**Sample Assessment Tasks**

Engineering Studies

General Year 11

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Sample assessment task

Engineering Studies – General Year 11

Task 2 Part B — Unit 1

**Assessment type:** Response

**Research the definitions of energy, power and work**

Identify forms of energy, by providing common examples **(24 marks)**

**Conditions**

Period allowed for completion of the task: two weeks

**Task weighting**

5% of the school mark for this pair of units

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**Core Content — Engineering in Society**

**Energy**

|  |  |
| --- | --- |
| * definition of | * identify forms of energy |
| * + energy | * + kinetic |
| * + power | * + potential |
| * + work | * + thermal |
|  | * + chemical |
|  | * + electrical |
|  | * + electro-chemical |
|  | * + electromagnetic |
|  | * + nuclear |

**Task description**

* research the definitions of energy, power and work, then produce a detailed paragraph for each definition
* research sources of information and identify the different forms of energy
* for each form of energy, provide a description of two common examples or uses; the description of the two examples should require approximately 100 words
* images may be included and referred to in the description of the energy
* include all references in an appropriately set out reference list.

|  |  |
| --- | --- |
| **What needs to be submitted for assessment** | **Due dates** |
| * Definitions of energy, power and work |  |
| * Descriptions of the different forms of energy |  |

# Marking key for sample assessment task 2 Part B — Unit 1

|  |  |  |
| --- | --- | --- |
| **Task: Research the definitions of energy, power and work. Identify forms of energy, by providing common examples** | **Maximum possible mark** | **Allocated mark** |
| Documents definitions of energy, power and work   * accurate detailed definitions and correct use of terminology * minor/small errors or some details missing in each definition, uses terminology correctly to define each term * terminology incorrect and/or critical information missing | 5–6  3–4  1–2 | **/6** |
| For each form of energy, with two examples or uses of the form of energy   * accurate identification of energy type and correct descriptions of two common examples, using appropriate terminology * correct terminology in identifying energy type but has minor errors in some descriptions of the examples * energy type defined in general terms, with minor errors in some descriptions of the examples * incorrect use of terminology to identify and describe examples of the energy types | (x2 examples)  7–8  5–6  3–4  1–2 | **/16** |
| * appropriate reference list * limited or no reference list provided | 2  0–1 | **/2** |
| **Total** | | **/24** |

**Some suggested references:**

**Engineering fundamentals: an introduction to engineering / Saeed Moaveni.**

Moaveni, Saeed. Toronto: Thomson, 2005. 0-534-42459-7

**Engineering Mechanics: an introduction to statics, dynamics and strength of materials /**

**Val Ivanoff.**

McGraw-Hill Higher Education, 1996. 0074702394, 9780074702390

**Engineering studies: the definitive guide. Volume 1, the preliminary course /**

**Paul L. Copeland.**

Copeland, Paul L. Allawah, N.S.W.: Anno Domini, 2000. 0-646-39459-2

**Engineering studies: the definitive guide. Volume 2, the HSC course / Paul L. Copeland.**   
Copeland, Paul L. Allawah, N.S.W.: Anno Domini, 2001. 0-9578770-0-5

Sample assessment task

Engineering Studies – General Year 11

Task 5 — Unit 1

**Assessment type:** Production

**Pre-production skills, skills development, as per specialty field**

You are to complete skills-development exercises, as demonstrated by your teacher, prior to the production of the proposed product.

Keep a daily work log/time sheet to record your skills development. **(20 marks)**

**Conditions**

Period allowed for completion of the task: two weeks

**Task weighting**

5% of the school mark for this pair of units \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What you need to do**

**Document and include the following in your daily work log/time sheet**

* Notes on the processes involved in the skills-development exercises
* Listing of appropriate machines and tools to make the project.

**Use the following procedures to complete the project**

* follow Occupational Health and Safety (OHS) practices when using appropriate tools and equipment
* follow instructions to complete skills development in a production process:
* mark out details of parts on materials from a plan using appropriate tools
* select and use appropriate tool/s to accurately cut required parts
* if required, use appropriate tools to shape parts
* select and use appropriate tools to assemble parts
* check fit, modify if needed
* check appearance of assembled skill exercise
* apply a finish, if required.

|  |  |
| --- | --- |
| **What needs to be submitted for assessment** | **Due dates** |
| * Documented daily work log/time sheet |  |
| * Completed skill exercises |  |

# Marking key for sample assessment Task 5 — Unit 1

|  |  |  |
| --- | --- | --- |
| **Skills development exercises** | **Maximum possible mark** | **Allocated mark** |
| Set out of daily work log/time sheet   * well-recorded detailed and correct workshop practices * main steps of procedure recorded with correct work practices * inconsistent notes, partly correct work practices | 3  2  1 | **/3** |
| Marking out required from plan   * marking out completed correctly * marking out completed * marking out completed but required correction | 3  2  1 | **/3** |
| Parts cut/and shaped   * all parts accurately cut, well shaped * parts cut, but some minor unevenness * parts cut, but required second attempts | 5–6  3–4  1–2 | **/6** |
| Final presented skill exercise   * correctly assembled/fitted, appearance shows accurate finished detail * competently assembled/fitted, with an acceptable finished detail * assembled/fitted, appearance shows minor detail flaws * assembled, but poorly fitting parts, appearance shows detail flaws | 7–8  5–6  3–4  1–2 | **/8** |
| **Total** | | **/20** |

Sample assessment task

Engineering Studies – General Year 11

Task 6 — Unit 1

**Assessment type:** Production

**Manufacture of proposed project one**

Use safe production methods to produce the product.

