



Oxford Cambridge and RSA

# OCR Level 1/Level 2 Cambridge National in Engineering

## Manufacture

### Qualification J823

### Unit R016

### Unit Recording Sheet

Please read the instructions printed at the end of this form. A Unit Recording Sheet must be completed for each candidate and unit.											
<b>Unit Title</b>	<b>Manufacturing in quantity</b>				<b>Unit Code</b>	<b>R016</b>	<b>Session</b>		<b>Year</b>	<b>2</b>	<b>0</b>
<b>Scenario Title</b>											
<b>Centre Name</b>							<b>Centre Number</b>				
<b>Candidate Name</b>							<b>Candidate Number</b>				
<b>Marking Criteria</b>							<b>Teacher Comments</b>	<b>Mark</b>	<b>Page No.</b>		
<b>Task 1 – Topic Area 1.1: Manufacture and use templates</b>											
<b>MB1: 1 - 2 marks</b>		<b>MB2: 3 - 4 marks</b>		<b>MB3: 5- 6 marks</b>							
<p><b>Basic</b> application of understanding and skills to partly achieve the intended result, but it would not be useable without further input/work.</p> <p><b>Dependent</b> upon assistance or help from other sources to measure, mark out and cut out templates for the parts.</p> <p style="text-align: right;"><b>[1 2]</b></p>		<p><b>Adequate</b> application of understanding and skills to produce the intended result in a way that would be useable for its purpose.</p> <p>Templates are measured, marked out and cut out with <b>some</b> assistance or help from other sources.</p> <p style="text-align: right;"><b>[3 4]</b></p>		<p><b>Effectively</b> applies understanding and skills to successfully produce the intended result in a way that would be fit-for-purpose.</p> <p>Able to measure, mark out and cut out templates for the parts <b>independently</b>.</p> <p style="text-align: right;"><b>[5 6]</b></p>							
								/6			

Marking Criteria			Teacher Comments	Mark	Page No.
<b>Task 2 – Topic Areas 1.2, 1.3 and 1.4: Determine the sequence of operations, appropriate operating parameters for CNC equipment and produce standard operating procedures</b>					
<b>MB1: 1 - 5 marks</b>	<b>MB2: 6 - 10 marks</b>	<b>MB3: 11 - 14 marks</b>			
<p>The SOP includes <b>basic</b> information, however additional content would be required.</p> <p><b>Few</b> of the operations required are identified but additions may be needed and the sequence may need adjustment to be workable.</p> <p><b>Few</b> of the operating parameters for the CNC equipment are identified, however would not provide a satisfactory outcome without further input/work.</p> <p style="text-align: right;"><b>[1 2 3 4 5]</b></p>	<p>The SOP includes <b>adequate</b> information to make the product.</p> <p><b>Some</b> of the operations required are identified. The sequence of operations may need minor adjustment to be a workable sequence.</p> <p><b>Some</b> of the operating parameters for the CNC equipment are identified and should provide a satisfactory outcome with minimal adjustment.</p> <p style="text-align: right;"><b>[6 7 8 9 10]</b></p>	<p>The SOP produced includes <b>all</b> the information required to manufacture the product.</p> <p><b>All</b> of the operations required are identified in a logical and workable sequence.</p> <p><b>All</b> of the operating parameters for the CNC equipment are identified and appropriate and should provide a satisfactory outcome without adjustment.</p> <p style="text-align: right;"><b>[11 12 13 14]</b></p>			
			<b>/14</b>		

