

MARKING CRITERIA AND STUDENT FEEDBACK

MODULE: Advanced Computational Methods CFD

ASSIGNMENT: CFD : MIRA Car

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This section details the assessment criteria. The extent to which these are demonstrated by you determines your mark. The marks available for each criterion are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.

Common Assessment Criteria Applied	Marks available	Marks awarded	Percent Awarded
1. Research-informed Literature Extent of research and/or own reading, selection of credible sources, application of appropriate referencing conventions. (e.g. Background research into CFD techniques and models)			%
40-49%: References to a limited range of mostly relevant sources. Some omissions and minor errors. Referencing conventions evident though not always applied consistently. <i>You have conducted some basic reading to support your understanding of the CFD process, but a wider range of sources could have been used to inform your methodology with respect to the investigations application.</i> <i>Some research of the MIRA reference car, but limited use to validate/critique your results.</i> <i>Only a single academic reference - we would expect a much wider range of reading at this level to support your understanding, methods, analysis and conclusions. You could have compared established views to your investigation findings to give confidence in the conclusions made. This reference is cited in the works but you should have referred to more sources.</i>	10	4	40
2. Knowledge and Understanding of Subject Extent of knowledge and understanding of concepts and underlying principles associated with the discipline. (e.g. Justification of initial mesh strategy, mesh refinements and geometry based on comparisons with windtunnel data)			
60-69%: Knowledge is extensive. Exhibits understanding of the breadth and depth of established views. <i>You show a broad understanding of the CFD process and have been able to create a reasonable model.</i> <i>Some of the choices have been informed by the empirical results</i> <i>A little more discussion of the MIRA geometry application could have contextualised your understanding and approach. Some assumptions require justification (static floor). Model setup shows that you imposed a logical mesh development strategy. Mesh quality not assessed or reviewed.</i>	25	15.6	63
3. Analysis Analysis, evaluation and synthesis; logic, argument and judgement; analytical reflection; organisation of ideas and evidence (e.g. Analysis of results to help create a validated base case, evaluation of methods used, analysis of aerodynamic device)			
60-69%: Sound, logical, analytical thinking; synthesis and evaluation. Ability to devise and sustain persuasive arguments, and to review the reliability, validity & significance of evidence. Ability to communicate ideas and evidence accurately and convincingly. Sound, convincing conclusions / recommendations. <i>You have conducted some good analysis of your results. You have compared the results obtained to the empirical data and noted any differences - you could have investigated these discrepancies in more detail.</i> <i>You have conducted some good mesh, domain, prism layer studies which have informed your proposed methodology. You have not assessed turbulence models or mesh refinement regions</i> <i>The investigations conducted could have been graphically presented to help convey trends. You could have also investigated other mesh parameters and should have assessed turbulence models. The impact of the different parameters could have been identified by looking at postprocessing. Pressure distribution plots are good but should be overlayed and compared against each other and the empirical data.</i>	30	18.8	63
4. Practical Application and Deployment Deployment of methods, materials, tools and techniques; application of concepts; formulation of innovative and creative solutions to solve problems. (e.g. Methodology, use of post processor, selection of component design parameters)			
60-69%: A very good application of a range of methods, materials, tools and/or techniques. Very good consideration of the context of the application, with perceptive use of examples, where relevant. Evidence of some innovation and creativity. <i>You understand the cfd process and demonstrate some proficiency with the software</i> <i>You have used the basic functions in the post processor to visualise and present the important results to support your model development.</i> <i>Some of the more advanced features of the post processor could have been utilised to make the results clearer</i> <i>Post processing tools are used which demonstrates your ability, but these could have been used to inform your methods and further critical analysis. Basic geometry change with reasonable results - you could have commented on the impact of the geometry change in more detail - how does it effect the flow regimes predicted?</i>	20	13.5	68
5. Skills for Professional Practice Attributes in professional practice: individual and collaborative working; deployment of appropriate media; presentation and organisation. (e.g. Technical report writing and presentation.)			
70-79%: Can communicate professionally and, confidently in a suitable format. Can work professionally within a team, showing leadership skills as appropriate, managing conflict and meeting obligations. Work is coherent, very fluent and is presented professionally. <i>A very professional document which has an excellent structure and is a coherent account of the investigation conducted.</i> <i>Technical report formatting and presentation is excellent.</i> <i>Report presentation is excellent. Presentation is professional. You have used the first person - you should be writing in third person in technical reports (no I, we or mys)</i>	15	11.3	75
Assignment Mark (Assessment marks are subject to ratification at the Exam Board. These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)	Late Submission Penalties (tick if appropriate) Up to one-week late Over one week late		
	63.1		%