INDUSTRIAL TECHNOLOGY - ENGINEERING OUTLINE AND ASSESSMENT GUIDE

Content	Areas of Assessment	Description Of Assessment Tasks
Core modules develop knowledge and skills in the use of materials, tools and techniques related to structures and mechanisms. These are enhanced and further developed through the study of specialist modules in: • **Control Systems** • **Alternative Energy** **Module Components** • OH&S and Risk Management • Materials • Equipment, tools and machines • Engineering Principles and processes • links to industry • design • workplace communication skills • societal and environmental impact • additional content **Projects** Practical projects should reflect the nature of the Engineering focus area and provide opportunities for students to develop specific knowledge, understanding and skills related to engineering. These may include: • small structures • small vehicles • a range of devices and appliances • robotics projects • electronic and mechanical control systems	**Task 1** • consistently applies skills and design principles to the development and production of new projects • independently selects and uses a range of media to illustrate practical projects, and confidently uses technical terminology to discuss production processes with a range of audiences **Task 2** • evaluates the suitability of materials for specific applications and the functional, aesthetic, environmental and economic aspects of projects and commercial products • displays advanced technical skills in identifying and using appropriate materials and hand and machine tools to produce practical projects of excellent quality, independently assessing and managing risks and consistently applying safe work practices **Task 3** • demonstrates extensive knowledge of traditional, current, new and emerging technologies in their field of study, and evaluates the social, cultural and environmental impacts of these technologies • produces competent drawings to illustrate practical projects, and uses accurate technical terms to describe production processes to a range of audiences **Task 4** OHS and risk management Properties and applications of materials Industrial Technology and society Designing, communicating and evaluating Producing quality projects	**Task 1: Term 2 Week 1 25%** **Control Systems – Rube Goldberg Group Project, Engineering Report, and demonstration video** **Task 2: Term 3 Week 1 25%** **Energy use and Sustainability - Ecolamp Project and Engineering Report** **Task 3: Term 3 Week 9 25%** **Alternative Energy – Solar Powered Car Project and Engineering Report** **Task 4: Term 4 Week 2 25%** **Examination**

Stage 5 Course Performance Descriptors – Industrial Technology - Engineering

Areas for Assessment

OHS and risk management
Properties and applications of materials
Industrial Technology and society
Designing, communicating and evaluating
Producing quality projects

Grade E	Grade D	Grade C	Grade B	Grade A
A student performing at this grade typically:	***A student performing at this grade typically:***	***A student performing at this grade typically:***	***A student performing at this grade typically:***	***A student performing at this grade typically:***
• demonstrates elementary knowledge of some technologies in their field of study, and recognises some social, cultural and environmental impacts of these technologies.	• demonstrates basic knowledge of technologies in their field of study, and outlines social, cultural and environmental impacts of these technologies.	• demonstrates sound knowledge of traditional, current, new and emerging technologies in their field of study, and explains the social, cultural and environmental impacts of these technologies.	• demonstrates thorough knowledge of traditional, current, new and emerging technologies in their field of study, and analyses the social, cultural and environmental impacts of these technologies.	• demonstrates extensive knowledge of traditional, current, new and emerging technologies in their field of study, and evaluates the social, cultural and environmental impacts of these technologies.
• with guidance, displays very limited technical skills in identifying and using appropriate materials and hand and machine tools to produce practical projects.	• displays basic technical skills in identifying and using appropriate materials and hand and machine tools to produce practical projects, identifying and managing some risks, and applying safe work practices.	• displays technical skills in identifying and using appropriate materials and hand and machine tools, to produce practical projects of sound quality, identifying and managing risks and applying safe work practices.	• displays high-level technical skills in identifying and using appropriate materials and hand and machine tools to produce high quality practical projects, assessing and managing risks and applying safe work practices.	• displays advanced technical skills in identifying and using appropriate materials and hand and machine tools to produce practical projects of excellent quality, independently assessing and managing risks and consistently applying safe work practices.
• identifies some properties of materials that make them suitable for specific applications, and identifies some aspects of products and commercial products.	• outlines properties of materials that make them suitable for specific applications, and identifies functional, aesthetic, environmental and economic aspects of products and commercial products.	• describes the suitability of materials for specific applications, and the functional, aesthetic, environmental and economic aspects of projects and commercial products.	• analyses the suitability of materials for specific applications, and the functional, aesthetic, environmental and economic aspects of projects and commercial products.	• evaluates the suitability of materials for specific applications and the functional, aesthetic, environmental and economic aspects of projects and commercial products.
• produces elementary sketches related to practical projects, and uses simple terms to describe production processes.	• produces simple drawings for practical projects, and uses general terms to describe production processes to an audience.	• produces competent drawings to illustrate practical projects, and uses accurate technical terms to describe production processes to a range of audiences.	• uses a range of media to illustrate practical projects, and uses technical terminology to discuss production processes with a range of audiences.	• independently selects and uses a range of media to illustrate practical projects, and confidently uses technical terminology to discuss production processes with a range of audiences.
• with assistance, applies elementary skills and design principles to the production or modification of projects.	• applies basic skills and design principles to the development and production or modification of projects.	• applies skills and design principles to the development and production or modification of projects.	• consistently applies skills and design principles to the development and production of new projects.	• independently and consistently applies skills and design principles to the development and production of new projects.