

MARKING CRITERIA AND STUDENT FEEDBACK

MODULE: Advanced Computational Methods CFD

ASSIGNMENT: CFD : MIRA Car

STUDENT: Harjot Ubhi

DATE: 1/2/19

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)				%				
50-59%: Inclusion of a range of research-informed literature, including sources retrieved independently. Referencing conventions mostly consistently applied. <i>You have demonstrated a reasonable review of sources to support your modelling approach and understanding of the CFD process. A wider range of sources could have been reviewed and contrasted to give greater confidence in your conclusions.</i> <i>Little or no research of context of CFD study. This would have helped critique your results and draw firmer conclusions.</i> <i>Some evidence of relevant supporting research with citations. You could have looked at more specific literature to the MIRA reference car and studies completed in the past to help support your conclusions and give confidence in your results. A wider range of technical papers could have been reviewed.</i>		10	5.75	58				
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)								
50-59%: Knowledge is accurate with a good understanding of the field of study. <i>You demonstrate a good understanding of the CFD process and have used this understanding to develop a valid initial mesh and mesh refinements.</i> <i>The initial mesh and the mesh development strategy could be more clearly informed through the analysis of the results.</i> <i>Some modelling decisions not fully explained or justified (e.g domain height and width). Meshing strategy not fully explained or justified. You haven't assessed mesh quality. You could have demonstrated how initial results helped direct the development path - how did your first results influence your mesh distribution?</i>		25	14.4	58				
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)								
50-59%: Evidence of some logical, analytical thinking and synthesis. Can analyse new and/or abstract data and situations without guidance. An emerging awareness of different stances and the ability to use evidence to support the argument. Valid conclusions and recommendations where relevant. <i>Some good basic analysis of results conducted to assess your modelling strategy. You could have been more critical of results and investigated reasons for any discrepancies</i> <i>You have conducted some good mesh, domain, turbulence model studies which have informed your proposed methodology. These could have been more detailed.</i> <i>You should graphically present your results so that trends in the data obtained could be easily identified. The domain size independence is very difficult to identify in a table. Some good investigations carried out. Decisions based on computing time could be quantified. Conclusions drawn could be more clearly evidenced. You have not used the pressure distributions to assess the results obtained.</i>		30	16.5	55				
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. Some of the more advanced features of the post processor could have been utilised to make the results clearer</i> <i>You have used some of the basic postprocessing tools, although these could more clearly be analysed to explain the differences of the settings on the floor regimes observed. You should have presented the pressure distributions obtained for comparison to the supplied data. Two interesting investigations of alternative geometries.</i>		20	13	65				
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.)								
50-59%: Can communicate effectively in a suitable format, but may have minor errors. Can work effectively as part of a team, with clear contribution to group activities. Mostly coherent work and is in a suitable structure. <i>A good account of the work conducted. Arguments could be more succinct and evidence based. Presentation could be a little more professional to guide the reader to the important information.</i> <i>Technical report formatting and presentation generally is very good. A couple of minor errors only.</i> <i>Report could utilise for the subsections to help give it a clear structure. Tables should be labelled above. Some figures are not clear which settings relate to which postprocess picture.</i>		15	8.63	58				
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) <table><tr><td>Up to one-week late</td><td></td></tr><tr><td>Over one week late</td><td></td></tr></table>		Up to one-week late		Over one week late		
Up to one-week late								
Over one week late								
		58.3	%					