

MARKING CRITERIA AND STUDENT FEEDBACK

MODULE: ACDB5007 - Computer Aided Engineering
STUDENT: Elias James

ASSIGNMENT: Report
DATE: 20/05/2026

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	% Awarded
1. Engagement with Literature Skills Use of literature sources in support of your discussions throughout the report. 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>A good range of literature is used throughout the report to support key concepts such as finite element modelling, discretisation error, and boundary condition influence. Sources are applied effectively within the literature review and are also drawn upon in later sections to contextualise modelling decisions. There is also evidence of literature being used to support interpretation of results, particularly when discussing mesh sensitivity and stress behaviour. However, the use of literature remains largely supportive rather than critical. There is limited engagement with sources to challenge, compare or evaluate the findings in detail. Greater integration of literature within the discussion of results would further strengthen the critical depth of the report.</i>	10	6.7	67
2. Knowledge and Understanding Skills Discussion and demonstration of the underlying principles relating to stress/strain calculations and CAE software. Analytical and computational validation could be an effective way of critically appraising these areas. 70-79%: Excellent knowledge and understanding of the main concepts and key theories. Clear awareness of challenges to established views and the limitations of the knowledge base. <i>A strong level of knowledge and understanding is demonstrated across the report. Key CAE principles, including FEM theory, discretisation error, and the role of validation and verification, are clearly explained and applied appropriately to the study. The work shows a good understanding of how modelling decisions—such as mesh density and boundary conditions—affect simulation outputs. In particular, the distinction between global (deformation) and local (stress/strain) responses is well recognised. In some areas, the discussion becomes more descriptive or textbook in nature, rather than fully exploiting the theory to interpret results in depth. Further development of the underlying mechanics behind observed trends would strengthen this section.</i>	30	22.5	75
3. Cognitive and Intellectual Skills Use of iterative design techniques, based on analysis of prior results to inform future designs. Analysis, interpretation, and review of results to determine the structural limitations of components. 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>The report demonstrates good analytical capability, particularly through the structured investigation of mesh refinement and boundary condition effects. The inclusion of a validation study using a cantilever beam is a strong feature and shows an appropriate understanding of verification approaches in CAE. There is effective use of quantitative comparison (e.g. percentage differences in deformation) to support findings, and the discussion shows good awareness of the sensitivity of stress results relative to deformation. However, the level of analysis is not consistently developed to a fully critical level. While trends are clearly identified and explained, there is limited deeper interrogation of the significance of the results, the adequacy of convergence, the implications of discrepancies. Further evaluation and critique of the results would strengthen the intellectual depth of the work.</i>	30	20.4	68
4. Practical Application Skills Use of skills to generate a suitable assembly, with accurate boundary conditions applied. Suitable application of methods to perform structural analysis on components and generate representative results. 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>The practical work is carried out to a good standard, with a clear and well-structured modelling approach. The workflow from geometry creation through to simulation, validation and sensitivity studies is logical and appropriate. The inclusion of a validation model, multiple mesh densities, boundary condition comparisons demonstrates a strong level of engagement with CAE tools and methodologies. The use of quantitative data to compare cases further supports this. There is scope to extend the practical investigation further, for example through additional parameter variation or more advanced modelling approaches, but overall the practical work is well executed.</i>	20	14	70
5. Transferable Skills for Life and Professional Practice Quality and presentation of written report. 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>The report is well structured, with a clear progression from theory through to modelling, validation and analysis. Figures and tables are used effectively to support the discussion, particularly in presenting comparative results. The writing is generally clear and communicates the work effectively, although some sections could be more concise and focused. There are minor issues with repetition and clarity in places, but these do not significantly detract from the overall presentation. Overall, the report demonstrates good communication and organisation skills.</i>	10	7.5	75
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	71 %	