SCSE PRCP/PRCM Marking Scheme

Version 1, created 11/11/24 by Richard Hawkins.

Maximum length of PRCP report is 45 pages (A4, Minimum font size 12pt, minimum margin sizes: left, right and bottom 4 cm; top 2.5cm. The spaces between paragraphs must be 12pt).

Markers will stop marking once the page limit has been reached.
The following are not countered as part of the page limit: title page, tables of contents/figures/acronyms, acknowledgements,bibliography, appendices. Note that material included in an appendix is considered for reference only and may not be read by the assessor.

There is no requirement that the headings in the assessment criteria below must be headings of chapters or sections in the report (but students may be advised that this would assist the markers).

Executive Summary (5%)

The executive summary should focus on the presentation of the project to a knowledgeable peer of the student. This section is assessed on how successfully the student communicates the project. Markers are **not** judging the appropriateness of methods, criticality of analysis or rigour of evaluation in these criteria.

Fail (0-2)	- Very unclear project aims and objectives. - Approach, method and results are not presented or are so poorly presented that validity cannot be ascertained. - Evaluation is either poorly presented or absent.
Minimum pass (3)	- Aims and objectives of the project are not clear. - Approach, method and results are poorly presented such that the reader struggles to judge the validity of the work. - Evaluation is presented poorly, with little reflection on what was achieved or its implications.
Merit (4)	- Communicates the aims and objectives of the project but it is not completely clear what the project is meant to achieve. - Approach, method and results are described leaving out details, leading to questions of validity of each. - Evaluation is presented, but not always clearly described or linked to the aims of the project or success criteria. Implications are discussed with some reflection.

Distinction (5)	- Very clearly communicates the aims and key objectives of the project and provides a strong motivation for pursuing it. - A very clear discussion of the approach taken, the methodology applied and the results achieved. - Detailed presentation of evaluation against success criteria and implication of results on future work.

Main Report (85%)

There is no intention that the headings in the assessment criteria below must be headings of chapters or sections in the report (but students may be advised that this would assist the markers). Students are rewarded for their success in attempting appropriately defined and justified work, not on whether the project was a complete success.

Introductory Material/Motivation/Background/Literature Review (20%)

Note that all students undertaking PRCP will have already completed PRCE, consisting of a substantial literature review. Therefore students are only required to discuss any additional literature survey required as part of the design and evaluation activities. This additional literature review should be judged using the criteria described in the PRCE marking criteria.

The report should include a summary presentation of the problem analysis from the PRCE plus any update of this analysis as required.

Fail (0-9)	- No clear motivation for the work, lack of evidence of any serious scholarship. - No clearly defined approach, or not clear what the aim and objectives are of the project, or aim and objectives that are very modest for this type of project. - Extremely poor synthesis of the state-of-the-art.
Minimum pass (10-11)	- Motivation is not clearly articulated or is based on a weak evidence base or motivated solely by personal anecdotes. - A very weakly defined approach, not clear what the overall aim of the project is. - Goals and objectives are present, but are not realistically testable. Any working solution could meet the success criteria – there is no measure of solution merit provided. - Aims are poorly synthesised from the current state-of-the-art, and objectives are very unclear or very modest/too narrow for this type of project.

Merit (12-13)	● Motivation is justified based on some peer-reviewed literature and is reasonably well articulated. ● Goals and objectives are present, along with a clear path to evaluating the project against the goals. ● Well defined aims drawn from synthesis of the state-of-the-art with some clear objectives.
Distinction (14-20)	● Motivation is clearly stated and justified based on appropriately chosen peer-reviewed literature, white papers, grey literature and traditional/alternative media. ● Goals and objectives are present, along with a clear path to evaluating the project against the goals. Not all goals are binary – the goals allow for solutions of different merit. ● A clearly well-defined aim and associated approach based on synthesis of the current state-of-the-art with detailed, justified and suitably ambitious objectives of how to achieve the desired result.