Marking Criteria			Teacher Comments	Mark	Page No.
<b>Task 3 – Topic Areas 2.1 and 2.2: Use CAD software and program CNC machine operations</b>					
<b>MB1: 1 - 5 marks</b>	<b>MB2: 6 - 10 marks</b>	<b>MB3: 11 - 14 marks</b>			
<p>Produces <b>basic</b> CAD drawings that include some relevant information however some additional features would be required to create instructions for the CNC operation.</p> <p>Carries out on-screen simulation of <b>few</b> aspects of the CNC operation.</p> <p><b>Limited</b> application of understanding and skills to partly achieve the intended result, but information is not exported from the CAD software to the CNC equipment.</p> <p><b>Dependent</b> upon assistance or help from other sources to use CAD software and program CNC machine operations.</p> <p style="text-align: right;"><b>[1 2 3 4 5]</b></p>	<p>Produces <b>adequate</b> CAD drawings that include most of the information required to create instructions for the CNC operation.</p> <p>Carries out on-screen simulation of <b>most</b> aspects of the CNC operation.</p> <p>Understanding and skills are used to <b>partially</b> export the information from CAD software to CNC equipment that does not fully meet the requirements.</p> <p><b>Some</b> assistance or help from other sources is required to use CAD software and program CNC machine operations.</p> <p style="text-align: right;"><b>[6 7 8 9 10]</b></p>	<p>Produces <b>comprehensive</b> CAD drawings that are accurate and include all of the information required to create instructions for the CNC operation.</p> <p>Carries out an <b>effective</b> on-screen simulation of the CNC operation, making adjustments if required.</p> <p>Understanding and skills are used to <b>fully</b> export the information from CAD software to CNC equipment in a way that would be fit-for-purpose.</p> <p>Able to use CAD software and program CNC machine operations <b>independently</b>.</p> <p style="text-align: right;"><b>[11 12 13 14]</b></p>		<b>/14</b>	

Marking Criteria			Teacher Comments	Mark	Page No.
<b>Task 4 – Topic Areas 3.1 and 3.2: Setting up and operating CNC equipment</b>					
<b>MB1: 1 - 5 marks</b>	<b>MB2: 6 - 10 marks</b>	<b>MB3: 11 - 14 marks</b>			
<p><b>Dependent</b> upon reminders of safety requirements in order to work safely.</p> <p><b>Basic</b> application of understanding and skills to partly achieve the intended result, but it would not be useable without further input/work.</p> <p><b>Dependent</b> upon assistance or help from other sources to set up and operate CNC equipment.</p> <p style="text-align: right;">[1 2 3 4 5]</p>	<p>Worked safely with <b>some</b> reminders of safety requirements.</p> <p><b>Adequate</b> application of understanding and skills to produce the intended result in a way that would be useable.</p> <p><b>Some</b> assistance or help from other sources is required to set up and operate CNC equipment.</p> <p style="text-align: right;">[6 7 8 9 10]</p>	<p>Worked safely at <b>all</b> times without additional instruction.</p> <p><b>Effectively</b> applies understanding and skills to successfully produce the intended result in a way that would be fully fit-for-purpose.</p> <p>Able to set up and operate CNC equipment <b>independently</b>.</p> <p style="text-align: right;">[11 12 13 14]</p>			
			/14		

Marking Criteria			Teacher Comments	Mark	Page No.
<b>Task 5 – Topic Area 3.3: Apply quality control methods</b>					
<b>MB1: 1 - 4 marks</b>	<b>MB2: 5 - 8 marks</b>	<b>MB3: 9 - 12 marks</b>			
<p>Measured <b>few</b> of the features on the drawing although some methods may have not been the most appropriate.</p> <p><b>Basic</b> application of understanding and skills to partly achieve the intended result, but it would not be useable without further input/work.</p> <p><b>Dependent</b> upon assistance or help from other sources to apply quality control methods.</p> <p style="text-align: right;"><b>[1 2 3 4]</b></p>	<p>Measured <b>some</b> of the features on the drawing using appropriate methods.</p> <p><b>Adequate</b> application of understanding and skills to produce the intended result in a way that would be useable.</p> <p><b>Some</b> assistance or help from other sources is required to apply quality control methods.</p> <p style="text-align: right;"><b>[5 6 7 8]</b></p>	<p>Provided accurate and repeatable measurements of <b>all</b> of the features on the drawing using appropriate methods.</p> <p><b>Effectively</b> applies understanding and skills to successfully produce the intended result in a way that would be fully fit-for-purpose.</p> <p>Able to apply quality control methods <b>independently</b>.</p> <p style="text-align: right;"><b>[9 10 11 12]</b></p>		/12	
<b>Total</b>				<b>/60</b>	

Please tick to confirm this work has been standardised internally	
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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](http://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.