Workplace Learning Record

VCE VET Engineering Studies



22470VIC Certificate II in Engineering Studies

**Student name**:

Modification history

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SWL Recognition

Structured Workplace Learning (SWL) recognition provides you with the opportunity to gain credit into your VCE or VCAL for undertaking SWL that matches your VCE VET program.

To receive recognition and credit, you will be required to reflect on your experience in the workplace and how this relates to your VET course. Your reflections are to be recorded in the three sections of this Workplace Learning Record (WLR).

About this workplace learning record

This WLR helps you gather evidence for assessment and is part of the requirement for obtaining SWL recognition.

To be eligible for one unit of credit towards your VCE or VCAL, you must:

* be enrolled in a minimum of 180 nominal hours of units of competency (UoCs) from the 22470VIC Certificate II in Engineering Studies
* undertake a minimum of 80 hours (equivalent to 10 days of work) in an engineering industry placement
* reflect on a minimum of six UoCs from your program including the WHS UoC (MEM13014A — see page 8).

VCE VET Engineering Studies

22470VIC / Certificate II in Engineering Studies

The VCE VET Engineering Studies program is drawn from a Victorian accredited curriculum and offers a portable qualification which is recognised throughout Australia.

The VCE VET Engineering program provides pre-employment training and pathways in the engineering, manufacturing or related industries and accommodates entry into the wider engineering industry.

Specifically, a graduate of this course may:

* undertake an apprenticeship, traineeship or cadetship leading into a range of related careers as a tradesperson
* enrol in Certificate III qualifications in the engineering sector
* gain entry level employment in engineering or related industries
* undertake higher level VET certificates in the engineering sector or a degree in engineering or related industries.

The 22470VIC Certificate II in Engineering Studies:

* provides students with competencies in engineering skills including basic machining, cutting, grinding and turning operations, creating engineering drawings using computer-aided systems, and materials handling
* fosters the development of social and personal skills relevant to further training and employment
* provides experience in and knowledge of a range of occupations at engineering trade level
* enables students to gain a recognised credential and credits for further training.

Workplace Learning Record

The WLR is divided into three sections.

**Section 1**: Learner profile

**Section 2**: Learning about VET UoCs in the workplace

**Section 3**: Post-placement reflections

Please complete the details of your workplace.

|  |  |
| --- | --- |
| Employer/Company/Business |  |
| Supervisor name |  |
| Contact phone number |  |

|  |  |
| --- | --- |
| Employer/Company/Business |  |
| Supervisor name |  |
| Contact phone number |  |

|  |  |
| --- | --- |
| Employer/Company/Business |  |
| Supervisor name |  |
| Contact phone number |  |

Section 1: Learner profile

Complete the learner profile and discuss this with your host employer on or before your first day of placement.

|  |  |
| --- | --- |
| **Name** |  |
| **School**  |  |
| **Phone number** |  |
| **Email** |  |
| **Explain why you decided to undertake this VET course?** |
|  |
| **List the other subjects that you are undertaking.** |
|  |
| **Explain why you have chosen this overall program.**  |
|  |
| **Outline what interests you about the industry.** |
|  |
| **What is your planned career path or future career aspiration?**  |
|  |
| **Describe any workplace skills you have developed through previous work experience, SWL or part time employment.** |
|  |
| **How have you developed these skills?**  |
|  |

Section 2: Learning about VET units of competency in the workplace

This WLR contains three key questions per UoC designed to draw out related experiences you may be exposed to in a workplace.

This does not cover all the elements or performance criteria within the units and is not designed as a UoC assessment tool.

You should comment on the UoCs you have experienced in the workplace and reflect on actual observations or activities that you have been exposed to. Your observations will:

* reinforce the training you have undertaken
* identify differences in practice or equipment
* identify areas requiring further training or practical experience.

You are encouraged to take photos and/or video where appropriate to showcase learning in the workplace. Evidence you collect can include:

* observations
* descriptions of activities and tasks
* conversations with employers and other staff
* participation in meetings
* workplace documents
* research in the workplace
* photos of equipment/processes/events
* video of workplace activities.

**Note**: please speak to your host employer before taking photos or video. Do not use the names or details of any clients / stakeholders external to the organisation / other. This record does not require identifying actual people or events, as this may breach confidentiality.

