

MARKING CRITERIA AND STUDENT FEEDBACK

MODULE: Material Science ACDA 6061

ASSIGNMENT: Analysis for the prevention/minimisation of material failures

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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	%
1. Engagement with Literature Skills (including reading, referencing, academic conventions and academic honesty)			
70-84%: Engagement with an extensive range of relevant and credible literature. Consistently accurate application of referencing. A very interesting account of the failure of these cartridge shells, particularly in respect to the design, detail and operational characteristics of these components. Good literature review in the form of your bibliography, at the end of your report which was both current and appropriate.	15	10.8	72
2. Knowledge and Understanding Skills Extent of knowledge and understanding of concepts and underlying principles associated with the discipline.			
70-84%: Excellent knowledge and understanding of the basic underlying concepts and principles of the subject. Clear knowledge of the manufacturing process and appropriate material (alpha brass) used for these cartridges. Alpha brass is an established alloy for cartridge shells but it is necessary to process anneal it, for recrystallisation, during the several stages required to deep draw these shells. The elemental additions made to alpha brass are minute, and you dealt with these in detail.	20	14.6	73
3. Cognitive and Intellectual Skills Analysis, evaluation and synthesis; logic, argument and judgement; analytical reflection; organisation of ideas and evidence			
70-84%: Excellent evaluation of the underlying concepts and principles. Can interpret qualitative and quantitative data accurately and with some insight. Excellent ability to devise arguments using evidence and make appropriate and valid judgements. Analysis of your report was evident in your sections on the improvements, although the modification of the design/thickness has little scope as these shells are of a well established design. The residual stresses in cartridge shells can also lead to stress corrosion cracking, particularly in ammoniacal environments, not uncommon with certain explosives.	20	14.8	74
4. Practical Application Skills Deployment of methods, materials, tools and techniques; application of concepts; formulation of innovative and creative solutions to solve problems.			
70-84%: An advanced application of a range of taught, basic methods, materials, tools and/or techniques. The context of the application is well considered, and insightful. Excellent evidence of different approaches to problem-solving in particular contexts and proposes appropriate solutions. A very interesting and appropriate choice for this assignment which was ideally suited to failure analysis. The manufacturing process is strongly aligned to shell hardness and strength but at the expense of ductility and processing restrictions. In other words a compromise is necessary.	30	22.5	75
5. Transferable Skills for Life and Professional Practice Attributes in professional practice: individual and collaborative working; deployment of appropriate media; presentation and organisation.			
70-84%: 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. A very well presented report which was well illustrated throughout with additional graphs and a table for comparison. I was also pleased to see that you concluded your work, and that you adopted the use of bullet points for this section. Perhaps some recommendations or suggestions for further work, but this is a minor point.	15	11.1	74
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	73.8	%