

Curriculum Alignment Plan

FUELLING A HYDROGEN FUTURE: STEM SKILLS FOR SECONDARY LEARNING (YEAR 11, YEAR 12)

Fuelling a Hydrogen Future: STEM Skills for Secondary Learning is aligned with the following Queensland Curriculum & Assessment Authority (QCAA) syllabuses:

SENIOR SUBJECTS

- Chemistry (2019)
- Physics (2019)
- Science in Practice (2019)
- Economics (2019)
- Engineering (2019)

CHEMISTRY (2019)

Unit 1: Chemical fundamentals – structure, properties and reactions

- Describe and explain the properties and structure of atoms and materials, and chemical reactions in terms of reactants, products and energy change.

Unit 2: Molecular interactions and reactions

- Describe and explain intermolecular forces and gases, aqueous solutions and acidity, and rates of chemical reactions.

PHYSICS (2019)

Unit 1: Thermal, nuclear and electrical physics

- Describe and explain heating processes, ionising radiation and nuclear reactions and electrical circuits.

SCIENCE IN PRACTICE (2019)

Core Topic 1: Scientific literacy and working scientifically

- Informed participation in a technologically and scientifically advanced society requires scientific literacy (C1.1).
- Thinking scientifically involves:
 - Asking for evidence to support a claim before accepting it as reasonable
 - Admitting to being uncertain when evidence is lacking

- Rejecting a claim as unreasonable, when evidence does not support it (C1.3).

Core Topic 2: Workplace health and safety

- Safe working procedures are essential when participating in scientific activities and taking precautions will reduce the potential of incidents and injuries (C2.3).

Core Topic 3: Communication and self-management

- Participation in contemporary Australian society and work requires clear and appropriate oral and written communication (C3.1).

ECONOMICS (2019)

Unit 1: Markets and models

- Comprehend economic concepts, principles and models of the economic problem, economic flows and market forces.

ENGINEERING (2019)

Unit 1: Engineering fundamentals and society

- Recognise and describe mechanical and structural problems, engineering technology knowledge, and mechanics and materials science concepts and principles in relation to engineering fundamentals and society.

21st CENTURY SKILLS

Critical thinking

- Analytical thinking
- Problem-solving
- Reasoning
- Reflecting and evaluating
- Intellectual flexibility

Creative thinking

- Innovation
- Identifying alternatives
- Seeing or making new links

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Personal and social skills

- Management (self, career, time, planning and organising)

ICT skills

- Accessing and analysing information
- Being productive users of technology

FURTHER INFORMATION

For further information on Fuelling a Hydrogen Future, contact H2learning@cqu.edu.au or the course authors:

- Dr. Cal Devney
(c.devney@cqu.edu.au)
- Assoc Prof Aruna Jayasuriya
(a.jayasuriya@cqu.edu.au)