

Sample Program Induction to the industry

Rationale: This program is intended to provide students with an introduction to the structure and function of the manufacturing, engineering and related services industries.

Units of competency: Manufacturing, engineering and related services industries induction

Key terms and concepts:

| Manufacturing, engineering and related services industries induction | |
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| <ul style="list-style-type: none"> • anti-discrimination • apprenticeship and traineeship • basic research skills • bullying and harassment • businesses • career opportunities and pathways • current trends • domestic and international markets • emerging technology • employment and income statistics • employment conditions • enterprise and workplace agreements • environmental issues • environmental strategies | <ul style="list-style-type: none"> • equal employment opportunity (EEO) • inappropriate conduct • industrial awards • industrial relations issues • industry bodies • learning needs • industries/sectors within ‘manufacturing, engineering and related services industries’ • on-the-job and off-the-job training • personal attributes • products and services • sources of industry information • vocational streams • work ethic. |

Please note that the learning experiences in this program are foundational for induction to the manufacturing, engineering and related services industries.

It is anticipated that while this module has been programmed individually and may initially be delivered in one block of time, each topic would be revisited at appropriate times throughout the course, including before and after work placement. Students will develop the knowledge and understanding throughout the HSC metal and engineering course.

This module is able to be examined in the optional HSC examination; however students are not required to be ‘assessed’ against it as it is not an actual unit of competency. Therefore, some of the learning experiences have been labelled ‘activity/task’ – they are simply an activity for this module but may provide an opportunity to assess aspects of units of competency from the metal and engineering course.

The developers of this program make reference to a ‘journal’ throughout this program. This may take the form of a work booklet, diary or scrap book. Students would make entries into their journal throughout the course. Depending what the students include in their journal, it may be a contributing piece of evidence when assessing units of competency.

| Topic | Content | Possible learning experiences / activities |
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| <p><i>Manufacturing, engineering and related services industries induction</i></p> <p>1 Industry work context and setting</p> | <p>Accessing information</p> <p>Basic research skills for:</p> <ul style="list-style-type: none"> • identification of relevant information • questioning techniques to obtain information • sorting, summarising and presenting information. <p>An awareness of sources of current industry information:</p> <ul style="list-style-type: none"> • industry associations and organisations • unions • industry journals • media • the internet • libraries • reference manuals • policy and procedure manuals • personal observations and experience • industry contacts, mentors and experience • colleagues, supervisors/team leaders and managers • professional development opportunities • industry functions. | <p><i>Introduce the concept of students maintaining a journal throughout their HSC metal and engineering course and, in particular, for this module. All notes and activities to be entered into the journal. [Activity/Task 1]</i></p> <p>Guest speaker (eg school librarian) and workshop – basic research skills and sources of information.</p> <p><i>Students will be required to access a range of sources of information when completing their class activities and assessment tasks.</i></p> <p>Class discussion – consider best source to access in a range of situations.</p> |
| <p><i>Manufacturing, engineering and related services industries induction</i></p> <p>1 Industry work context and setting</p> | <p>Industry knowledge</p> <p>An awareness of the industries (and their sectors) within the ‘manufacturing, engineering and related services industries’:</p> <ul style="list-style-type: none"> • metal, engineering and manufacturing • aeroskills <ul style="list-style-type: none"> - aircraft manufacture - aircraft maintenance - space - training • boating <ul style="list-style-type: none"> - marine craft (boats and ships) construction - boating services - tourism. | <p>Brainstorm.</p> <p>Mind map – build a mind map linking industry sectors within the manufacturing, engineering and related services industries.</p> |

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| | <p>A basic knowledge of the industries/sectors:</p> <ul style="list-style-type: none"> • the primary role and service/s offered by each • the interrelationship between industries/sectors. <p>An awareness of various businesses within the industries/sectors of the ‘manufacturing, engineering and related services industries’:</p> <ul style="list-style-type: none"> • metal <ul style="list-style-type: none"> - fabrication - machining - manufacturing • electrical equipment and appliance manufacturing, maintenance and repair • industrial machinery and equipment manufacturing, maintenance and repair • transport equipment manufacturing, maintenance and repair • shipwright <ul style="list-style-type: none"> - build - repair and maintenance • boating <ul style="list-style-type: none"> - sales, retail and chandlery - boat servicing - marina and slipway operations - charter operations and hire - manufacture of trailers, sails and other accessories | <p>Student activity – each student is to select one manufacturing, engineering or related service industry/sector and prepare an information sheet outlining:</p> <ul style="list-style-type: none"> • name of industry/sector • primary role • type of work performed • service/s provided • interrelationship with other industries/sectors • materials used • training requirements for employment • photographs of products related to the service/s • local/national provider. <p>(Link to activity in ‘employment in the industry’ section.)</p> <p>Handout.</p> |