Document a daily work log/time sheet, including record of production with stage photos of production. **(30 marks)**

**Conditions**

Period allowed for completion of the task: six weeks

**Task weighting**

25% of the school mark for this pair of units \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What you need to document and include in your daily work log/time sheet**

* An ongoing completed record of production with photos at each stage of production
* Photographs of completed project

**Use the following procedures to complete the product**

* follow proposed production plan
* use a timeline to construct and test the solution
* maintain safety requirements
* record changes to materials lists or costing
* record regular journal/diary entries
* construct solution by selecting and using appropriate tools and machines, following safe work practices
* ongoing evaluation techniques: diary, journal or portfolio notes and use of photography to record ongoing progress/decision changes made to the product.

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| --- | --- |
| **What needs to be submitted for assessment** | **Due dates** |
| * Stages of production (teacher observation) |  |
| * Production stage photos/daily work log for making process |  |
| * Completed product |  |

# Marking key for sample assessment Task 6 — Unit 1

|  |  |  |
| --- | --- | --- |
| **Production of proposed project one** | **Maximum possible mark** | **Allocated mark** |
| Contents and records in daily work log/time sheet   * correct ongoing records of workshop practices * inconsistent records of work practices | 2  1 | **/2** |
| Completed marking out of material/s as required from plan and cut parts to required shapes using appropriate tools   * marking out completed correctly, all parts correct size and square * marking out completed, parts correct size * marking out completed with minor corrections, parts correct size * marking out required correction, adjusted parts re-sized * marking out required correction, replacement piece cut | 5  4  3  2  1 | **/5** |
| Completed assembly/fitting of product parts   * all parts and joints assembled, even and square fit * all parts and joints assembled, minor corrected unevenness * all parts and joints assembled, minor shape unevenness * all parts and joints assembled, but some required second attempt, some poor fit * parts fitted, joints show poor fit, and some require additional material for second attempt | 9–10  7–8  5–6  3–4  1–2 | **/10** |
| Completed product and ongoing record of production   * correctly assembled/fitted product, presented as per design proposal; detailed record of production clearly showing each stage of the process * correctly assembled/fitted product, easily identified from the design proposal; well explained stages of the process in the record of production * completed product, appearance shows minor detail flaws; limited record of production * assembled, but poorly fitting parts, appearance and production notes show a deviation from the design and production plan | 7–8  5–6  3–4  1–2 | **/8** |
| Completed functioning product   * completed functioning product * inconsistent functioning product requiring adjustments * production causes a non-functioning product | 4–5  2–3  0–1 | **/5** |
| **Total** | | **/30** |

Sample assessment task

Engineering Studies – General Year 11

Task 7 — Unit 1

**Assessment type:** Design

**Evaluation of completed project one**

Test and evaluate your finished product by responding to evaluation questions. **(20 marks)**

**Conditions**

Period allowed for completion of the task: one week, completed during the final week of the term.

**Task weighting**

2% of the school mark for this pair of units \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What you need to do**

Write clear statements to evaluate the project.

Comment on the following key points, using some relevant or all minor dot points:

Test the solution for correct function and document using checklists and test data

* Did the product meet the design requirements?
* compare product against design ideas and final drawings
* comment on appearance, function and safety
  + shape and size
  + finish
  + operating efficiency
  + safe usage
* Did the manufacturing processes achieve a quality product?
* comment on success of manufacturing skills
  + correct shape and size as per design
  + proportion and fit
  + accurate joins, no gaps
  + manufacturing influences on appearance
* ability to keep to the production procedure
* Could the shape, size and design features of the product be improved?
* comment on variations and changes to the design – aesthetics, materials and function

|  |  |
| --- | --- |
| **What needs to be submitted for assessment** | **Due dates** |
| * Completed tested product and evaluation report |  |

# Marking key for sample assessment Task 7 — Unit 1

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| --- | --- | --- |
| **Evaluation of completed proposed project one** | **Maximum possible mark** | **Allocated mark** |
| Evaluation comments with regards to the specifications and design considerations of aesthetics, function and safety   * comments clearly referring to specific design considerations combined with justification of design fulfilling statement of intent requirements * comments outlining major uses and function, and referring to points within statement of intent * comments linked to statement of intent expressing personal likes and dislikes about finished project * comments outlining use of box, but little reference to statement of intent * comments reflecting superficial evaluation | 9–10  7–8  5–6  3–4  1–2 | **/10** |
| Comments on the manufacturing processes   * clear flow of evaluation of all procedures with reference to specific procedures, improvements with little or no criticism of process * appropriate reporting and/or comment on procedures with some logical evaluation of operations, with little criticism of process * comments on procedures with limited evaluation of operations, and some criticism of process * brief comments with few references to journal or diary * comments reflecting superficial evaluation | 5  4  3  2  1 | **/5** |
| Evaluation comments with regards to the shape and size – improvements   * clear comments referring aesthetics, function and safety influenced by shape and size and suggested improvements * comments suggesting improvements referring to major design considerations * comments expressing personal likes and dislikes about improvements * brief reference to design changes to improve function or aesthetics * few comments/superficial notes on improvements | 5  4  3  2  1 | **/5** |
|  | **Total** | **/20** |