

## MARKING CRITERIA AND STUDENT FEEDBACK

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|---------------------------------|-------------------------------------------------------------------------|
| <b>MODULE:</b> Race Engineering | <b>ASSIGNMENT:</b> Aerodynamic Vehicle<br>Testing and analysis (F3 Car) |
| <b>STUDENT:</b> Josh Youngs     | <b>DATE:</b> 25/4/19                                                    |

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 |
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| <b>1. Research-informed Literature</b><br>Extent of research and/or own reading, selection of credible sources, application of appropriate referencing conventions.<br>(e.g. Research of testing procedures, vehicle specifics, aerodynamic principles, testing methods etc)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                     |               | %               |
| 0-29%: Little or no evidence of reading.<br>Views and findings unsupported and non-authoritative.<br>Referencing conventions largely ignored.<br><br><i>You should have reviewed a much larger range of sources to support your understanding of the principles being investigated by this report.</i><br><br><i>You have only conducted minimal research into testing techniques</i><br><br><i>Some research to inform/support coast down method. However the research is very limited and only references to 2 sources. At this level we would expect much wider reading to review established views and methods to add confidence in your approach and conclusions.</i>                                                                                                                                                                                                                                                                                                                                        | 10                                                                                                  | 2.75          | 28              |
| <b>2. Knowledge and Understanding of Subject</b><br>Extent of knowledge and understanding of concepts and underlying principles associated with the discipline.<br>(e.g. Choice of tests and explanation of underlying principles)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                     |               |                 |
| 50-59%: Knowledge is accurate with a good understanding of the field of study.<br><br><i>You demonstrate a superficial understanding of aerodynamic principles and you could have more clearly indicated how you would have expected the balance and aerodynamic setups to interact</i><br><br><i>You have presented the theory behind the analysis techniques, but limited understanding of these demonstrated</i><br><br><i>Coast down explained well - slight error in equation (deceleration rate 2 should also be multiplied by mass). You should have also explained constant velocity sections. Your discussions indicate a good understanding of aerodynamics and some of the methods applied, but the lack of analysis limits the opportunity to assess your deeper comprehension of the results obtained. (Test car was F3 not F2)</i>                                                                                                                                                                  | 20                                                                                                  | 11            | 55              |
| <b>3. Analysis</b><br>Analysis, evaluation and synthesis; logic, argument and judgement; analytical reflection; organisation of ideas and evidence<br>(e.g. Analysis of data, findings and use of MATH channels)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                     |               |                 |
| 40-49%: Evidence of some logical, analytical thinking and some attempts to synthesise, albeit with some weaknesses.<br>Some evidence to support findings/ views, but evidence not consistently interpreted.<br>Some relevant conclusions and recommendations, where relevant<br><br><i>Some basic analysis of the data obtained, but you could have looked in more detail at secondary interactions between variables</i><br><br><i>Fundamental math channels present and correct. These could be explained in further detail</i><br><br><i>Straight line results analysis not presented, only spreadsheet. You should have discussed these results and trends. You should have overlayed setups for your circuit test analysis so comparisons could be clearer if you are comparing (eg fig 6 and 7). You didn't present some of the graphs required by the brief (drag over the course of the lap, speed versus lat accel, centre of pressure). No handling analysis (you should have looked at understeer)</i> | 40                                                                                                  | 18            | 45              |
| <b>4. Practical Application and Deployment</b><br>Deployment of methods, materials, tools and techniques; application of concepts; formulation of innovative and creative solutions to solve problems.<br>(e.g. Test Plan, Use of Motec i2, conclusions drawn from analysis)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                     |               |                 |
| 50-59%: A good and appropriate application of standard methods, materials, tools and/or techniques.<br>Good appreciation of the context of the application, with some use of examples, where relevant.<br><br><i>Clear test plan with scheduling and allocation of team roles. Some of the graph scales could be improved (fig 6 for instance). Math channels presented are barely readable, but appear to be correct. No evidence you used the setup sheet for the drag coefficient.</i><br><br><i>Basic results presentation with only limited use of the analysis tools available.</i>                                                                                                                                                                                                                                                                                                                                                                                                                         | 20                                                                                                  | 10            | 50              |
| <b>5. Skills for Professional Practice</b><br>Attributes in professional practice: individual and collaborative working; deployment of appropriate media; presentation and organisation.<br>(e.g. Technical report writing and presentation.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                     |               |                 |
| 60-69%: Can communicate well, confidently and consistently in a suitable format.<br>Can work very well as part of a team, with very good contribution to group activities.<br>Work is coherent and fluent and is well structured and organised.<br><br><i>A very good account of the investigation conducted, could be structured a little more professionally in places.</i><br><br><i>Technical report formatting and presentation generally is very good. A couple of minor errors only.</i><br><br><i>Tables should be captioned and numbered. Josh, some good elements, but the depth of analysis is rather superficial. Some of the analysis techniques introduced in class have been missed (potentially you missed these sessions)</i>                                                                                                                                                                                                                                                                    | 10                                                                                                  | 6             | 60              |
| <b>Assignment Mark</b> (Assessment marks are subject to ratification at the Exam Board.<br>These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Late Submission Penalties (tick if appropriate)</b><br>Up to one-week late<br>Over one week late |               |                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 48                                                                                                  |               | %               |