Program outline

22470VIC Certificate II in Engineering Studies

UoCs included in this program are listed below. There are compulsory UoCs, along with a selection of electives. You can make a note of any UoC that relates to your experiences in the workplace. Indicate the year you are undertaking each UoC.

| Unit code | Unit of Competency | Nominal Hours | Year | Page |
| --- | --- | --- | --- | --- |
| **Work, Health and Safety Units** |
| MEM13014A | Apply principles of Occupational Health & Safety in the work environment | 10 |  | 8 |
| **Compulsory** |
| MEM18001C | Use hand tools | 20 |  | 9 |
| MEMPE006A | Undertake a basic engineering project | 80 |  | 10 |
| VU22329 | Report on a range of sectors in the manufacturing, engineering and related industries | 30 |  | 11 |
| VU22330 | Select and interpret drawings and prepare three dimensional (3D) sketches and drawings | 20 |  | 12 |
| VU22331 | Perform basic machining processes | 40 |  | 13 |
| VU22332 | Apply basic fabrication techniques | 40 |  | 14 |
| VU22333 | Perform intermediate engineering computations | 40 |  | 15 |
| **Electives** |
| MEM16008 | Interact with computing technology | 20 |  | 16 |
| MEM18002B | Use power tools/hand held operations | 20 |  | 17 |
| MEM30011A | Set up basic pneumatic circuits | 40 |  | 18 |
| VU21861 | Investigate carbon fibre composite processes and terminology | 60 |  | 19 |
| VU22334 | Produce basic engineering components and products using fabrication and machining operations | 60 |  | 20 |
| VU22335 | Perform metal machining operations | 60 |  | 21 |
| VU22336 | Perform metal fabrication operations | 60 |  | 22 |
| VU22337 | Perform basic welding and thermal cutting processes to fabricate engineering structures | 60 |  | 23 |
| VU22338 | Configure and program a basic robotic system | 60 |  | 24 |
| VU22339 | Create engineering drawings using computer aided systems | 60 |  | 25 |
| VU22340 | Use 3D printing to create products | 40 |  | 26 |
| VU22341 | Apply basic computer networking concepts and practices | 40 |  | 27 |

List any other units you are undertaking and include comments regarding additional units on page 28.

VCE VET units of competency

MEM13014A Apply principles of Occupational Health & Safety in the work environment

This unit covers Occupational Health and Safety (OHS) procedures in an engineering or similar work environment.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| Describe the personal protective equipment (PPE) you wore in the workplace during your placement. |  |
| How did you learn about the emergency and evacuation procedures in the workplace? |  |
| Who would you report a workplace hazard to and what procedure would you follow? |  |

MEM18001C Use hand tools

This unit covers using a range of hand tools for a variety of general engineering applications.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| What types of hand tools did you use in the workplace? |  |
| What was the workplace procedure for end-of-day maintenance and storing of hand tools? |  |
| If you found a faulty tool, what were you required to do about it? |  |

MEMPE006A Undertake a basic engineering project

This unit of competency is intended to provide the learner with the opportunity to plan and undertake an engineering project which can be completed in an institutional environment.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| What sorts of methods did you observed being used to join metal? |  |
| What process did the workplace follow to produce products and what machines, tools and equipment were used? |  |
| Describe a project that you contributed to in the workplace.What was your role?Outline the assembly process. |  |

VU22329 Report on a range of sectors in the manufacturing, engineering and related industries

This unit of competency sets out the knowledge and skills required to locate information and report on the breath of coverage and degree of diversity found in the manufacturing, engineering and related industries.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| What was the range of occupations/job roles that you observed at the workplace? |  |
| What qualifications/ courses (VET and university) are required or preferred by the workplace to be employed in the roles listed above? |  |
| What were the activities and products produced by the workplace that you observed? |  |

VU22330 Select and interpret drawings and prepare three dimensional (3D) sketches and drawings

This unit of competency sets out the knowledge and skills required to select and interpret drawings to plan and complete an engineering task.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| What necessary information would you check for in sketches and drawings? |  |
| How did you use a sketch or drawing for the information contained in them in your placement? |  |
| Briefly describe how you produced a sketch or drawing as part of a work task. |  |

