**BTEC Assignment Brief**

|  |  |  |
| --- | --- | --- |
| **Qualification** |

|  |
| --- |
| Pearson BTEC Level 3 National Diploma in Engineering  |

 |
| **Unit number and title** |

|  |
| --- |
| **Unit 2: Delivery of Engineering Processes Safely as a Team**  |

 |
| **Learning aim(s)** (For NQF only) |

|  |
| --- |
| **A:** Examine common engineering processes to create products or deliver services safely and effectively as a team.  |

 |
| **Assignment title** |

|  |
| --- |
| Engineering processes and human factors  |

 |
| **Assessor** | J Kupper |
| **Issue date** |  |
| **Hand in deadline**  |  |
|  |
|  |
| **Vocational Scenario or Context** |

|  |
| --- |
| You are working as a final year apprentice in a small engineering company. You have been using some engineering processes to manufacture small components as part of your team; your manager is pleased with your work and has decided that you should be given some more responsibility. He wants you to look at whether the company is using the most appropriate engineering processes when manufacturing small components.Your manager has asked you to examine an engineered product to report back on the engineering processes that can be used to make it, including health and safety factors, and how human factors could affect the performance of these processes. The report will impact upon company investment decisions in the future. |

 |
|  |
| **Task 1** |

|  |  |
| --- | --- |
| You are going to evaluate the effectiveness of engineering processes and how human factors affect them. **To do this:** Your tutor will provide you with three possible items to research that each use a range of engineering processes. You need to: • Research the processes used including relevant health and safety factors and legislation/regulations; and • Research how these engineering processes can be affected by human factors (individual and team).

|  |
| --- |
| **You then need to:** Produce a report that evaluates the effectiveness of the engineering processes used to manufacture the chosen product and explain / evaluate how human factors affect the performance of the engineering processes. Your report should include: • Information on the advantages and limitations of the engineering processes used compared with the advantages and limitations of using other possible processes, which should include justifications as to which processes are most effective, by referring to the specific requirements of the chosen product – as part of this, you must provide thorough details about how the engineering processes work/operate, including health and safety factors and legislation and regulations that apply; and • Evidence that you have a strong awareness of a range of human factors, and can judge how they impact on the performance of the engineering processes from both an individual and team perspective.  |

 |

 |
| **Checklist of evidence required**  |

|  |
| --- |
| A report, prepared as an individual, detailing engineering processes and the impact that human factors can have on their performance, using a case study context based on a given engineered product(s) or a given engineering service(s). |

 |
| **Criteria covered by this task:** |
| Unit/Criteria reference | To achieve the criteria you must show that you are able to: |
| 2/A.D1 |

|  |
| --- |
| Evaluate, using high quality written language, the effectiveness of using different engineering processes to manufacture a product or to deliver a service and how human factors, as an individual and a team, affect the performance of engineering processes.  |

 |
| 2/A.M1 |

|  |
| --- |
| Analyse why three engineering processes are used to manufacture a product or to deliver a service and how human factors, as an individual and a team, affects the performance of engineering processes.  |

 |
| 2/A.P1 |

|  |
| --- |
| Explain how three engineering processes are used safelywhen manufacturing a given product or when delivering a given service.  |

 |
| 2/A.P2 |

|  |
| --- |
| Explain how human factors, as an individual or a team, affect the performance of engineering processes.  |

 |
|  |  |
| **Sources of information to support you with this Assignment** |

|  |
| --- |
| Textbooks Pearson textbook specific to new BTEC Nationals in Engineering Schrader, G. et al. (2000) *Manufacturing Processes and Materials,* 4th Edition, Society of Manufacturing Engineers, 0872635171. Mikell P. Groover (2010) Fundamentals of Modern Manufacturing, 5th Edition, John Wiley & Son, Inc. Serope Kalpakjian, Steven Schmid (2007) Manufacturing Processes for Engineering Materials, 5th Edition, Prentice Hall  |
| Websites https://archive.org/stream/IntroductionToBasicManufacturingProcessAndWorkshopTechnology/Introduction%20to%20basic%20manufacturing%20process%20and%20workshop%20technology%20%281%29#pag e/n0/mode/2up

|  |
| --- |
| <http://www.efunda.com/processes/processes_home/process.cfm> [www.peo.on.ca/index.php/ci\_id/19394/la\_id/1.htm](http://www.peo.on.ca/index.php/ci_id/19394/la_id/1.htm)<http://www.kupper.org.uk/engineering/b-tec-content/unit-2-2016-depst/>  |

 |

 |
| **Other assessment materials attached to this Assignment Brief** | *eg, work sheets, risk assessments, case study* |

**Item No. 1**



**Item No. 2**



**Item No. 3**

