**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** |
| --- | --- | --- | --- |
| Design  25% | 3**%** | Semester 1  Week 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 1  Week 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 1  Week 15 | **Task 7: Evaluation of completed project one**   * written report on, and photographs of, completed project |
| 3**%** | Semester 2  Week 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 2  Week 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 2  Week 14–15 | **Task 14: Evaluation of completed project two**   * evaluate completed project two; written report on, and photographs of, completed project |
| Production  50% | 5% | Semester 1  Week 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 1  Week 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 2  Week 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 2  Week 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 |
| Response  10% | 2% | Semester 1  Week 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 1  Week 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 2  Weeks 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 2  Week 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 1  Week 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%** |  |  |