VU22331 Perform basic machining processes

This unit of competency describes the knowledge and skills required to perform basic machining operations.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| Describe the OHS preparation you received before using any machining equipment. |  |
| Describe the tools you used in a machining process and the purposes of the tools. |  |
| Describe the procedure for cleaning up after a machining task. |  |

VU22332 Apply basic fabrication techniques

This unit of competency describes the knowledge and skills required to perform basic fabrication tasks.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| Why is a work plan important when using fabrication to complete tasks? |  |
| Briefly describe a fabrication technique you used in the workplace and its purpose. |  |
| What sorts of problems can occur with fabrication equipment? |  |

VU22333 Perform intermediate engineering computations

This unit of competency describes the skills and knowledge required to prepare and apply intermediate level engineering computations.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| What sorts of computation/calculation methods are commonly used in the engineering workplace? |  |
| What process did you follow for checking that you accurately understood and performed a task requiring calculations? |  |
| Describe how the workplace determined the relevant formulae to suit the job requirement. |  |

MEM16008 Interact with computing technology

This unit covers accessing, inputting and storing information used in manufacturing, engineering or related environments, using computing technology.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| Where was the computing technology located in the workplace? |  |
| What sorts of software programs and applications are commonly used in this workplace? |  |
| Describe a task you undertook that involved the use of computing technology. |  |

MEM18002B Use power tools/hand held operations

This unit covers using a range of hand held power tools and fixed power tools for hand held operations for a variety of general engineering applications.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| What types of power tools did you use in the workplace? |  |
| What personal protective equipment (PPE) did you wear when using power tools? |  |
| What were the skills you learned in your work placement about using power tools? |  |

MEM30011A Set up basic pneumatic circuits

This unit covers setting up and selecting components associated with single linear pneumatic systems.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| How did the workplace determine system requirements? |  |
| What components for simple pneumatic circuits were used in the workplace? |  |
| Describe how the workplace tested the operation of pneumatic circuits. |  |

VU21861 Investigate carbon fibre composite processes and terminology

This unit describes the outcomes required to outline the different processes used for the manufacture of products using carbon fibres, the advantages and disadvantages of each process and the industry terminology that is used.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| What was the workplace process steps for the manufacture of a product using carbon fibre materials? |  |
| What were the relevant workplace health and safety procedures in the handling of carbon fibre composites that were explained to you by the employer? |  |
| Describe the finishing processes that were used in the workplace on composite products. |  |

VU22334 Produce basic engineering components and products using fabrication and machining operations

This unit of competency describes the knowledge and skills required to produce a range of basic engineering components and products using basic fabrication and machining techniques.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| What sort/s of fabrication techniques did you practice in the workplace? |  |
| What sort/s of fabrication equipment did you use in the production of a component? |  |
| Who did you report to when you finished a work task?What did they do once you reported to them? |  |

VU22335 Perform metal machining operations

This unit of competency describes the knowledge and skills required to produce basic engineering components and products by metal machining operations such as cutting, grinding, turning and drilling.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| What sorts of documentation and/or instructions did you read to prepare for a work task involving cutting, grinding, turning and drilling? |  |
| How did you find out about WHS policies and procedures relating to cutting, grinding, turning and drilling operations in this workplace? |  |
| Describe any cutting, grinding, turning or drilling operations that you undertook in the workplace.Include the machine used and the work piece. |  |

VU22336 Perform metal fabrication operations

This unit of competency describes the knowledge and skills required to perform various fabrication operations such as cutting, forming, bending and shaping to produce components and products.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| Briefly describe a job you performed to cut and form a component. |  |
| Describe a situation where you had to report a problem with setting up or using machinery or with a product quality problem. |  |
| What is most important for ensuring a job is done properly? |  |

VU22337 Perform basic welding and thermal cutting processes to fabricate engineering structures

The unit includes identifying the welding and thermal cutting equipment and consumables, preparing materials and equipment, welding and thermal cutting process and safe welding and thermal cutting practices.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| Where would you go in the workplace to find out about risk control measures? What were the major risk control measures you observed? |  |
| What sorts of components did you weld and cut? |  |
| Describe briefly how welding is conducted safely. |  |

