

Design and Professional Practice Marking Criteria

Portfolio

Learning Outcomes

Upon successful completion of this module you will be able to:

1. Explain the engineering design process and use it to develop a design concept to solve a proposed problem
2. Use appropriate engineering tools and softwares to develop and communicate design concepts
3. Discuss and evaluate the suitability of different materials and manufacturing methods to realise a proposed design
4. Communicate technical ideas clearly both in writing and orally
5. Discuss the importance of ethics in engineering and give examples of how this impacts professional practice
6. Use feedback and reflective practice to improve your learning and future performance

The emphasis in this course is on developing a skillset so that you can meet the module learning outcomes. The aim of this portfolio is to keep a record of the skills you have developed and show how you have met the learning outcomes. When marking this portfolio, we will be looking for evidence of completing the learning activities and building your skills, **not on producing a perfect write up of every task, nor of producing perfect products.**

Assessment Structure

Your portfolio is broken down into lessons and assignments on Mobius. We will recommend a schedule to complete these assignments which spreads the work throughout the year.

Your final mark will be based on how well your portfolio demonstrates you have met the module learning outcomes, 2-6 given above. The remaining learning outcome is assessed through the design challenge.

You will receive individual feedback on your portfolio following submission at the end of spring term. This feedback should be helpful in completing the final design challenge.

Marking Criteria

The following criteria are attributes that we will be looking for in your submitted Design Portfolio.

Learning Outcome	Aspect (s)	Criteria
Use appropriate engineering tools and softwares to develop and communicate design concepts	Technical Drawing assignments, Arduino Assignment	The student has demonstrated use of at least one engineering software to produce technical drawings, code or similar. The work clearly communicates the design concept, with appropriate annotations/labelling/dimensioning
Discuss and evaluate the suitability of different materials and manufacturing	Tear Down assignment	The student has included a clear discussion of the materials used which demonstrates understanding of the material selection process.

methods to realise a proposed design		The student has included a clear discussion of possible manufacturing choices which demonstrates understanding of common manufacturing methods
Communicate technical ideas clearly both in writing and orally	Individual Presentation, Tear Down assignment	The student makes good use of images to support the description of an object, concept or idea The student explains ideas clearly and concisely in both oral and written work. The student uses an appropriate level of detail consistent with time or word constraints. The student structures their work well to aid in explanation. The student uses references and citations where needed.
Discuss the importance of ethics in engineering and give examples of how this impacts professional practice	Ethics assignment,	The student has included realistic examples of ethical issues that impact area of Bioengineering professional practice. The student considers both sides of an ethical argument and can draw on relevant ethical frameworks to help recommend a course of action.
Use feedback and reflective practice to improve your learning and future performance	Welcome week reflection, Final portfolio reflection	The student has demonstrated use of their own reflection and/or feedback from others to evaluate at least some aspects of the module. The student has clearly identified how they could apply lessons learned in future work.

Grade Descriptors

Grade	Mark Range	Characterisation
A*	85-100	<p>The work is exemplary and is potentially publishable with minimal further editing.</p> <p>The student has demonstrated attainment of all learning outcomes through work that is consistently of an excellent standard.</p> <p>There is evidence that the student has pursued substantial independent study to support the development of their design and professional practice skills.</p> <p>All aspects of the portfolio are fully completed.</p>
A	70-84	<p>The work is very good and of a publishable standard with significant additional editing</p> <p>The student has demonstrated attainment of all learning outcomes through work that is of an excellent standard.</p> <p>There is evidence that the student has pursued independent study to support the development of their design and professional practice skills.</p> <p>All aspects of the portfolio are fully completed.</p>
B	60-69	<p>The work is good.</p> <p>The student has demonstrated attainment of all learning outcomes through work that is of a very good standard.</p> <p>There is some evidence that the student has pursued a limited amount of independent study to support the development of their design and professional practice skills.</p> <p>All aspects of the portfolio are completed.</p>
C	50-59	<p>The work is mostly good.</p> <p>The student has demonstrated (at least) partial attainment of all learning outcomes through work that is of a good standard.</p> <p>There is limited evidence that the student has pursued any independent study to support the development of their design and professional practice skills.</p> <p>Most aspects of the portfolio are completed.</p>
D	40-49	<p>The work is good in parts but falls below a satisfactory standard in several areas.</p> <p>The student has demonstrated partial attainment of all learning outcomes through work that is of a reasonable standard.</p> <p>Most aspects of the portfolio are completed.</p>
E	30-39	<p>The work fails to reach an acceptable standard in most areas</p> <p>The students work is not sufficient to demonstrate partial attainment of one or more learning outcomes.</p> <p>Several aspects of the portfolio are not completed.</p>