Government of **Western Australia**
School Curriculum and Standards Authority

SAMPLE ASSESSMENT TASKS

ENGINEERING STUDIES
GENERAL YEAR 11

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

Core Content — Engineering in Society

Energy

- definition of
  - energy
  - power
  - work
- identify forms of energy
  - kinetic
  - potential
  - 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.

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

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**