ENGR 489 Preliminary Report Marking Guide

Last Updated: 26 April 2022

Expected Performance

Trait	Excellent [16 - 20]	Good [13 - 15]	Satisfactory [10 - 12]
Introduction and Background Survey [20 marks]	Concisely outlines the concept and explicitly describes important aspects of the final product. Provides a substantial and judicious review of the literature and the state of the art. There are neither obvious omissions nor unnecessary digressions. References and ideas introduced here are foundational and are extensively used in the rest of the report.	Concisely outlines the concept without extrapolating some important aspects. The review shows a comprehensive grasp of the fundamental aspects of the state of the art and the literature. References and ideas introduced here are used subsequently in some sections of the report.	Describes the concept in a basic way, but some important points are only implicitly covered and the final product is unclear. Provides a limited review of the state of the art or the literature, or a relevant but inappropriately exhaustive review, or a review which is too limited/verbose to be of much subsequent use in the report.
Work Done Design, Implementation and Evaluation [20 marks]	TRL 4 achieved: Substantial formulation of concept and design is described beyond proof-of-concept stage. Implementation reported for some components.	TRL3 achieved: proof-of-concept demonstrated and the analysis/design validated.	TRL 2-3: work beyond TRL 2, the formulation of the concept or application, has been performed but not to the proof-of-concept stage required to achieve TRL 3.
Future Plan A detailed description for doing or achieving the project. [20 marks]	Provides a SMART description of the components, features and timelines which are required for successive prototypes, with appropriate milestones. Accommodates or anticipates examinations, coursework	Describes components or features but is incompletely SMART. Shows an awareness of external factors which may affect timelines or cause disruptions, without identifying adequate coping strategies.	A clear picture of the final product/output may be provided, but the details are uncertain and the path to achieve them is unclear or contains obvious deficiencies. Identification of unlikely or near-trivial dependencies

	deadlines and other disruptions such as lead-times for obtaining necessary approvals. Identifies potential dependencies and points of failure, both technical and non-technical.		or points of failure.
Critical Thinking The objective analysis and evaluation of an issue in order to form a judgement. [20 marks]	An overall analysis and evaluation which shows an: understanding of the technical issues from different perspectives; appreciation of limitations of the artefact developed; consideration of how the artefact could be further improved.	Shows a strong comprehension of the technical issues, but a limited or lightweight understanding of limitations or room for improvement.	Exhibits a basic grasp of the technical issues from the most important perspective, without considering any others. Considers only benefits without identifying limitations.
Written Communication Grammar, vocabulary, structure, conciseness and referencing. [20 marks]	See the separate guide to written communication.	See the separate guide to written communication.	See the separate guide to written communication.

Performance Below the Standard Required

Trait	Poor [8 - 9]	Well Below Standard [4 - 7]	Seriously Below Standard [0 - 3]
Introduction and Background Survey [20 marks]	Attempts to explain the concept, but fails to due to — apparently — confusion on the part of the writer. The background review is incomplete, citing several references in a haphazard way, but shows some evidence of learning.	Introduction is haphazard and the background review is cursory. Little evidence of learning.	None, or only a few, introductory sentences, summarising little more than the title. Background section incoherent and/or contains numerous errors and omissions. Only a few (1-3) references cited.
Work Done Design, Implementation and Evaluation [20 marks]	TRL 1-2: background reading has been performed and a formulation or description of relevant proofs-of-concept have been made without the work to provide proof-of-concept being achieved.	TRL 1: little more than background reading has been achieved.	TRL 0: No, or very limited, evidence of work performed on the project beyond the proposal.
Future Plan A detailed description for doing or achieving the project. [20 marks]	A future plan is described but it — implicitly or explicitly — expresses significant uncertainty, or is vague and lacks appropriate specificity, about the future. The section may convey an impression of "going through the motions."	A plan which is overly detailed and which lacks any credibility, or contains obvious errors or omissions. Timelines are either unreasonably detailed or near absent.	Express a plan which is little more than "work on project". May be only a few sentences in length.
Critical Thinking The objective analysis and evaluation of an issue in order to	Shows an incomplete understanding of the technical issues involved. The overall analysis and evaluation are limited and may contain minor errors or deficiencies. Some evidence of reasoning.	Major errors or deficiencies in the analysis of, or reasoning about, the technical requirements for completion of the project. The analysis or reasoning may lack credibility or substance.	Little-to-no evidence of analysis, evaluation or the formation of judgements.

form a judgement. [20 marks]			
Written Communication Grammar, vocabulary, structure, conciseness and referencing.[20 marks]	See the separate guide to written communication.	See the separate guide to written communication.	See the separate guide to written communication.

Notes

1. Traits 1-3 are *core traits* which are directly assessed through the major sections of the preliminary report.

2. Traits 4-5 are *facilitating traits* which allow the core traits to be expressed and which are assessed through the report as a whole.

Introduction and Background Survey

Significant changes in scope or direction may be highlighted in any trait.

Work Done

Technology Readiness Levels

Projects can reasonably be expected to follow the 9 Technology Readiness Levels in terms of development across the 30 weeks of the project. At project week 12 of 30, an average project might be expected to be around TRL 3.6. The difference between

TRL 3 and TRL 4 provides a good discriminator between *good* and *excellent* work at this stage, as does the difference between TRL 2 and 3 for the discrimination of *satisfactory* and *poor* work done.

Note: at 400-level there is no *requirement* for novelty.

Technology Readiness Levels for Engineering Projects

TRL for projects whose primary outcome is an artefact, be that software, hardware or a system.

Technology Readiness Level	Description
TRL 1	Basic principles observed and reported
TRL 2	Technology concept and/or application formulated
TRL 3	Analytical and experimental critical function and/or characteristic proof-of-concept
TRL 4	Component and/or breadboard functional verification in laboratory environment
TRL 5	Component and/or breadboard critical function verification in relevant environment
TRL 6	Model demonstrating the critical functions of the element in a relevant environment
TRL 7	Model demonstrating the element performance for the operational environment
TRL 8	Actual system completed and accepted by users (client, supervisor, end-users, etc.)
TRL 9	Actual system proven through successful deployment and operation (by client, supervisor, end-users, etc.)

Future Plan

SMART: **S**pecific, **M**easureable, **A**chievable, **R**elevant and **T**imebound.