

MARKING CRITERIA AND STUDENT FEEDBACK

MODULE: Advanced Computational Methods CFD	ASSIGNMENT: CFD : MIRA Car
STUDENT: Charles Randall	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)				%				
60-69%: Inclusion of a wide range of research-informed literature, including sources retrieved independently. Selection of relevant and credible sources. Very good use of referencing conventions, 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>Some research of the MIRA reference car, but limited use to validate/critique your results.</i> <i>A range of relevant research conducted and used to support understanding and knowledge of subject area and approaches to modelling. You could have more extensively reviewed academic papers specifically looking at existing studies of the MIRA geometry - the results of which could have been compared with your findings to increase confidence.</i>		10	6.25	63				
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 demonstrate a good understanding of the CFD process and have used this understanding to develop a valid initial mesh and mesh refinements.</i> <i>Some of the choices have been informed by the empirical results</i> <i>Explanations of CFD parameters and fluid mechanics basics demonstrates a good understanding. Mesh metrics presented but implications of these not explained. You have implemented a fluid velocity of 30m/s when empirical data was collected at 20m/s - this may cause some inaccuracies. You demonstrate that you understand the CFD process and development of a simulation</i>		25	16.3	65				
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>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>Your have conducted some good mesh, domain, turbulence model studies which have informed your proposed methodology. These could have been more detailed.</i> <i>Domain study could have reduced size further to demonstrate the interaction of the boundaries with the results. General comment dor most of your investigations, Looking 1 point which is most accurate is probably not the best way to decide best settings - you need to look at the trends and when the solution becomes independant of these variables. The trends you have presented indicate all domains run appear to be sufficient size. Mesh investigation and turbulence model study is good. You could have more clearly demonstrated that you used the overlays of the pressure distributions to inform your meshing strategy.</i>		30	20.3	68				
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)								
70-79%: An advanced application of a range of methods, materials, tools and/or techniques. The context of the application is well considered, with extensive use of relevant examples. Application and deployment extend beyond established conventions. Innovation and creativity evident throughout. <i>You clearly demonstrate that you are proficient with the software and CFD modelling.</i> <i>You have used the post processor to visulise and present your results in a clear fashion for conclusions to be drawn.</i> <i>Some good use of the post processor and overlay of the pressure distributions for direct comparison. You have conduct a large number of investigatorative runs, however as your starting mesh was the Lanfrit base settings it would have been better to sweep either side of these rather than increasing accuracy from here.</i>		20	14.5	73				
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 very good account of the investigation conducted, could be structured a little more professionally in places.</i> <i>Technical report formatting and presentation generally is very good. A couple of minor errors only.</i> <i>Check your automatic bookmarks in content pages! Sections should be numbered.</i>		15	10.1	68				
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								
		67.4	%					