**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
 | 5–63–41–2 | **/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)7–85–63–41–2 |  **/16** |
| * appropriate reference list
* limited or no reference list provided
 | 20–1 | **/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
 | 321 | **/3** |
| Marking out required from plan* marking out completed correctly
* marking out completed
* marking out completed but required correction
 | 321 | **/3** |
| Parts cut/and shaped * all parts accurately cut, well shaped
* parts cut, but some minor unevenness
* parts cut, but required second attempts
 | 5–63–41–2 | **/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
 | 7–85–63–41–2 | **/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.

|  |  |
| --- | --- |
| **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
 | 21 | **/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
 | 54321 | **/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
 | 9–107–85–63–41–2 | **/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
 | 7–85–63–41–2 | **/8** |
| Completed functioning product* completed functioning product
* inconsistent functioning product requiring adjustments
* production causes a non-functioning product
 | 4–52–30–1 | **/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

|  |  |  |
| --- | --- | --- |
| **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
 | 9–107–85–63–41–2 | **/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
 | 54321 | **/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
 | 54321 | **/5** |
|  | **Total** | **/20** |