MECH 5080M Ethics Assignment

This exercise is designed to prepare you to answer question **E5** of **the IMechE Chartered Engineer Status Application**. Guidance notes are provided on Minerva, but for additional background please consult the Engineering Council and Royal Academy of Engineering's Statement of Ethical Principles, and to the IMechE Code of Ethics.

In the light of the sessions on professional ethics and on teamwork and trust, you are required to make two short entries into a reflective log answering the questions below.

Please note that although you are being asked to reflect on your experiences as part of a team, this is an individual assignment.

The assessment will count for 5% of your final grade for this module and it is due for submission on **Wednesday 15th May at 12.00 (noon)**.

Questions

1. *What issues of trust have arisen for your team? How have you dealt with them? Why do they matter? (500 words)*

During the project, trust was the bedrock of our collaboration, yet it was not without its trials. One incident highlighted the fragility of trust within our team. This incident, while spurred on by a single event, allows reflection on the breakdown, recovery, and strengthening of trust and team cohesion.

In the final stages of the project, during a group meeting, Jordan and Qianli revealed that essential components of their work, specifically the steering software and vehicle data acquisition, were incomplete. This revelation came as a shock, as our team relied on their contributions to complete the project, and were assumed completed as planned. The sudden disclosure disrupted the project and strained morale, as doubts arose regarding Jordan and Qianli's reliability and commitment and projects feasibility.

To address this breach of trust, our team adopted a pragmatic and collaborative approach. After initially conferring between Alex, Curtis, and I, we decided that rather than allowing frustration to escalate, we would engage in open dialogue to understand the root cause of the issue. Through transparent communication, Jordan and Qianli explained their reasons for the oversight, acknowledging the mistaken assumption that their tasks were covered. This candid team discussion, allowed for mutual understanding and paved the way for constructive problem-solving, allowing our group to come to terms with the incident and move forward as a team.

In response to the incomplete work, we brainstormed alternative solutions to mitigate the impact on the project's progress. Despite the time constraints, we prioritised finding feasible workarounds, ensuring that the project remained on track. We employed each team member's strengths to devise solutions to address the gaps in Jordan and Qianli's contributions. This collaborative effort not only resolved the immediate challenges but also

began to repair the unity and cohesion within our team, by placing the critical components in the hands of group members who warranted the trust required to meet the task at hand.

It was at this stage where Jordan and Qianli's behaviour diverged. While Qianli took responsibility and committed himself towards repairing trust in him through hard work, allowing slow reintroduction into more responsible tasks, Jordan's behaviour with ensconcing to Portugal followed by kayaking for the following two weekends, only exacerbated our lack of trust in him that culminated in the total exclusion during implementation of the solution to his missing work component.

Reflecting on this incident highlighted both the difference in work quality, efficiency, and team cohesion when trust is lost, and how different reactions to losing trust can help or hinder regaining it. Qianli's dedication culminating into group re-integration and completion of work contribution, while Jordan's laissez-faire behaviour failed to repair trust in him, leading to an alternative work not being implemented nor completed fully. These differences indicate that trust matters, as the degradation in work efficiency, balance, and quality due to a breakdown of team cohesion likely contributed towards Jordan's inability to finish his work, while Qianli was able too despite the same time crunch and workload. This shows that trust, and the behaviours that garner it such as transparent communication, collaborative problem-solving, and mutual support, are vital.

2. *What ethical principles have you or your team upheld? How have you achieved this? Why is this important? (500 words)*

Over the course of the project, our team largely upheld each of the main four ethical principles. The first of which, Accuracy and Rigour, was paramount in ensuring the quality our work. Firstly, we upheld the principle of Due Care by meticulously evaluating the completeness and accuracy of our contributions, as evidenced by our proactive efforts to address incomplete work promptly and through competence demonstrated through our collective ability to adapt and devise alternative solutions to mitigate risks, such as identification of the infeasibility of creating Arduino steering control software in time and pivoting to the Logitech steering wheel, showcasing our competence in problem-solving. Additionally, our commitment to maintaining Up-to-date Skills enabled us to leverage the latest technologies and methodologies to enhance the project's outcomes.

Despite largely adhering to the principle of Accuracy and Rigour, we stumbled on the point of not knowingly misrepresenting our progress or allowing others to be misled, which we attempted to mitigate against through continuous communication and frequent meetings, however, more could have been done through the use of organisational and tracking applications such as Trello or Microsoft Lists to help us update and track each other's progress in real-time. We were also unable to undertake unbiased testing due to issues with our ethical approval, which would have been beneficial to employ on top of presenting our findings and work through as unbiased a lens as possible. Despite these shortcomings, we upheld the integrity of our work, ensuring transparency and accountability, while striving to

present unbiased evidence, theories, and interpretations in order to foster an objective and impartial decision-making approach.

Honesty and Integrity similarly was a core guiding principle throughout the project. Embracing openness by fostering transparent communication and sharing information openly within the team, highlighted through our resolution of the trust incident. Fairness was upheld by considering all team members equitably, and making reasonable adjustments such as for Curtis to work around his broken leg. Our commitment to Honesty was evident in candid acknowledgment of mistakes and shortcomings, promoting trust and integrity within the team. Moreover, we recognised the potential impact of our work on others and took proactive measures to minimize adverse effects and avoid deception.

Respect for Life, Law, and the Public Good guided our ethical conduct and decision-making through the prioritisation of health and safety, by holding paramount the well-being and adverse effects experienced by the user and surrounding public. Minimisation of risk factors was undertaken through several risk assessments.

Responsible Leadership was evident throughout our project, with several group members showcasing leadership skills in tumultuous situations. Further exemplified by prioritising listening to our stakeholders and to all concerns raised, we produced informed and objective solutions.

These principles matter as they provide a code to follow that exemplifies the traits and behaviours that are becoming of a professional and admirable Engineer, as shown above. Each ethical principle serves a purpose, which if followed will produce positive effects for either yourself, the beneficiaries of your work, or society at large. We should all strive to embody as many of the principles as we can, and look to them when we faulter.