DPEFPE619: Apply the Fundamentals of Professional Engineering Practice

UNIT CODE		**DPEFPE619**	
UNIT TITLE		**Apply the fundamentals of professional engineering practice**	
APPLICATION		This unit describes the performance outcomes, skills and knowledge required to function in accordance with Engineers Australia's Stage 1 competency standards for Engineering Associate. It requires a thorough understanding of Engineering related issues as outlined under the Elements and Performance Criteria below. The unit applies to all students studying towards an Engineering Institute of Technology (EIT) Advanced Diploma which is accredited with Engineers Australia. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.	
ELEMENTS		**PERFORMANCE CRITERIA**	
Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Utilise self-management techniques	1.1	Create a personal career plan and online portfolio of skills
		1.2	Apply time management techniques
		1.3	Apply formal decision-making methodology
		1.4	Compare various leadership styles
		1.5	Identify the concept of Situational Leadership
2	Address key project management issues	2.1	Execute a group project as per PMBOK guidelines
		2.2	Apply software tools to produce project schedules (PERT/Gantt)
		2.3	Identify the basic risk issues addressed in Risk Management standard AS/NZS ISO 31000
		2.4	Perform qualitative and quantitative risk assessments
3	Communicate in a technical environment	3.1	Apply the basics of interpersonal communication
		3.2	Create and present PowerPoint slideshows
		3.3	Apply mastery of basic technical writing skills
		3.4	Draw up a functional specification
		3.5	Prepare a technical report
		3.6	Operate within a group to execute a project
4	Determine professional and global requirements for engineers	4.1	Identify the do's and don'ts of professional conduct
		4.2	Identify ethical issues

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		4.3	Determine the responsibilities of the Engineering Associate
		4.4	Identify global environmental issues
		4.5	Apply the concepts of sustainable development and design
		4.6	Identify engineering standards and codes of practice
		4.7	Apply basic contract law to selected case studies
5	Apply the basics of project finance	5.1	Estimate the cost of a given project
		5.2	Create a spreadsheet-based cash flow model for a project
		5.3	Calculate discounted cash flow for a project
		5.4	Determine the merits of a proposed project in terms of Net Present Value (NPV) and Internal Rate of Return (IRR)
6	Identify workplace health and safety-related issues	6.1	Identify Occupational Health and Safety regulations
		6.2	Outline the procedure for performing workplace health and safety assessments
FOUNDATION SKILLS Foundation skills essential for performance in this unit are explicit in the performance criteria of this unit of competency.			
UNIT MAPPING INFORMATION No equivalent unit.			

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TITLE	Assessment requirements for DPEFPE619 - Apply the fundamentals of professional engineering practice

PERFORMANCE EVIDENCE	To achieve competency in this unit a person must satisfy the requirements of the elements and performance criteria included in the unit. The person must also:
	• Apply project management skills including:
	  ○ Planning work
	  ○ Resource management and coordination
	  ○ Quality control
	  ○ Communication with stakeholders
	  ○ Time management
	  ▪ Project schedule
	  ▪ Network diagrams
	  ▪ Work breakdown structures (WBS)
	  ○ Risk management
	• Analyse strengths, weaknesses, opportunities, and threats (SWOT)
	• Develop strategies for the management of own career
	• Interact in a team environment on technical and project related situations
	• Prepare structures and strategies for workplace presentations
	• Monitor budgets
	• Plan and prepare projects using project management principles
	Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

KNOWLEDGE EVIDENCE	To achieve competency in this unit a person must satisfy the requirements of the elements and performance criteria included in the unit. This includes knowledge of: • Relevant legislation, industry standards, codes of practice, regulations, and policy • Leadership styles and principles • Identify networks relevant to professional practice • Own career training options and goals • Techniques to research career options • Organisational documentation, policies, and procedures • Contractual obligations • Stakeholder management • Project management planning principles, techniques, and concepts • Project scheduling • Explain industry and organisational policy and procedures on ethical behaviour • Explain principles, practices, tool, and techniques available for sustainable design, development, and management • Budget and cashflow management • Professional practice awareness

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	• Professional network and associations within industry • Workplace safety requirements • Technologies applicable to and found within the workplace
ASSESSMENT CONDITIONS	**Assessment conditions:** All assessment must be completed in accordance with work health and safety standards. When assessments are conducted remotely, invigilation software must be used to ensure authenticity of work completed. Model answers or marking guides must be provided for all assessments to ensure reliability of assessment judgements when marking is undertaken by different assessors. Assessors must gather a range of evidence that is valid, sufficient, authentic, and current. Questioning techniques must not require language, literacy and numeracy skills beyond those required in this module. The candidate must have access to all tools, equipment, materials, and documentation required. **Assessor Requirements:** Assessment must be conducted only by persons who have: • vocational competencies at least to the level being delivered and assessed • current industry skills directly relevant to the training and assessment being provided • current knowledge and skills in vocational training and learning that informs their training and assessment • the training and assessment credential specified in Item 2 or Item 3 of Schedule 1 of the Standards for Registered Training Organisations (RTOs) 2015 (as amended 2019) or if conducting assessments only, have the credential specified in Items 2, or 3, or 5 of that Schedule. • demonstrated, through their RTO, how they are continuing to undertake professional development in the fields of the knowledge and practice of vocational training, learning and assessment including competency-based training and assessment. The RTO must also ensure that trainers and assessors keep their industry knowledge up to date through ongoing professional development. The RTO must take appropriate steps, as an ongoing procedure, to verify information about trainer and assessor's qualifications.