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| | <ul style="list-style-type: none"> • jewellery and horological <ul style="list-style-type: none"> - design - manufacturer - repair and maintenance • locksmith. <p>An awareness of the following in relation to the manufacturing, engineering and related services industries (as a whole) in Australia:</p> <ul style="list-style-type: none"> • statistics <ul style="list-style-type: none"> - employment - income • current trends. | <p>Handout – briefly outlining general statistics (employment and income) and current trends.</p> <p>Visual stimulus (graphs, tables, etc) – students to interpret information.</p> |
| <p><i>Manufacturing, engineering and related services industries induction</i></p> <p>1 Industry work context and setting</p> | <p>Issues affecting the industry</p> <p>A basic awareness of current issues of concern to the manufacturing, engineering and related services industries relating to:</p> <ul style="list-style-type: none"> • government initiatives • political climate • skills shortage • globalisation • public liability • risk management • emerging technologies. <p>A basic understanding of the effects of emerging technology on:</p> <ul style="list-style-type: none"> • current work practices/productivity • employment | <p>Handout.</p> <p>Class activity – each student is assigned one week in a school term. During that week they are required to purchase a major city newspaper (daily) as well as obtain their local paper, and locate articles identifying information and/or issues for the manufacturing, engineering and related services industries. A ‘class scrapbook’ will store all articles found. Students will provide a quick summary of discovery at the conclusion of their week. Students should be proactive throughout completion of their HSC course, continuing to add to this discussion (eg further newspaper articles, radio or TV reports, work placement experience, etc.) [Activity/Task 2]</p> <p>Define: emerging technology.</p> <p>Prepare a mind map on the impact of emerging technologies on the industry.</p> |

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| | <ul style="list-style-type: none"> • work methods/techniques • market conditions/new markets • cost-effectiveness. | <p>Visual stimulus: videos, pictures or articles of emerging technologies.</p> |
| <p><i>Manufacturing, engineering and related services industries induction</i></p> <p>4 Manufacturing, engineering and related services industries and the environment</p> | <p>Environmental issues</p> <p>A basic awareness of current environmental issues:</p> <ul style="list-style-type: none"> • sustainability • waste management • energy usage/efficiency • water resource management • conservation • natural resource management • recycling. <p>A basic understanding of the role of environmental guidelines and legislation in the operation of a business within the manufacturing, engineering and related services industries.</p> <p>A basic understanding of the primary role/responsibility of:</p> <ul style="list-style-type: none"> • the NSW Department of Environment and Conservation [incorporating Environment Protection Authority (EPA)] • local government. <p>Strategies for minimisation of potential negative environmental impacts:</p> <ul style="list-style-type: none"> • environmental hazard identification and risk minimisation and reporting • minimisation strategies <ul style="list-style-type: none"> - regular maintenance of machinery and equipment - use of biodegradable/non-toxic materials - habitat protection • waste minimisation <ul style="list-style-type: none"> - accurate measurements and calculations | <p>Define and briefly discuss each environmental issue.</p> <p><i>Ensure environmental concepts are considered as an integral part of the manufacturing, engineering and related services industries and not just a side issue.</i></p> <p>Focus question – why is it necessary for environmental guidelines and legislation to exist?</p> <p>Guest speaker (or view website) from:</p> <ul style="list-style-type: none"> • NSW Department of Environment and Conservation • local council <p>to discuss role and responsibilities, practical application of legislation, environmental issues and positive workplace practices.</p> <p>Brainstorm supported by class notes/handouts – workplace practices that have a positive impact on the environment.</p> <p>Worksheet – workplace scenarios where students are required to suggest strategies for improvement.</p> <p>Extended response question (preparation and practice for the HSC exam). [Activity/Task 3]</p> |

