UEENEER003B Contribute to the development of a product/application/ service

Release: 2

UEENEER003B Contribute to the development of a product/application/ service

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor   **1)**
1.1) Descriptor

This unit covers the ability to assist managers to plan, coordinate and report on the development of a product/application/service.

Application of the Unit

Application of the Unit   **4)**

This unit applies to any recognised development program that leads to the acquisition of a formal award at AQF level 5 or higher.

Licensing/Regulatory Information

1.2) License to practice

The skills and knowledge described in this unit do not require a licence to practice in the workplace. However, practice in this unit is subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s)   **2)**

2.1) Competencies

Prerequisite Unit(s)   **2**)

There are no prerequisite competencies for this unit.

Employability Skills Information

Employability Skills   **3**)
The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a unit

Performance criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Contribute to the development of a design brief for a product/service/application.	1.1 Technical specifications, regulatory, industrial, intellectual property and market requirements of the product/application/service to be developed are negotiated with client(s), stakeholders and management and agreed on.
	1.2 Technical specifications, regulatory, industrial, intellectual property and market requirements of the product/application/service to be developed are confirmed.
	1.3 Resource requirements, including personnel, equipment and materials needed to develop the product/application/service area confirmed.
	1.4 Quality requirements and standards for development of the product/application/service

ELEMENT		PERFORMANCE CRITERIA	
			are confirmed.
		1.5	A design brief for the product/application/service is developed in a team environment.
		1.6	Approval is obtained for the design brief from appropriate personnel.
2	Prepare to develop a product/application/service	2.1	The required outcome(s) as identified in design brief is confirmed with appropriate personnel.
		2.2	The product/application/service is developed in consultation with appropriate production personnel.
		2.3	A development procedure is formulated to: - deliver required quality outcome(s) - ensure OHS, environmental, industrial and regulatory requirements are stringently observed - ensure tooling, process, materials and equipment specifications are addressed
		2.4	Approval is obtained of the development procedure from appropriate personnel.
3	Contribute to the development of a product/application/service	3.1	The development procedure is confirmed with appropriate personnel.
		3.2	A product/application/ service product is developed in accordance with the design brief and development procedure.
		3.3	Development results are recorded in accordance with enterprise procedures.
		3.4	Develop results and identify characteristics which are outside design and development specifications are identified.
		3.5	Changes are recommended, as necessary, to achieve product/application/ service quality and production requirements.
		3.6	Approval of changes is obtained from appropriate personnel.

ELEMENT	PERFORMANCE CRITERIA
	3.7 Revision of the product/ application/service to achieve quality and production requirements is coordinated where necessary.
4 Document and report product/application/service development outcomes	4.1 All product/application/service development objectives are met.
	4.2 Product/application/service development reporting requirements are completed.

       EE-Oz Training Standards

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

7) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and contributing to the development of a product/application/service.
All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-ER003B   Product/application/service development
Evidence shall show that knowledge has been acquired of safe working practices and contributing to the development of a product/application/service.

T1   Project planning

- Purpose of project planning
- Documents needed to plan a project
- Factors influencing sequence and restraints of project activities
- Critical path analysis encompassing:
    - Graphical representation methods
    - Methods of representing time/rates

T2   Project management encompassing:

- Defining project parameters - Project scope; Project stakeholders and clients; Project phases and the relationship between phases; Time requirements and limitations; Resource requirements and limitations; Quality requirements and limitations.
- Time management - time management concepts; standard practices for ensuring a project runs to time and the like.
- Financial management - Financial management concepts; Standard practices for managing project finances; Project budgets; Costs, variations and estimations; Invoicing against project phases/deliverables; Acquittals and the like.
- Quality management - Quality management concepts; Standard practices for managing quality within a project.
- Human Resource management - human resource management concepts; standard practices for managing personnel within a project
- Communication management - Communication management concepts; Standard practices for managing communication within a project and the like.
- Risk management and contingencies - risk management concepts; standard practices for managing risk within a project; Internal risks; External risks; Risk minimisation; Risk removal; Contingencies and the like.
- Procurement management - procurement management concepts; standard practices for managing procurement and the like.

REQUIRED SKILLS AND KNOWLEDGE

- Physical Resource management - Types of physical resource, including; Equipment, Technology, Information, Facilities; Physical resource management concepts; Standard practices for managing physical resources
- Contracts - Understanding project contracts; Standard practices for working to contract specifications; Contract format; Contract content; Legal obligations of contract parties; Accompanying documentation including; Contract Schedules and the like.
- Performance assessment and continuous improvement - standard performance assessment practices; standard continuous improvement practices and the like
- Engineering ethics principles

T3   Work in a team encompassing:

- Types of teams - Managerial, Administrative, Project-based, Commercial and Social
- Roles, responsibilities and accountabilities of team members - the role, responsibility and accountability of individuals, teams, organisational management, clients and the like.
- Working in a team - Identification and utilisation of team member skills and knowledge; Maximising benefits of team diversity; Team planning; Team commitment and cooperation; Improving/Maximising team performance to achieve goals; Team monitoring and adjustment; Plain English literacy and communication; Leading, facilitating, participating, coaching, mentoring.
- Working with clients - client relations, client liaison, the practice of working with clients and the like.
- Conflict resolution – Personality analysis tools, Strategies for dealing with difficult people and the like.

