

MARKING CRITERIA AND STUDENT FEEDBACK

MODULE: Race Engineering

ASSIGNMENT: Aerodynamic Data

STUDENT: Zhaocong Sun

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. Research of testing procedures, vehicle specifics, aerodynamic principles, testing methods etc.)			%					
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 conducted some good background reading, but you could have referenced a wider range of literature to support your knowledge of aerodynamics and vehicle handling</i> <i>You have conducted some good research into aerodynamic testing methodologies and used these to inform your methodology</i> <i>Evidence of some relevant supporting reading which has been used to support background understanding. A wider range of literature could have been reviewed and embedded throughout the report discussion of results to support your conclusions and statements</i>	10	6	60					
2. Knowledge and Understanding of Subject Extent of knowledge and understanding of concepts and underlying principles associated with the discipline. (e.g. Choice of tests and explanation of underlying principles)								
60-69%: Knowledge is extensive. Exhibits understanding of the breadth and depth of established views. <i>You show a good level on understanding of aerodynamics fundamentals and how these may effect vehicle performance in general.</i> <i>You also show an extensive appreciation for the analysis techniques and principles applied</i> <i>Good understanding demonstrated of aerodynamic requirements for different situations. You also demonstrate a good knowledge of aerodynamic principles. Equations implemented are presented but could be explained further.</i>	20	13	65					
3. Analysis Analysis, evaluation and synthesis; logic, argument and judgement; analytical reflection; organisation of ideas and evidence (e.g. Analysis of data, findings and use of MATH channels)								
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>Generally you have conducted some good analysis of the data obtained to draw some conclusions of the vehicle aerodynamic characteristics. Conclusions could be more persuasive with a deeper analysis</i> <i>Required math channels are well posed, understood and presented. You could have looked at more advanced math channels to help support your analysis and conclusions.</i> <i>Math channels presented are mostly correct. Your front and rear aero loads do not appear in figure 6 to incorporate the influence of longitudinal weight to isolate the aerodynamic forces. Excellent analysis of coastdown coefficients using both methods. Some good comments made regarding the aerodynamic loads from the circuit testing, where you have recognised that some setups have less Cop migration. Some further trends could have been recognised such as lateral acceleration capability increase with speed due to downforce. You could have more clearly assessed the relationship between vehicle balance and the aerodynamic loads. Comparison of aerodynamic setups could be clearer highlighting the influences of these on performance at different points of the lap.</i>	35	21.9	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. Test Plan, Use of Motec i2, conclusions drawn from analysis)								
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>Motec has been used to present the data obtained and the math channel results. Some other functions of Motec could have been used to present the data such as histograms. MATLAB use for coastdown analysis is very good.</i> <i>Testing methods and choices could have been explained and justified with reasoning in more detail. Some conclusions could be supported with further evidence and compared against established views. Lacking final conclusion summarising performance of wings and influence of static vehicle attitude on lap performance.</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.)								
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 generally is very good. A couple of minor errors only.</i> <i>Report is generally well presented and follows the guidelines but some equations are not numbered. Some room for improvement with the English and consistency of formatting.</i>	15	10.5	70					
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		64	%
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