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| | <ul style="list-style-type: none"> - recycling - using recyclable products - resource efficiency • improvement strategies • environmental monitoring • emergency procedures. | |
| <p><i>Manufacturing, engineering and related services industries induction</i></p> <p>2 Career opportunities</p> | <p>Employment in the industry</p> <p>An understanding of the difference between:</p> <ul style="list-style-type: none"> • an apprenticeship • a traineeship. <p>An awareness of vocational streams [as outlined in the Metal and Engineering Training Package (MEM05)] within the manufacturing, engineering and related services:</p> <ul style="list-style-type: none"> • engineering <ul style="list-style-type: none"> - production technology - production systems - mechanical trade - fabrication trade - electrical/electronic trade - technician • boating services • jewellery manufacture • locksmithing • marine craft construction. <p>A basic knowledge of career pathways for a specific industry area/sector within the manufacturing, engineering and related services industries and knowledge and skills required for different job roles.</p> | <p>Visual stimulus (eg interactive computing application).</p> <p>Handout – outlining the key features of an apprenticeship and traineeship and the difference between them.</p> <p>Appropriate pages from the MEM05 Training Package as a handout.</p> <p>Individual activity – students select a career/job opportunity to investigate and present to the class. Ensure a variety of jobs are selected from a range of industries/sectors. Consider a novel approach such as role-play where students present themselves (dressed appropriately with props) as the person in the specific job identified.</p> |

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| | | <p>Class discussion: how can being multiskilled assist with career opportunities?</p> <p>Work placement activity – interview an employee and prepare a flow chart and accompanying notes defining their career path to date, as well as future ambitions [Link to Activity/Task 1].</p> |
| <p><i>Manufacturing, engineering and related services industries induction</i></p> <p>3 Employment conditions, responsibilities and obligations</p> | <p>Personal attributes</p> <p>Personal attributes and work ethics of an employee within the manufacturing, engineering and related services industries:</p> <ul style="list-style-type: none"> • attendance and punctuality • ethical behaviour • honesty • work performance • taking directives • attention to detail • personal presentation • attitude • confidentiality • consistency of service • safe work practices. | <p>Define personal attribute, work ethic and interpersonal skills.</p> <p>Small group discussion and report back to class on the personal attributes and interpersonal skills that are needed for employment in the manufacturing, engineering and related services industries.</p> <p>Link to ‘code of conduct’ activity in sample program <i>Plan and carry out quality work</i>.</p> |
| <p><i>Manufacturing, engineering and related services industries induction</i></p> <p>3 Employment conditions, responsibilities and obligations</p> | <p>Industrial relations</p> <p>An awareness of current industrial relations issues affecting the manufacturing, engineering and related services industries.</p> | <p>Guest speaker.</p> <p>Handout.</p> <p>Class discussion.</p> <p>Review current issues involving new workplace relation legislation (‘Work Choices’).</p> |

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| | <p>A basic knowledge of employment conditions within the manufacturing, engineering and related services industries:</p> <ul style="list-style-type: none"> • industrial awards • enterprise agreements • workplace agreements. <p>A basic understanding of the primary role/function of industry bodies:</p> <ul style="list-style-type: none"> • employer groups <ul style="list-style-type: none"> - Australian Industry Group (Ai-G) • unions/employee groups <ul style="list-style-type: none"> - Australian Council of Trade Unions (ACTU) - NSW Labour Council - Australian Workers Union (AWU) - Australian Manufacturing Workers Union (AMWU) • professional associations [as applicable to a specific industry area/sector within the manufacturing, engineering and related services industries, for example, Boating Industry Association (BIA) or Jewellers Association of Australia (JAA)] • training <ul style="list-style-type: none"> - Manufacturing Skills Australia (MSA). | <p>Handout – industrial relations terms.</p> <p>Visual stimulus – sample of an award and agreement/s.</p> <p>Briefly describe the employment conditions of a person employed as:</p> <ul style="list-style-type: none"> • an apprentice • a qualified tradesperson • a site foreman. <p>Prior to work placement, class discussion on their perception and expectations of:</p> <ul style="list-style-type: none"> • industry working conditions • personal attributes required • work ethics • industrial relations issues. <p>Following work placement, compare preliminary perceptions with information/experience obtained at their manufacturing, engineering or related services industries workplace.</p> <p>Handout – listing the name and contact details for key employer groups, unions/employee groups, professional associations and training.</p> <p>Class discussion:</p> <ul style="list-style-type: none"> • what union/s covers manufacturing, engineering and related services industries workers? • what is the purpose? • what kind of advice is provided? <p>View web pages for groups listed. Identify their main role/responsibility and service/s provided.</p> <p>Guest speaker/s.</p> |