VU22338 Configure and program a basic robotic system

This unit of competency describes the knowledge and skills required to configure and program a basic robotic system.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| How did you find out about safety hazards relating to robotic systems in the workplace where you undertook structured work placement? |  |
| What sort of equipment/machine/plant was used in the workplace to configure and program a robotic system? |  |
| How were the robotic system overall function and requirements verified in the workplace? |  |

VU22339 Create engineering drawings using computer aided systems

This unit of competency describes the knowledge and skills required to produce engineering drawings using a computer aided drafting (CAD) system.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| Briefly describe the CAD environment used in the workplace. |  |
| Describe a situation where you would be required to develop simple 2D and 3D drawings in the workplace. |  |
| Describe a situation where you would be required to develop Simple 2D and 3D drawings in the workplace. |  |

VU22340 Use 3D printing to create products

This unit describes the skills and knowledge to utilise a three-dimensional (3D) printer to produce basic products.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| What was the purpose for 3D printing in the workplace? |  |
| What was the job role of the person who created 3D printing products? |  |
| How did the workplace evaluate 3D printed products? |  |

VU22341 Apply basic computer networking concepts and practices

This unit describes the knowledge and skills required to apply basic computer networking concepts and practices to a new or existing computer network.

|  |  |
| --- | --- |
| **Respond to the following** | **Comments/observations** |
| Briefly describe the basic network components used in the workplace. |  |
| Describe how troubleshooting of the computer network was handled in the workplace. |  |
| What were the different types of wireless network connections used in the workplace? |  |

Comments/observations on any other unit(s) of competency not listed

|  |  |
| --- | --- |
| **Unit(s)** | **Comments/observations** |
|  |  |

Section 3: Student post-placement reflection

Employability skills are a set of eight skills we use every day in the workplace.

1. Communication
2. Teamwork
3. Problem solving
4. Self-management
5. Planning and organising
6. Technology
7. Learning
8. Initiative and enterprise

When you are on work placement, you will be using employability skills in many ways.

This record will assist you when applying for jobs and in interviews. The skills you are developing may be transferred to a range of occupations. Assessment of SWL recognition is based on a discussion of each of the sections from this booklet with a school representative.

In Section 3, identify the employability skills you have used and how you have demonstrated them in the workplace. Identify how the skills you have acquired and used during your 80 hours of SWL might assist you in the future.

List of employability skills

How did you demonstrate **communication skills**? For example, by listening and understanding, speaking clearly and directly, or reading and writing.

|  |
| --- |
|  |

How did you demonstrate **teamwork**? For example, by working as part of a team or sharing ideas and resources with co-workers.

|  |
| --- |
|  |

How did you demonstrate **problem solving**? For example, by identifying problems or developing solutions to workplace issues.

|  |
| --- |
|  |

How did you demonstrate **self-management**? For example, by taking responsibility, managing time and tasks effectively, monitoring your own performance or having the ability to work unsupervised.

|  |
| --- |
|  |

How did you demonstrate **planning and organising**? For example, by time management, setting priorities, making decisions, setting goals, collecting, or analysing and organising information.

|  |
| --- |
|  |

How did you demonstrate the use of **technology**? For example, by being prepared to use a range of technology systems, IT skills (typing or data entry), or being able to learn new skills from the technology used in this industry.

|  |
| --- |
|  |

How did you demonstrate **learning**? For example, by being willing to learn new things, being open to new ideas or adapting to change.

|  |
| --- |
|  |

How did you demonstrate **initiative and enterprise**? For example, being creative, adapting to new situations, turning ideas into actions, coming up with a variety of options.

|  |
| --- |
|  |

Summary of industry learning

At the conclusion of your SWL for this VET Qualification, think about the experiences you have had in the workplace, your reflection of learning against the UoCs and the employability skills you have developed.

How will these learnings assist you in your pathway to employment or further training in this industry?

|  |
| --- |
|  |

Student declaration

I confirm that I have undertaken work placement with:

|  |  |
| --- | --- |
| **Employer/Company/Business name** | **Total hours of placement** |
|  |  |
|  |  |
|  |  |
| **TOTAL** |  |

I have completed the reflections and evidence submitted in this WLR and they are from my own experiences.

**Signed** (Student)

**Name** (Block letters)

**Date**