**BTEC Assignment Brief**

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| **Qualification** | Pearson BTEC Level 3 National Diploma in Engineering Pearson BTEC Level 3 National Extended Diploma in Engineering |
| **Unit number and title** | **Unit 10: Computer Aided Design in Engineering** |
| **Learning aim(s)** (For NQF only) | **B:** Develop two-dimensional detailed computer-aided drawings of an engineered product that can be used as part of other engineering processes |
| **Assignment title** | Producing 2D Drawings  |
| **Assessor** |  |
| **Issue date** |  |
| **Hand in deadline**  |  |
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| **Vocational Scenario or Context** | You are a second year engineering apprentice in a small to medium manufacturing company. Your supervisor has asked you to produce a portfolio relating to a specific assembly that the company manufactures. You will be given the 3D models for the individual parts and the assembled system. You are expected to produce the 2D drawings relating to each part and to produce the assembled model having added some refinements to improve the drawings you were given to produce yours from. |
| **Task 1** | **2D Drawings**You are required to produce properly drawn working drawings for at least eight components and an assembly showing each of the components properly orientated, each of the drawings must have been properly drawn to BS8888, and to make refinements where you can justify them. The drawings must have been started using a template created by the learner that will produce professional looking drawings that have suitable boarders and title blocks,The drawings must be dimensioned, **including tolerances** to convey suitable information to a third party so that they can be accurately manufactured. The drawings must have utilised layers that contain items with the same attribute grouped together which will then contribute to the master layer.Together the drawings must contain **at least one section view,** a general arrangement and component drawings.Any modifications that you can justify must be given in a “Changes to design” document. |
| **Checklist of evidence required**  | You are expected to produce a portfolio which includes the following: 1. Full working 2D orthogonal drawings for eight components together with an assembly drawing.
2. CAD files for each of the drawings and the assembly. The CAD files must evidence the correct use of layers and that a template has been created and utilised by the learner.
3. A “Changes to design” document that identifies and justifies any modification that you have made.
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| **Criteria covered by this task:** |
| Unit/Criteria reference | To achieve the criteria you must show that you are able to: |
| 10/B.D2 | Refine, using accurate layers from a master layer, drawings to an international standard of an accurate and correctly orientated 2D assembled product that is fit for purpose.  |
| 10/B.M2 | Produce, using accurate layers, drawings that mainly meet an international standard of an assembled product containing at least eight accurate and well orientated components.  |
| 10/B.P3 | Create, using layers, drawings of at least six 2D components from an assembled product.  |
| 10/B.P4 | Create a 2D assembly drawing containing at least six components, with at least two components well orientated.  |
| **Sources of information to support you with this Assignment** | TextbooksTickoo, S., SolidWorks 2016: A Tutorial Approach, CADCIM, ISBM 978-1-942689-19-1, 2016.Tutorial Books, Autodesk AutoCAD 2016 and Inventor 2016, AutoDesk. ISBM 9781519466631, 2016.Toogood, R., Pro/ENGINEER Wildfire 5.5 Tutorial and Multimedia CD, Perfect Paperback, ISBMThe internet will be a good resource generally for this subject ranging from data available from suppliers to specific information available from educational organisations. Care must be exercised in respect of the suitability. **Further useful resources may be found at** <http://qualifications.pearson.com/en/support/published-resources.html#step1> |
| **Other assessment materials attached to this Assignment Brief** | *Basic drawings of the parts to be drafted*  |