles and their relevance to the project that clearly shows research beyond knowledge taught in the programme. | \_\_/25 |
| Creative Approach (about the results of your approaches not the process itself) | Little or no evidence of creative approaches to any aspect of the project to date | Clearly able to demonstrate the application of creative approaches to problem solving in some aspects of the project e.g. concept generation, team management, communication etc. | Able to demonstrate creative approaches to problem solving across a wide range of aspects of the project and able to demonstrate the value of these approaches | Able to demonstrate a high level of creativity in a range of project areas and leadership in the application of creative approaches across the team in the way it addresses the project as a whole. | \_/25 |
| Prototype development (in the broadest terms\*) | Very little prototyping or testing has been started. | Some important parts of the prototype or concept development have been started. | Many of the parts of the prototype or concepts being developed have been started, some are ready for testing. | The 1st prototypes or concepts have largely been completed and are being tested | \_/20 |
| Professionalism and Contextual consideration as appropriate\*\* | Little or no evidence that the attributes for WA6, 7 and 8 are being considered | Some consideration that the requirements for WA6, 7 and 8 form part of the project. | Active consideration of the requirements for WA6, 7 and 8 are part of the project | Strategy formed and integration of the requirements for WA6, 7 and 8 into the project. | \_\_/15 |
| Team Total | | | | | \_\_\_/100 |

\* This refers to prototyping such as CAD, Process Flow diagrams, storyboards, foam or cardboard modelling, 3D printing, schematics, breadboards as well as more complete and detailed prototypes. It will be project dependent.

\*\* This refers to the following graduate attributes and need to be applied or considered in the project as appropriate. A team should be able to state why any element of these is not being considered in the project (mainly this refers to the Tiriti, Health and Safety in Design and Sustainability.

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| **WA6**: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems |
| **WA7**: Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex engineering problems in societal and environmental contexts |
| **WA8**: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice |

Comments:

**1st Progress Report (5% part of Assessment 6 Teamwork):** Individual team members should in their project report clearly demonstrate their understanding of the project and progress against the team’s project plan and assigned tasks, and clearly identifies their contribution to the team and project and identifies future planning. The report should also be free of grammatical errors and spelling mistakes.

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| **Individual Mark (Teamwork Assessment)** | | | |
|  | **Student Name** | **Individual (Ind. Report) \_\_/25** | **Comments** |
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