

KS5 Curriculum Sequencing – Homework/Prep Time Work and Private Study Work: *Insert course name*

Engineering Nationals - Extended Certificate

Homework, prep time work and private study work policy

All homework, prep time work and private study work in **Engineering** is set on Edulink homework with a clear set date, due date and time allocation.

Different Units will be taught by different teachers, so there may/ will be multiple homeworks set for engineering at the same time.

Unit 02 - Mr Farmer & Mrs Lucas

| Unit 02 | | | |
|-----------------------------------|------------------------|--------------|-------------------------------------------------------------------------------------|
| Learning Aim | Taught Content | | IL |
| A1 - Common engineering Processes | Preparation Processes | Page 76 - 77 | Research & report into Engineering Processes and how they are carried out - Comp A |
| | British Standards | Page 76 - 77 | |
| | Products as Items | Page 78 - 83 | |
| | Servicing as a benefit | Page 78 - 83 | |
| | Fitting | Page 78 - 83 | |
| | Machining | Page 78 - 83 | |
| | Fabrication | Page 78 - 83 | |
| | electrical | Page 78 - 83 | |
| | Forming | Page 78 - 83 | |
| | Disassembly | Page 78 - 83 | |
| | Inspection | Page 78 - 83 | |
| | Servicing | Page 78 - 83 | |
| | Installation | Page 78 - 83 | |
| A2 - H&S | HSE regulations | Page 84 - 86 | Add to report, Health and safety factors for each of the processes including Bs4163 |
| | RIDDOR | Page 84 - 86 | |
| | PPE | Page 84 - 86 | |

| | | | |
|--------------------------|--------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------|
| | COSHH | Page 84 - 86 | Standards |
| | MHOR | Page 84 - 86 | |
| A3 - Human Factors | Productivity | Page 87 - 88 | Add to report, Human Factors for each process and how that will effect your team |
| | Professionalism, Ethics, Behaviour & Limitations | Page 87 - 88 | |
| | ASSIGNMENT TIME | <Assignment Completion Comp 2 Part A > | |
| | ASSIGNMENT TIME | <Assignment Completion Comp 2 Part A > | |
| | ASSIGNMENT TIME | <Assignment Completion Comp 2 Part A > | |
| B1 - Engineering Drawing | Orthographic Projections | Page 89 - 96 | Engineering Drawings - Lamp parts in Bs8888 Standards |
| | Orthographic Projections | Page 89 - 96 | |
| | Orthographic Projections | Page 89 - 96 | |
| | Bs8888 Standards | Page 89 - 96 | |
| | Bs8888 Standards | Page 89 - 96 | |
| B2 - CAD | Coordinates, templates and layers | Page 89 - 96 | Rendering & CAD Drawings of Lamp Parts in Bs8888 Standards |
| | Crosshatching & other rendering techniques | Page 89 - 96 | |
| | ASSIGNMENT TIME | <Assignment Completion Comp 2 Part B > | |
| | ASSIGNMENT TIME | <Assignment Completion Comp 2 Part B > | |

| | | | |
|-----------------------------------|-----------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------|
| | ASSIGNMENT TIME | <Assignment Completion Comp 2 Part B > | |
| | ASSIGNMENT TIME | <Assignment Completion Comp 2 Part B > | |
| C1 - Effective Teamwork | Feedback and Logging | Page 97 | Production Planning for workshop (Gantt Charts and Manufacturing Sequence Plans) |
| | Planning & Motivation | Page 98 - 100 | |
| | Working with others and the environment | Page 98 - 100 | |
| C2 - Team Set up and organisation | Setup, Strengths and weaknesses | Page 98 - 100 | |
| | Control Measures and PPE | Page 100 - 101 | |
| C3 - H&S | Risk Assessments | Page 100 - 101 | |
| | Risk Assessments | <Risk Assessment Completion > | |
| | Risk Assessments | <Risk Assessment Completion > | |
| C4 - Preparation of activities | Batch services | Page 103 - 104 | QA Manufacturing processes and sequencing |
| | Sequence of productions | Page 103 - 104 | |
| C5 - Manufacturing processes | Marking out | <Workshop Logs> | engineering processing logs - Pictures and annotations of processes, set ups, PPE - EVERYTHING |
| | Manual Processes | <Workshop Logs> | |
| | Machining Processes | <Workshop Logs> | |
| | Assembly Processes | <Workshop Logs> | |
| | Measuring & Testing processes | <Workshop Logs> | |

