**Sample Assessment Outline**

Engineering Studies

General Year 12

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Sample assessment outline

Engineering Studies – General Year 12

Unit 3 and Unit 4

| **Assessment type and weighting** | **Assessment task weighting** | **Duration** | **Assessment task** |
| --- | --- | --- | --- |
| Design25% | 3**%** | Semester 1Week 1–2 | Introduction to unit and assessment requirements **Task 1:** **Design project one** Using the Engineering design process* develop a design folio
* develop a design brief/proposal
* identify and assess existing solutions or similar products
 |
| 8**%** | Semester 1Week 6–7 | **Task 4:** **Devise a solution for project one*** investigate materials and components within selected specialty field relevant to the design brief

Specialty fields: Mechanical materials, Mechatronics components * apply theory from specialty fields relative to project one
* develop annotated pictorial drawings of ideas
* devise annotated, orthographic concept drawings, either CAD or hand drawn, to develop ideas towards a final drawn proposal
* calculations to estimate design function
 |
| 2% | Semester 1Week 15 | **Task 7: Evaluation of completed project one*** written report on, and photographs of, completed project
 |
| 3**%** | Semester 2Week 1–2 | **Task 8: Design project two*** develop a design folio
* apply design process to determine design brief and investigate and develop ideas
* investigate materials and components
* research materials and components suitable for the development of a solution
 |
| 7**%** | Semester 2Week 5–6 | **Task 11: Devise a solution for project two** * apply theory from specialty fields
* through annotated pictorial drawings of ideas to a final drawn proposal
* annotated orthographic concept drawings, either CAD or hand drawn
* calculations to estimate design function
 |
| 2% | Semester 2Week 14–15 | **Task 14: Evaluation of completed project two*** evaluate completed project two; written report on, and photographs of, completed project
 |
| Production50% | 5% | Semester 1Week 8–9 | **Task 5: Production plan for project one** * working drawings – detailed orthogonal drawings
* lists of materials, parts and components, costing
* develop production plan on a timeline
 |
| 20**%** | Semester 1Week 10–14 | **Task 6:** **Production of proposed project one*** construct and test solution (prototype or working model) using appropriate tools, machines and equipment, and following safe work practices
* record progress in the design folio
 |
| 5% | Semester 2Week 7–8 | **Task 12: Production plan for project two*** working drawings – detailed orthogonal drawings
* lists of materials, parts and components
* develop production plan on a timeline
 |
| 20% | Semester 2Week 9–14 | **Task 13:** **Production of proposed project two*** construct and test solution (prototype or working model) using appropriate tools, machines and equipment, and following safe work practices
* record progress in the project folio
 |
| Response10% | 2% | Semester 1Week 3 | **Engineering in society** – relationships between energy, power and work, and forms of energy**Task 2:** **Investigate forms of energy*** research forms of energy
* determine form of energy suitable for the project
 |
| 3% | Semester 1Week 4–5 | **Task 3 Part A: Mechanical: Research materials suitable for the development of a solution** **Mechanical –** materials* processes in relation to steels
* stress, strain, Young’s modulus, pressure, equilibrium and moments
* machines, mechanical advantage and velocity

**OR****Task 3 Part B: Mechatronics: Research materials and electronic/electrical components suitable for development of a solution****Mechatronics** – components, laws and principles* general characteristics of components and the circuit symbols
* applications of laws and principles
 |
| 3% | Semester 2Weeks 3–4 | **Task 9: Investigate physical properties of materials and fitness for purpose** * research physical properties of materials
* selection of materials i.e. fitness for purpose
 |
| 2% | Semester 2Week 3–4 | **Task 10: Research forms of obsolescence*** define and compare forms of obsolescence as per Unit 4 of the syllabus
* report on the advantages and disadvantages for society, business and the environment, of forms of obsolescence
 |
| Externally set task | 15% | Semester 1Week 13 | All students enrolled in the Engineering Studies General Year 12 course will complete the externally set task developed by the Authority. Schools are required to administer this task in Term 2 at a time prescribed by the Authority. |
|  | **100%** |  |  |