

MARKING CRITERIA AND STUDENT FEEDBACK

MODULE: Advanced Computational Methods CFD

ASSIGNMENT: CFD : Ahmed Body

STUDENT: Xilong Song

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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>Little or no research of context of CFD study. This would have helped critique your results and draw firmer conclusions.</i> <i>Limited range of references cited. A much wider range of relevant research is readily available which could have been used to further support your applied methods and support your critical analysis of results (against other existing studies)</i>	10	3.5	35
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 wind tunnel data)			
40-49%: Evidence of basic knowledge and understanding of the relevant concepts and underlying principles. <i>You show a broad understanding of the CFD process and have been able to create a reasonable model.</i> <i>You should have looked at results and used these to inform your model refinements.</i> <i>Be careful with the difference between finite element and finite volume methods, you are applying the latter. You could have justified your initial domain size and boundary conditions applied. Some good comments regarding mesh quality effects on results and general comments on turbulence models. Mesh strategy is basic and there is limited evidence of the results being used to intelligently develop the simulation method and mesh distribution.</i>	25	11.3	45
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)			
40-49%: Evidence of some logical, analytical thinking and some attempts to synthesise, albeit with some weaknesses. Some evidence to support findings/ views, but evidence not consistently interpreted. Some relevant conclusions and recommendations, where relevant <i>Some analysis conducted of results to assess your model, but for the most part superficial. You could have critically evaluated the results in much more detail, highlighting discrepancies between the simulation and empirical data, reasoning why these may have occurred.</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>When you altered the domain size you have not remeshed and updated the upstream information leading to your solve giving exactly the same results to 4 d.ps. You needed to further investigate this and if you had reviewed the postprocessing you would have recognised that the mesh was unchanged and did not reflect the new domain. It is a shame you have not assessed the mesh independency or the effect of prism layers on the results. You could have also investigated other turbulence modelling options and whether the proposed setup is suitable for similar geometries by applying to the 35 degree slant case.</i>	30	13.5	45
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)			
40-49%: An adequate awareness and mostly appropriate application of well established methods, materials, tools and/or techniques. Basic appreciation of the context of the application. <i>You demonstrate that you can develop a working simulation using the software. Some of the simulation setup could be improved.</i> <i>Basic use of the post processor only. You could have made more use of the visualisation techniques in the post processor to assess and present your results.</i> <i>You have achieved a working model and worked through the process of setting up a simulation. However you have not fully characterised the effects of the modelling decisions of the results produced. Only very basic post processing of results presented for one case.</i>	20	9.5	48
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.)			
40-49%: Can communicate in a suitable format but with some room for improvement. Can work as part of a team, but with limited involvement in group activities. Work lacks coherence in places and could be better structured. <i>A satisfactory report, but structure and content show room for improvement.</i> <i>Only limited evidence that the report is presented as a technical report. Refer to the technical report guidelines to improve your future technical documents.</i> <i>Your report could have been structured with subsections. Section titles should all be numbered - introduction number missing.. Tables and figures should also be numbered and captioned. Some sentences could be structured in a more succinct and technical manner. Be careful to proof read your work as it contains a few typographical errors.</i>	15	6.38	43
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		
	44	%	