| | | |
|-----------------|----------------------------------------------|--|
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |
| ASSIGNMENT TIME | <Assignment Completion Comp 2 Part C > | |

Unit 03 - Mr Symeou

| Unit 03 | | |
|------------------------------------|-------------------------------------------|----------------|
| Learning Aim | Taught Content | IL |
| A1 - Design Triggers | Market Pull/ Technology Push | Page 112 |
| | demand and profitability | Page 113 - 114 |
| | Innovation and research | Page 114 - 115 |
| | Performance and sustainability | Page 115 - 116 |
| A2 - Design challenges | Energy Wastage | Page 116 - 117 |
| | Reductions of mass and volume | Page 116 - 117 |
| | Energy Recovery | Page 117 |
| A3 - Equipment Level | Interface, integration and specifications | Page 118 - 119 |
| A4 - Material Properties | Mechanical and Physical | Page 120 - 125 |
| | Thermal and Magnetic | Page 120 - 125 |
| | Lubrication | Page 120 - 125 |
| A5 - Mechanical Power Transmission | Linkages, Motion and power | Page 126 - 128 |
| A6 - Manufacturing Processes | Metal | Page 129 - 133 |
| | Polymers | Page 129 - 133 |
| | Ceramics | Page 129 - 133 |
| | Composites | Page 129 - 133 |
| | Processing | Page 129 - 133 |
| | Scales of manufacture | Page 129 - 133 |

| | | |
|------------------------------------|------------------------------|----------------|
| B1 - Design | Designing for a Customer | Page 134 - 137 |
| | Service Requirements | Page 134 - 138 |
| | PDS | Page 134 - 139 |
| B2 - Constraints and Opportunities | Legislation | Page 137 - 139 |
| | Environmental | Page 137 - 139 |
| | H&S | Page 137 - 139 |
| B3 - Market Analysis | USP | Page 140 |
| | Benefits and obsolescence | Page 140 |
| B4 - Performance Analysis | Form and function | Page 140 - 143 |
| | Technical considerations | Page 140 - 143 |
| | Materials | Page 140 - 143 |
| | Environmental sustainability | Page 140 - 143 |
| | Wear and Failure | Page 140 - 143 |
| B5 - Manufacture Analysis | Processes and Requirements | Page 143 - 145 |
| | Quality Indicators | Page 143 - 145 |
| C1 - Design Proposals | Technical Design | Page 146 - 149 |
| | Idea Generation | Page 146 - 149 |
| | Fit for purpose | Page 146 - 149 |
| | Developing Designs | Page 146 - 149 |
| | Information Sources | Page 146 - 149 |
| C2 - Communication | Communication Designs | Page 149 - 150 |
| | Freehand | Page 149 - 150 |
| | Graphical | Page 149 - 150 |
| | Written skills | Page 149 - 150 |

| | | |
|------------------------------|----------------------------|----------------|
| | Documentation | Page 149 - 150 |
| C3 - Iterative Process | Cycle processes | Page 151 |
| | Cycle processes | Page 151 |
| D1 - Statistical Methodology | Measurement | Page 152 - 160 |
| | Data Handling | Page 152 - 160 |
| D2 - Validation | Against Specification | Page 161 |
| | Matrix | Page 161 |
| | Benefits and opportunities | Page 161 |
| | design for Manufacture | Page 161 |
| | Prep Sheet finalisation | |