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| Please read the instructions printed at the end of this form. A Unit Recording Sheet must be completed for each candidate and unit. | | | | | | | | | | | |
| Unit Title | Design, evaluation and modelling | | | | Unit Code | R040 | Session | | Year | 2 | 0 |
| Scenario Title | | | | | | | | | | | |
| Centre Name | | | | | | | Centre Number | | | | |
| Candidate Name | | | | | | | Candidate Number | | | | |
| Marking Criteria | | | | | | | Teacher Comments | Mark | Page No. | | |
| Task 1 – Topic Area 1.1: Product Evaluation – Product Analysis | | | | | | | | | | | |
| MB1: 1 - 3 marks | | MB2: 4 - 6 marks | | MB3: 7- 9 marks | | | | | | | |
| Produces a basic product analysis of the key features of products using ACCESS FM. Provides a basic description of the strengths and weaknesses of existing products. Basic use of an engineering matrix. <div style="text-align: right;">[1 2 3]</div> | | Produces an adequate product analysis of the key features of products using ACCESS FM. Provides an adequate description of the strengths and weaknesses of existing products. Appropriate use of an engineering matrix. <div style="text-align: right;">[4 5 6]</div> | | Produces a comprehensive product analysis of the key features of products using ACCESS FM. Provides a comprehensive description of the strengths and weaknesses of existing products. Effective use of an engineering matrix. <div style="text-align: right;">[7 8 9]</div> | | | | | | | |
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| Task 2 – Topic Area 1.2: Product Evaluation – Product Disassembly | | | | | |
| MB1: 1 - 3 marks | MB2: 4 - 6 marks | MB3: 7- 9 marks | | | |
| <p>Limited understanding of potential hazards and safety considerations when using tools and equipment.</p> <p>Produces a limited analysis of the components, materials, production methods, assembly, and manufacturing methods used in an engineered product.</p> <p style="text-align: right;">[1 2 3]</p> | <p>Adequate understanding of potential hazards and safety considerations when using tools and equipment.</p> <p>Produces an adequate analysis of the components, materials, production methods, assembly, and manufacturing methods used in an engineered product.</p> <p style="text-align: right;">[4 5 6]</p> | <p>Clear understanding of potential hazards and safety considerations when using tools and equipment.</p> <p>Produces a comprehensive analysis of the components, materials, production methods, assembly, and manufacturing methods used in an engineered product.</p> <p style="text-align: right;">[7 8 9]</p> | | /9 | |

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| Task 3 – Topic Area 2: Virtual CAD 3D | | | | | |
| MB1: 1 - 4 marks | MB2: 5 - 8 marks | MB3: 9- 12 marks | | | |
| <p>Produces a basic 3D virtual model using CAD.</p> <p>Produces a simple 3D virtual model consisting of a very limited number of components.</p> <p>Demonstration of complex industry-related CAD activities is dependent upon assistance or help from other sources.</p> <p style="text-align: right;">[1 2 3 4]</p> | <p>Produces an adequate 3D virtual model using CAD.</p> <p>Produces an adequate 3D virtual model consisting of some mated components.</p> <p>Demonstration of complex industry-related CAD activities is carried out with some assistance or help from other sources.</p> <p style="text-align: right;">[5 6 7 8]</p> | <p>Produces a comprehensive 3D virtual model using CAD.</p> <p>Produces a complex 3D virtual model consisting of many mated components.</p> <p>Demonstration of complex industry-related CAD activities is carried out independently.</p> <p style="text-align: right;">[9 10 11 12]</p> | | /12 | |

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| Task 4 – Topic Area 2: Physical Modelling – Production Planning | | | | | |
| MB1: 1 - 2 marks | MB2: 3 - 4 marks | MB3: 5- 6 marks | | | |
| A basic description of the planning stages to be used in the manufacturing of the prototype. Shows limited understanding of safety considerations. [1 2] | An adequate description of the planning stages to be used in the manufacturing of the prototype. Shows some understanding of safety considerations. [3 4] | A comprehensive description of the planning stages to be used in the manufacturing of the prototype. Shows a detailed understanding of safety considerations. [5 6] | | | |
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| Task 5 – Topic Area 2: Physical Modelling – Prototype Production | | | | | |
| MB1: 1 - 6 marks | MB2: 7 - 12 marks | MB3: 13- 18 marks | | | |
| Dependent upon prompts to use PPE equipment when working with tools, machines, materials, chemicals, finishes and solvents. Use tools and processes with limited effectiveness to produce and assemble an outcome that partly meets the production plan. The prototype will be incomplete. Produces a limited record of the key stages of making the prototype. [1 2 3 4 5 6] | Requires some prompting to use appropriate PPE when working with tools, machines, materials, chemicals, finishes and solvents. Use tools and processes with some effectiveness to produce and assemble an outcome that mostly meets the production plan. The prototype will be mostly complete. Produces an adequate record of most of the key stages of making the prototype. [7 8 9 10 11 12] | Independently uses appropriate PPE when working with tools, machines, materials, chemicals, finishes and solvents. Use tools and processes effectively to produce and assemble an outcome that is of a high quality, accurate and fully meets the production plan. The prototype will be fully complete. Produces a detailed and accurate record of the key stages of making the prototype. [13 14 15 16 17 18] | | | |
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| Task 6 – Topic Area 2: Physical Modelling – Evaluation of a prototype | | | | | |
| MB1: 1 - 2 marks | MB2: 3 - 4 marks | MB3: 5- 6 marks | | | |
| Produces a basic evaluation of the prototype outcome against the product specification. Provides limited potential improvements. No justification is provided. [1 2] | Produces an adequate evaluation of the prototype outcome against the product specification. Provides some potential improvements, with justification. [3 4] | Produces a comprehensive evaluation of the prototype outcome against the product specification. Provides detailed potential improvements with justification. [5 6] | | | |
| Total | | | | /60 | |

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| Please tick to confirm this work has been standardised internally | <input type="checkbox"/> |
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Please note: This form may be updated on an annual basis. The current version of this form will be available on the OCR website (www.ocr.org.uk).

A Centre Authentication form (CCS160) **must** be completed for each submission to the moderator. This **must** be held in your centre to be available on request at centre inspection.

Guidance on Completion of this Form

- 1 One form should be used for every candidate.
- 2 Please make sure that all parts of the form are completed.
- 3 Please enter specific page numbers where evidence can be found in the portfolio, and where possible, indicate to which part of the text in the mark band the evidence relates.
- 4 Circle/highlight the mark awarded for each strand of the marking criteria in the appropriate box.
- 5 Enter the circled/highlighted mark in the 'Mark' column.
- 6 Add the marks for the strands together to give a total out of 60. Enter this total in the relevant box.
- 7 For Paper-based submissions, one of these sheets, suitably completed, should be attached to the assessed work of each candidate.
- 8 For Electronic Internal submissions, prior to submitting 'candidate evidence' to OCR (via the Repository/SfA or via a USB), the Centre should add a separate folder containing the Unit Recording Sheets.