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| <p><i>Manufacturing, engineering and related services industries induction</i></p> <p>3 Employment conditions, responsibilities and obligations</p> | <p>Anti-discrimination and EEO</p> <p>An awareness of the different forms of bullying and harassment in the workplace:</p> <ul style="list-style-type: none"> • sexual • verbal • physical • psychological. <p>A basic understanding of the principles of anti-discrimination legislation:</p> <ul style="list-style-type: none"> • <i>Anti-Discrimination Act 1977</i> (NSW) • <i>Sex Discrimination Act 1984</i> (Cth) • <i>Racial Discrimination Act 1975</i> (Cth) • <i>Disability Discrimination Act 1992</i> (Cth) • <i>Age Discrimination Act 2004</i> (Cth). <p>Reciprocal rights and responsibilities of employers and employees in relation to anti-discrimination.</p> <p>A basic understanding of the principles of equal employment opportunity (EEO) legislation:</p> <ul style="list-style-type: none"> • <i>Equal Employment Opportunity (Commonwealth Authorities) Act 1987</i> (Cth) • <i>Equal Opportunity for Women in the Workplace Act 1999</i> (Cth). <p>Reciprocal rights and responsibilities of employers and employees in relation to EEO.</p> <p>An awareness of:</p> <ul style="list-style-type: none"> • workplace policies and procedures designed to prevent discrimination and harassment in the workplace | <p>Handout.</p> <p>Class discussion:</p> <ul style="list-style-type: none"> • what incidents of bullying or harassment have you observed (or experienced) at school and/or in a workplace? • could these situations have been prevented? How? • what is the difference between ‘direct’ and ‘indirect’ discrimination? <p>Handout – brief summary of the principles and roles and responsibilities of employers and employees.</p> <p>Case study analysis and/or video stimulus.</p> <p>Define EEO and how it is applied in the workplace.</p> <p>Handout – brief summary of the principles and roles and responsibilities of employers and employees.</p> <p>Case study analysis and/or video stimulus.</p> <p>Class discussion.</p> <p>Handout – outlining generic guidelines and advice.</p> |

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| | <ul style="list-style-type: none"> • the legal ramifications of inappropriate workplace conduct • recourse in the event of inappropriate conduct <ul style="list-style-type: none"> - reporting complaints - grievance procedures - disciplinary action. | <p>Work placement activity – discuss with your supervisor the policies and procedures that are in place in their business and the ramifications of inappropriate workplace conduct. [Link to Activity/Task 1]</p> <p>Develop a flow chart to outline grievance procedures in a workplace.</p> |
| <p><i>Manufacturing, engineering and related services industries induction</i></p> <p>2 Career opportunities</p> | <p>Ongoing learning</p> <p>Self-reflection skills:</p> <ul style="list-style-type: none"> • recognition of current knowledge and skills • identification of <ul style="list-style-type: none"> - knowledge and skills required for current job - knowledge and skill gaps - learning opportunities to meet potential learning needs and fulfil career aspirations. <p>Recognition of learning as an on-going process and an awareness of opportunities to meet learning needs:</p> <ul style="list-style-type: none"> • on-the-job and/or off-the-job training • seminars/workshops/courses • multiskilling/job rotation in current workplace • mentoring programs. <p>Evidence of learning:</p> <ul style="list-style-type: none"> • transcript/qualification/ticket/licence • work diary • supervisor and/or team leader’s report/evaluation/appraisal • competency record • learning portfolio. | <p>Guest speaker (eg. school careers adviser).</p> <p>Practical activities:</p> <ul style="list-style-type: none"> • develop a curriculum vitae • locate and ‘apply’ for an entry level position in the metal, engineering or related services industries (from the newspaper, Internet or alternative) • identify a position to which you aspire and conduct a knowledge/skills gap analysis • develop a personal development needs plan to help achieve career aspiration • begin compiling evidence of learning (portfolio of learning). <p>Brainstorm:</p> <ul style="list-style-type: none"> • learning opportunities • evidence of learning. |