T4   Scientific writing and communication encompassing:

- Types of scientific writing and communication - The distinguishing characteristics of the different types of scientific writing.
- Purpose of the different types of scientific writing - Product development justification and specifications; Management advice; Scientific papers/publications; Conference/meeting presentations; Policy documents; Planning documents; Reports and the like.
- Types of audience - The features and characteristics of an audience, including; an audience's professional, social, cultural, ethnic background and physical and academic capabilities; the importance of 'Plain English' written and oral communication.
- Scientific writing techniques - The component parts of scientific documents, including: Aim, Materials, Method, Results, Discussion, Conclusion, References; The required content of each component part; Scientific referencing techniques, including: Bibliographies, Reference Lists, Citations, Footnotes, Quotes, and Acknowledgements; Scientific labelling techniques, including: Graphs, Tables, Diagrams, and Figures; Techniques for documenting results, including: Text, Graphs, Tables, Diagrams, and Figures; Organisational standards for document

REQUIRED SKILLS AND KNOWLEDGE

and presentation production, including: Standard organisational document templates, letterheads, headers, footers, and logos.

- Oral communication techniques - Techniques for communicating to large groups, including; Conference presentations, Speeches; Techniques for communicating to small groups, including: Meeting presentations, Team discussions, planning forums and the like.

- Electronic communication formats - World-wide Web – protocols and practices; Email – protocols and practices; Transfer of information via CD Rom/Floppy Disk; Use of PDF and other secure files.

- Confidentiality considerations - Confidentiality practices to protect the organisation; Confidentiality practices to protect the client; Confidentiality practices to protect providers of information/research cohorts.

T5   Data collection techniques encompassing:

- Data types - Quantitative data, including; empirical, non-parametric, parametric; Qualitative data; Raw; Graphic; Diagrams; Original; Textual; Multimedia; Electronic and the like.

- Data Collection - Data sources; Consultation protocols and practices; Survey methodologies, including; interviews, surveys, chat rooms, focus groups; Literature reviews, including; traditional and web-based; Group facilitation and presentation; Questioning, active listening and clarification; Obstacles to data collection, including; unavailable data, inconsistent data, confidentiality, security; Data limitations.

- Evaluating data quality - Reliability; Accuracy; Clarity; Validity; Contribution to research; Relevance to research objectives.

T6   Data analysis and presentation encompassing:

- Data analysis techniques - Univariate analysis; Multivariate analysis; Decision trees; Genetic Algorithms; Neural Networks; Gap Analysis; Urgency and impact, and the like.

- Data analysis technique selection - Determining the correct analysis technique(s); Determining the correct sequence of analysis techniques; Accommodating influencing factors including research objectives, budget, timeline and quality requirements, data limitations, confidentiality, security and the like.

- Data interpretation - Determining results; determining conclusions; Benchmarking; Quality Assurance, including consideration of accuracy, validity, clarity and the like.

- Data presentation:

  - Determining the correct form of presentation for the audience, including; colleagues, scientific community, marketing and commercialisation specialists, general community, industry, mixed (i.e. conference audience).

  - Forms of documentary presentation, including reports, journal articles, scientific papers, graphs, tables, diagrams, electronic formats; Forms of verbal presentation, including meetings, client briefings, conferences, support of a new concept, need for further research, commercialisation opportunity; Quality

REQUIRED SKILLS AND KNOWLEDGE

Assurance, including accuracy, validity, clarity of information presented.

T7   Product development and trials encompassing:

- Identifying client and managerial requirements for production and trials - Required outcome(s); Key performance indicators; Timelines; Financing; Resources; Quality Assurance and the like.
- Influencing factors - Internal business goals and strategies; Technical specifications (chemical, mechanical, environmental); Industrial considerations; Regulatory considerations; Legislative considerations; Intellectual Property; Australian & International Standards; Codes of Practice; Market requirements; Resource requirements, including personnel tools and equipment (principles and practices), materials, finances and the like.
- Product development arrangements - Licensing agreements; Joint Ventures; Sole Ventures and the like.
- Relevant Documentation - Codes of Practice; Standard Operating Procedures; Product formulation documentation; Material safety data sheets (MSDSs); Equipment and Quality manuals; Calibration and maintenance schedules; Enterprise recording and reporting procedures; Material, equipment and product specifications and the like.
- Development & trial processes - Proof of concept; Trialing concepts; Definitions/Specifications; Types of development and trial processes, including Phase A product and trial, Phase B product and trial, User trials, Ergonomics and Usability testing; Pre-defined acceptance criteria, confidence limits; Data collection & analysis; Production; Evaluation and recommendation formulation.

