

MARKING CRITERIA AND STUDENT FEEDBACK

MODULE: Advanced Computational Methods CFD

ASSIGNMENT: CFD : MIRA Car

STUDENT: Joshua Bale

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)				%				
30-39%: Poor evidence of reading and/or of reliance on inappropriate sources, and/or indiscriminate use of sources. Referencing conventions used inconsistently. <i>Very little research conducted to support your knowledge of CFD or the methodologies to apply to this investigation. We would expect a much larger range of research to be conducted at this level.</i> <i>Some research of the MIRA reference car, but limited use to validate/critique your results.</i> <i>You could have conducted much more reading to support your understanding and inform your methods as well as support your conclusions drawn. For example existing studies of the MIRA pick up geometry exist, do these support your results?</i>		10	3	30				
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)								
40-49%: Evidence of basic knowledge and understanding of the relevant concepts and underlying principles. <i>You have create a basic mesh but limited understanding demonstrated through the development of the model.</i> <i>The initial mesh and the mesh development strategy could be more clearly informed through the analysis of the results.</i> <i>You should have conducted base runs to inform your model setup - this would have supported you in decisions such as mesh refinement zones. You have create running models with some correct statements made, but the importance of modelling tools and selection of boundary conditions not fully understood/explained.</i>		25	12	48				
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 recognise the limitations of your model but you have not clearly assessed the impacts of your modelling decisions.</i> <i>Some of the modelling parameters have been investigated but you have not assessed all the parameters mentioned in the brief. The investigations conducted have not been used to clearly develop your method</i> <i>You have not conducted studies into the effects of turbulence models, domain size or mesh density/distribution. These factors can effect the results significantly.</i>		30	15	50				
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)								
50-59%: A good and appropriate application of standard methods, materials, tools and/or techniques. Good appreciation of the context of the application, with some use of examples, where relevant. <i>You demonstrate that you can develop a working simulation using the software. Some of the simulation setup could be improved.</i> <i>You have used the basic functions in the post processor to visulise 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>A working CFD simulation has been produced, but the validity of the results has not been directly compared and assessed against the supplied emperical data (coefficients and pressure distributions should have been directly compared)</i>		20	11.5	58				
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.)								
60-69%: Can communicate well, confidently and consistently in a suitable format. Can work very well as part of a team, with very good contribution to group activities. Work is coherent and fluent and is well structured and organised. <i>A good account of the work conducted. Structure shows some room for improvement to portray your ideas in a more succinct manner.</i> <i>Technical report formatting and presentation generally is very good. A couple of minor errors only.</i> <i>Sections should be numbered. Technical content a little lacking in places with critical assesment of model accuracy and model parameter impact.</i>		15	9	60				
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								
		50.5	%					