Additional Guidance:

● Motivation and Objectives of the project will be what gets evaluated in the "results and evaluation" section.
● Objectives are things that you ACHIEVE, not things that you DO
● This should link back to the findings from the Critical Evaluation (PRCE)
● What does it mean / what would it take to fill the gap in the state of the art identified in literature survey
● How could we tell the difference between a good solution and a poor solution?

Bad practice example: "The goals of this project are:
1.   to apply Heinrich's three factor method to a rail case study
2.   to suggest improvements to the method for use in rail environments
3.   to use a survey to evaluate the modified method"

Good practice example: "The goals of this project are:
1.   To reach a conclusion regarding the suitability of Heinrich's three factor method in the rail domain
2.   To produce an three factor method which works better that the standard Heinrich's method in the rail domain

Methodology/Design/Implementation (35%)

Fail (0-17)	• Methods are wholly inappropriate or extremely poor in execution. • Major decisions are not recorded. Typically, this reads as if the shape of the solution was pre-determined rather than formed through a design process. • Design products of intermediate steps are not shown – only the finished result is given.
Minimum pass (18-20)	• The selection of methodologies is poorly justified. Methods selected are inappropriate, or very poorly executed, however some skill is indicated in specific instances. • Project process is described in a very generic fashion (i.e., the description could apply to any project). • The solution is described but elements are missing or not described in the required detail. • Design products of intermediate steps are provided and described, but not explained or justified.
Merit (20-24)	• Methodologies are appropriately selected but justification only covers specific subsets of theories, methods or principles. Methods are applied largely correctly across the project, with some improvement possible in some areas. In line with best practices, but occasionally stray from typical approaches with weak or no justification. • All important project decisions are identified and discussed. For key decisions, alternatives are considered with explanations for the chosen path. • The solution is fully described to an appropriate level of detail. • Design products of intermediate steps are provided with good explanation and justification.
Distinction (25-35)	• Appropriate, rigorous and robust methods are selected and applied correctly across the project work, in line with best-practices and standards for the topic of study. Students provide a systematic analysis of the chosen methods applied to the topic of study, comprised of the theoretical analysis of the body of methods and principles associated with a branch of knowledge. • Variations in methods are thoughtfully justified and appropriate. • All important project decisions are identified and discussed. For key decisions, alternatives are considered with explanations for the chosen path. • The solution is very clearly described to an appropriate level of detail. • Design products of intermediate steps are provided with excellent explanation and justification.

Results/Analysis/Evaluation/Testing/Conclusion (30%)

Fail (0-14)	• Results are very modest/narrow-scoped and/or very poorly presented such that it is difficult to know what was accomplished. Results are not synthesised/there are no results to synthesise or outcomes are not relevant or accurate to the results. • Weak or non-existent evaluation, with no explanation for why the evaluation was appropriate. • Conclusions are non-existent, or are so generic that they could be applied to any project
Minimum pass (15-17)	• Results are very modest, narrow-scoped or are poorly presented with only partial coverage of what would be expected for the topic of study and methods applied. Results are synthesised into a set of outcomes that are of questionable value (possible because the results are very modest), or are often not representative of the