T8   Intellectual property concepts encompassing:

- Intellectual Property and Australian Law - The place of Intellectual Property in Australian Law; Past cases and outcomes; Necessary considerations and the like.
- The nature of Intellectual Property - What is Intellectual Property? What isn't Intellectual Property?; Why is Intellectual Property relevant?; What can Intellectual Property rights do?; What can't Intellectual Property rights do?
- Intellectual Property Rights - Patents; Copyright; Designs; Confidential Information; Other specialty rights and the like.
- Managing Intellectual Property - Identifying Intellectual Property; Deciding what to protect; Strategies for managing Intellectual Property; How can Intellectual Property rights work together?; Intellectual Property versus time, effort, finances; Sources of Assistance, including Publications, Intellectual Property professionals, Lawyers, Business Advisors, Marketing consultants and the like.
- Enforcement of Intellectual Property - The enforcement process; The role of lawyers; Resolution.
- The changing face of Intellectual Property - Development of Intellectual Property Right Laws; Changes to Intellectual Property Right laws; Extensions of Intellectual Property Rights into non-traditional areas, including cultural, property arenas; The global marketplace and the like.

REQUIRED SKILLS AND KNOWLEDGE

T9   Occupational Health and Safety principles and fundamentals encompassing:

- underlying principles of OH&S
- general aims and objectives of the relevant state or territory legislation relating to OH&S.
- employer and employee responsibilities, rights and obligations.
- major functions of safety committees and representatives.
- powers given to Occupational Health and Safety Inspectors
- housekeeping and potential hazards in relation to improper housekeeping
- selecting appropriate personal protective equipment (PPE) given hazardous situations

T10   The work environment encompassing:

- typical hazards associated with a range of work environments
- procedures used to control the risks associated with these hazards
- principles of risk assessment / management and state the purpose of each.
- hierarchy of OH&S hazard control measures.
- required documentation for risk assessment.
- commonly used workplace safety signs.
- workplace emergencies that pose a threat to health and safety and suitable procedure for an emergency workplace evacuation.
- appropriate fire extinguisher for a given type of fire.
- requirements for the location, mounting and maintenance of portable fire extinguishers.
- basic process of fighting a fire.
- safe premises, buildings and security are important in an industrial setting and the consequences of non- compliance with these.
- standard work procedure is and why they are required in some circumstances.

T11   Manual Handling encompassing:

- typical manual handling injuries and the effect they can have on lifestyle
- situations that may cause manual handling injuries
- correct procedures for lifting and carrying to prevent manual handling injuries
- Chemicals in the workplace encompassing:
- hazardous substances and dangerous goods.
- Classification of chemicals as hazardous substances and/or dangerous goods
- requirements for labelling of chemicals in the workplace
- safe storage procedures for chemicals
- purpose of and interpretation of material safety data sheet (MSDS)

T12   Working at heights encompassing:

- dangers associated with working on ladders and scaffolds
- identification of work area as a height risk and use appropriate safety equipment to

REQUIRED SKILLS AND KNOWLEDGE

prevent a fall

- selecting an appropriate ladder for a given situation and perform a safety check before use
- precautions that should be taken when ascending and working off a ladder
- precautions that should be taken when working on and around a scaffold and elevated platforms.

T13   Confined spaces encompassing:

- hazards associated with working in a confined space
- identifying workplace situations that could be classified as a confined space
- control measures for working in a designated confined space

T14   Physical and psychological hazards encompassing:

- short and long term effects of excessive noise and techniques to avoid damage to hearing due to excessive noise
- effects of vibration on the human body and work practices to protect against vibration
- effects of thermal stress on the human body and work practices to protect against thermal stress
- effects of ultraviolet (UV) radiation on the human body and work practices to protect against UV radiation.
- dangers associated with laser operated equipment and tools and suitable protective measures to overcome the danger.
- occupational overuse syndrome, state examples of how it occurs and describe means to overcome it
- factors that cause stress in the workplace, symptoms of a person suffering from stress and personal stress management techniques
- detrimental effects and dangers of drug and alcohol use in the workplace

T15   Working safely with electricity encompassing:

- effects of electric shock on the human body
- common causes of electrical accidents
- precautions that can minimise the chance of electric shock (earthing, extra low voltage, fuses, circuit breakers and residual current devices – RCDs)
- protection offered by a residual current device (RCD)
- need for ensuring the (safe) isolation of an electrical supply
- appropriate method of removing an electric shock victim from a live electrical situation

T16   Life support - CPR in the workplace encompassing:

- First Aid.
- responsibilities of the First Aider.
- priorities of first aid management for any accident or injury.
- procedures required at an accident scene.

