

MARKING CRITERIA AND STUDENT FEEDBACK

MODULE: Advanced Computational Methods CFD	ASSIGNMENT: CFD : MIRA Car
STUDENT: Gavin Spring Beynon	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)			%
80-100%: Outstanding knowledge of research-informed literature embedded in the work. Outstanding selection of relevant and credible sources. High-level referencing skills consistently and professionally applied. <i>You have conducted a thorough review of supporting literature to support your understanding of the CFD process and application to automotive external aerodynamics. This has clearly informed your methodology</i> <i>Excellent research into the MIRA Car and existing studies to support your analysis and validate your results. You have drawn comparisons with external sources</i> <i>Some good references included, but a wider range of academic sources could have been reviewed. Research clearly used to influence your modelling approach through initial CFD methods. Good research to define windtunnel parameters and use citations throughout the discussions of investigations to support statements.</i>	10	8.5	85
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)			
80-100%: Highly detailed knowledge and understanding of the main theories/concepts, and a critical awareness of the ambiguities and limitations of knowledge. <i>You have clearly understand the CFD process and significance of the modelling decisions made.</i> <i>You have clearly justified your choices with reasoning and applied logical mesh refinements based on the emperical results and other sources.</i> <i>A very logical approach to simulation model development, using initial results of crude run to inform further modelling decisions.</i>	25	20.6	83
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)			
80%-100%: Exceptional work; judiciously selected and evaluated evidence. Very high quality analysis, developed independently or through effective collaboration. Ability to investigate contradictory information and identify reasons for contradictions. Highly persuasive conclusions <i>Your analysis is thorough and critical of the results obtained. You have clearly recognised any discrepancies in the simulation results compared to the emperical data and explained these with reasoning.</i> <i>You have conducted clear investigations into simulation parameters such as mesh, domain, prisms, and turbulence models. These investigations have led to logical conclusions implemented in your modelling strategy</i> <i>Some excellent analysis of methods applied. You have critically analysed results to draw clear conclusions within the scope of the work carried out. You have clearly identified interactions between model setup requirements such as the influence of turbulence models on mesh and prism layer requierements. You have also analysed secondary factors such as ride height.</i>	30	26.3	88
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)			
80-100%: Outstanding levels of application and deployment skills. Assimilation and development of cutting edge processes and techniques. <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>Generally excellent use of the software to conduct a logical and thorough model development and investigation.</i>	20	17	85
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.)			
80-100%: Can communicate with an exceptionally high level of professionalism. Can work exceptionally well and professionally within a team, showing advanced leadership skills. Work is exceptionally 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 is extremly well presented and is a very professional document. Well done Gavin.</i>	15	13.5	90
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		85.9 %