	results.
	• Outcomes are poorly evaluated against criteria available, with omissions and lack of detail being common in the analysis, or very light links back to motivation and aim of the project. Evaluation is not treated as a serious part of the research process, but as a "tick the box" exercise. Evaluation fails to identify weaknesses in the solution which are obvious to the marker.
	• The limitations and threats to validity of the chosen evaluation approach are not identified.
	• Conclusions are unrealistic based on the findings of the evaluation and lacking in balance or only weakly refer to the original motivation. Future work focuses on corrections and improvements to the proposed solution only.
Merit (18-20)	• Results are mostly clearly presented, and in mostly appropriate styles and methods applied. Results are synthesised into a set of outcomes for the project that are mostly accurate. Implications for those outcomes in the context of the topic of study are referred to in some detail.
	• Outcomes are evaluated reasonably well against the self-defined criteria, with some minor questions outstanding as to whether the project was a success, and there is some links back to the motivation and aim of the project. Design of evaluation has been considered.
	• Where the method chosen is weak due to resource constraints, there is some discussion of how more rigorous evaluation could be conducted. The limitations and threats to validity of the chosen evaluation approach are identified and discussed.
	• The conclusions are realistic and refer back to the original motivation with some implications and offer a balanced review of the whole project
Distinction (21-30)	• Results are broad-reaching, multi-faceted and clearly presented in an appropriate style for the topic of study and methods applied. Results are skilfully synthesised to identify a detailed set of clear outcomes for the project, and their potential implications in the context of the topic of study are substantial and robustly argued.
	• Outcomes are evaluated on self-defined success criteria for the project and related back to the original aim and motivation of the project. Design of evaluation is carefully considered.
	• Where the method chosen is weak due to resource constraints, this is accompanied by a full discussion of how more rigorous evaluation could be conducted. The limitations and threats to validity of the chosen

	evaluation approach are fully identified and clearly discussed. • Conclusions are realistic and clearly refer back to the implications of the project relating to the overall motivation.

Additional Guidance:

For student projects, it is quite reasonable to indicate what the ideal evaluation method would be, but to chose a smaller scope or less applicable form of evaluation due to time and resource constraints.

Students should be realistic about the limits of the evaluation.

Bad practice example of realistic assessment:
"The evaluation shows that all project goals have been met and that this is a good solution".

Good practice example of realistic assessment:
"The test suite found only minor errors in the implementation. This gives reasonable confidence that the requirements have been met; noting that tests of this nature can only find bugs, not prove their absence. There may be particular cases not tested where the program fails to meet the requirements. Additionally, this form of evaluation doesn't consider whether the requirements were appropriate. The further work section (7.3) discusses some ways this could be assessed."

For future work, specific detail is desirable.

Bad practice item of future work: "Further evaluation of the prototype".

Good practice item of future work: "Evaluation of the prototype with the target user community. This evaluation will be used to assess and improve the usability, as well as validate the feature set provided. In the early stages, this evaluation could follow the same format as the evaluation in this thesis, just with a wider and more representative set of users. Eventually, longer term trials where the product is used for several weeks in the workplace would be desirable."

Written Communication and Referencing (10%)

Fail (0-4)	- Document's structure is very unclear and difficult to follow. - Spelling and grammar are very poor. - Diagrams and images are inappropriately used and often serve to confuse rather than communicate. Tables are nonsensical. - Citations are not complete consistently. Referencing is wrong consistently.
Minimum pass (5)	- Document's structure is often unclear and not logical. - Spelling and grammar errors are common making the document difficult to read. - Diagrams and images are inappropriately used, or often do not provide support to the reader for understanding the information being presented. Tables are often poorly structured. - Citations are often incomplete or inconsistent with one another. Referencing is often inconsistent or not done where appropriate.
Merit (6)	- Good document structure with mostly clear sections, with some questionable logical groupings in some parts of the dissertation. Good quality, clear and concise writing style that is mostly consistent. - High quality spelling and grammar. - Diagrams and images mostly used appropriately, or which have only small issues around presentation. Tables are structured well, if sometimes dense or difficult to understand. - Mostly complete citations in a consistent style, with appropriate referencing within the document.
Distinction (7-10)	- Very well orgstructured with clear sections and structured in logical fashion to communicate the key parts of the dissertation. High quality, clear and concise writing in a consistent style. - Near perfect in spelling and grammar. - Diagrams and images used appropriately and are clear and appropriate for the information being presented. Tables well structured for purposes of communicating appropriate data. - Correct and complete citations in a consistent style, with appropriate referencing within the document.