REQUIRED SKILLS AND KNOWLEDGE

- legal and ethical issues, which may impact on the management of care.
- 'Duty of Care'.
- examination of a casualty for injuries.
- effect of cardio pulmonary arrest on the body.
- Managing simulated conditions of: airway obstruction; respiratory arrest and cardio pulmonary arrest,
- single and two-person cardio pulmonary resuscitation (CPR).
- signs and symptoms of an altered level of consciousness
- management of simulation of a casualty with an altered level of consciousness.
- signs and symptoms of shock.
- management of simulation of a casualty in shock

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit and must be read in conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.
The Evidence Guide forms an integral part of this unit. It shall be used in conjunction with all components parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment	**9.1**) Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. In some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy. Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed. The critical safety issues inherent in working with electricity,

EVIDENCE GUIDE

electrical equipment, gas or any other hazardous substance/material present a challenge for those determining competence. Sources of evidence need to be 'rich' in nature so as to minimise error in judgment.

Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

Critical aspects of evidence required to demonstrate competency in this unit	**9**.2) Before the critical aspects of evidence are considered all prerequisites shall be met. Evidence for competence in this unit shall be considered holistically. Each Element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEE07'. Evidence shall also comprise: • A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:

EVIDENCE GUIDE

- Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the performance criteria and range statement
- Apply sustainable energy principles and practices as specified in the performance criteria and range statement
- Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
- Demonstrate an appropriate level of skills enabling employment
- Conduct work observing the relevant Anti Discrimination legislation, regulations, polices and workplace procedures

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:

  - Contribute to the development of a product/application/service as described in 8) and including:

    A   Demonstrating consistent performance for each Element of the unit

    B   Meeting the performance criteria associated with each Element of the unit by employing techniques, procedures, information and resources available in the workplace

    C   Demonstrating an understanding of the Underpinning Knowledge and Skills identified in the section of this unit titled 'Essential knowledge and associated skills'.

Note:
Successful completion of relevant vendor training may be used to contribute to evidence on which competency is deemed. In these cases the alignment of outcomes of vendor training with performance criteria and critical aspects of evidence shall be clearly identified.

EVIDENCE GUIDE

Context of and specific resources for assessment	**9.3**) This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

These should be part of the formal learning/assessment environment.
Note:
Where simulation is considered a suitable strategy for assessment, conditions must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to contributing to the development of a product/application/service.

Method of assessment	**9.4**) This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'. Note: Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires assessment in a structured environment which is intended primarily for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.
Concurrent assessment and relationship with other units	**9.5**) For optimisation of training and assessment effort, competency development in this unit may be arranged concurrently with unit:

BSXFM1504A	Participate in, lead and facilitate work teams
UEENEER001B	Contribute to the planning of a research project
UEENEER002B	Conduct to the conduct of a research project
UEENEER004B	Contribute to the trial of a

EVIDENCE GUIDE

	product/application/service
UEENEER005B	Contribute to intellectual property management
BSBCMN306A	Produce business documents
BSBSBM405A	Monitor and manage business operations
UEENEER006B	Contribute to the commercialisation of a product/application/service
PMBQUAL309A	Solve problems using 'quality tools'

Range Statement

RANGE STATEMENT

8) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit describes work conducted by technical personnel who contribute to the development of a product/application/service.
Product/application/service design and development briefs may be provided by external and/or internal clients.
Typically the work covered by this unit is performed by high-level technicians, working as part of a product/application/service research and/or design, development and implementation team. This generally involves working closely with a range of management and production/operations personnel and requires balancing the business and technical sides of the product/application/service being developed.
This unit does not require knowledge of industry sectors, equipment and/or materials other than that in which the learner works. It assumes an understanding of the operation of all relevant business processes but does not necessarily require them to be the responsibility of the learner.
At this level, personnel should be able to interpret and explain sections/types of legislation, codes, regulations, Australian Standards and Intellectual Property rights that apply to the subject matter to be researched.
This unit should be demonstrated in accordance with the organisation's:

- Occupational Health and Safety and Workplace Safety policies and procedures
- Goals, values, objectives, plans, systems and processes
- Business and performance plans
- Ethical standards
- Client service standards
- Quality and continuous improvement processes and standards
- Resources, which may be subject to negotiation

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

Unit Sector(s)

Not Applicable

Competency Field

2.2) Literacy and numeracy skills

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'.

Reading   5   Writing   5   Numeracy   5

2.2) Literacy and numeracy skills

Competency Field   **5**)

                              Research