OCR
RECOGNISING ACHIEVEMENT

Unit 19: CAD/CAM

Candidate: **Assessor:** **Date:**

AO	Pass	Merit	Distinction
AO1 Use CAD to model in 3D from design ideas	Candidates use **basic** design specifications to produce simple parts and assemblies and be able to make some modifications.	Candidates use design specifications to produce parts and assemblies using a range of 3D features and be able to make **some** modifications.	Candidates use **detailed** design specifications to produce parts and assemblies using a wide range of 3D features and be able to make **appropriate** modifications.
			P M D
AO2 Use CAD to produce a sheet metal component	Candidates produce a **simple** sheet metal component showing fold lines and important dimensions.	Candidates produce a sheet metal component showing **most** features including a flat pattern correctly dimensioned.	Candidates produce a more **complex** sheet metal component showing **most** features including a flat pattern correctly dimensioned and **labelled**.
			P M D
AO3 Use CAD to produce presentation drawings	Candidates create engineering drawings with views in correct positions but with **some detail missing** or **incorrect**. Dimensions are shown but **some may be incorrectly positioned** or **not according to BS**. Cross-sections **may be missing** or **inappropriate** planes used. Parts lists **may be incomplete**. Presentation images communicate **most** of the essential details with appropriate backgrounds and lighting effects.	Candidates create engineering drawings with views in correct positions with **most detail correct**. Dimensions and tolerance information are **shown correctly positioned** and **mainly according to BS**. Cross-sections used **may not** be the most appropriate Parts lists are **complete**. Presentation images communicate **most** of the essential details with appropriate backgrounds or room settings, with lighting and shading effects added. Additional graphics **may be** added to surfaces.	Candidates create **accurate** engineering drawings of complex models. Dimensions and tolerance information are **shown correctly positioned** and **according to BS**. Cross-sections are **accurate** and parts lists **complete**. Presentation images communicate **all** of the essential details with appropriate backgrounds and room settings, with lighting and shading effects added. Additional graphics **are added** to surfaces.
			P M D

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AO4 Use CAD to test and simulate 3D models	Candidates provide a number of images showing the use of visual checks of models and the motion of parts. **Some** properties are allocated to materials to find mass and volume. The results of FEA are presented visually, **but not explained**.	Candidates provide a number of images showing the use of visual and interference checks of models. The motion of parts is illustrated in a video clip. Properties of materials **will be** allocated to solve simple problems. The results of FEA are presented visually with **some explanation** given.	Candidates show that they **can use** visual and interference checks on models and make **appropriate** modifications. The motion of arts is simulated and shown using video clips. The results of FEA are presented visually with a **full explanation** given.
			P M D
AO5 Explain the processes advantages, and control of CAM	Candidates provide a **brief** account of the use of CAM in industry, with **some** of the advantages identified.	Candidates provide a **detailed** account of the use of CAM in industry with **many** of the advantages identified.	Candidates provide a **comprehensive** account of the use of CAM in industry, identifying the **main** advantages of the different systems.
			P M D
AO6 Explain how 3D data is obtained and input to CAD software	Candidates provide a **brief** account of the use of reverse engineering methods.	Candidates provide a **detailed** account of the use of reverse engineering methods and how the data can be **used**.	Candidates provide a **comprehensive** account of the use of reverse engineering methods and how the data can be **processed** in CAD software.
			P M D

AO1	AO2	AO3	AO4	AO5	AO6

Overall: