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|  | **To achieve a pass the learner must evidence that they can:** | **In addition to the pass criteria, to achieve a merit the evidence must show the learner can:** | **In addition to fulfilling the pass and merit criteria, to achieve a distinction the evidence must show that the learner can:** | **Comments** |
| PO1 : Identify customer requirements | P1: Describe the end user of the item being designed. |  |  |  |
|  | P2 : Produce a CDB to explore design problems, requirements and design constraints for a specific customer need. | M1 : Explore additional  Stakeholder requirements that may influence the CDB. |  |  |
|  | P3 : Produce a PDS that addresses a design problem that covers all of the key requirements using relevant terminology that demonstrates consideration of technical feasibility and costs. | M2 : Analyse similar products and possible manufacturing processes to inform the design specification. |  |  |
| PO2 : Initial ideas and  concept generation | P4 : Produce three concepts  that address the design problem and meet a design brief, supported  by high quality sketches and relevant technical information. |  |  |  |
|  | P5 : Identify relevant  health and safety, environmental  and legislative considerations for the design |  |  |  |
|  | P6 : Produce a SWOT analysis of initial ideas to solve an engineering  design problem. | M3 : Select and justify the  final design concept. |  |  |
|  | P7 : Identify final technical  information required for the design (eg physical dimensions, materials,  processes etc). | M4 : Analyse technical and aesthetic design considerations to inform product design. | D1 : Assess design proposal for further development and modification for mass or batch  production. |  |
| PO3  Produce detailed  engineering designs | P8 : Produce a CAD drawing  that meets all elements of the CDB and PDS and complies with all  relevant regulations, standards directives or codes of practice. | M5 : Justify the selection  of manufacturing processes and  the choice of the components and  materials used for the design. | D2 : Design demonstrates  mechanical functionality  and integration of electrical components.  **Circuit Requirements** |  |
|  | P9 : Present design using  appropriate techniques to different audiences with sufficient information to allow the customer(s) to assess it. |  |  |  |
|  | P10 : Produce and maintain  design documentation.  **Contents Page** |  |  |  |
| PO4  Manage engineering  designs | P11 : Produce a test plan that  reflects all aspects of the design, highlighting where the design  problem has been solved.  **Evaluation** | M6 : Identify design adjustments to reflect testing and potential for  modification for mass or batch production  **Further Development – Refining so it is easy to make** | D3 : Evaluate the importance  of testing in engineering design. |  |
|  | P12 : Carry out relevant design tests.  **Sustainability Report** |  |  |  |
|  | P13 : Produce a technical  report including an evaluation of the end to end design and  problem-solving process.  **Complete** |  |  |  |

**Monday, 1**

Peer Review : 1st April 2020

Hand in : 3RD April