



**Australian Government**

# **UEEIC0010 Develop and test code for microcontroller devices**

**Release: 1**

# UEEIC0010 Develop and test code for microcontroller devices

## Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

## Application

This unit involves the skills and knowledge required to develop and test structured programming instructions for microcontroller devices at a fundamental level.

It includes microcontroller device code architecture and programming fundamentals, writing and testing specified instructions, and documenting development activities.

In this unit, the term ‘micro’ refers to microcontrollers, however, competency in the unit can be achieved using microprocessors.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## Pre-requisite Unit

Not applicable

## Competency Field

Instrumentation & Control

## Unit Sector

Electrotechnology

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### 1 Identify microcontroller device code to specifications

### PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1 Work health and safety (WHS)/occupational health and safety (OHS) processes and workplace procedures for a given work area are obtained and applied
- 1.2 Hazards are identified, WHS/OHS risks assessed, and

control measures and workplace procedures are implemented in preparation for work

- 1.3** Scope of specification to be developed is determined from job performance requirements and in consultation with relevant person/s
  - 1.4** Activities are planned to meet scheduled timelines in consultation with person/s involved on the worksite
  - 1.5** Appropriate development kit and software are selected in accordance with specified requirements and required performance standards
  - 1.6** Strategies are implemented to ensure programming is in accordance with relevant industry standards/protocols
- 2 Develop microcontroller device code to specifications**
- 2.1** WHS/OHS risk control measures and workplace procedures for carrying out work are followed
  - 2.2** Microcontroller functions and features are applied to developing microcontroller device code specifications
  - 2.3** Structure and syntax are applied to developing program specification for target microcontroller function
  - 2.4** Key features of the assembler programming language are identified and applied to develop and test microcontroller device solutions
  - 2.5** Approaches to issues/problems are analysed to provide most effective solutions
  - 2.6** Quality of work is monitored in accordance with performance agreement/specification and/or workplace procedures or relevant industry standards
- 3 Test and document microcontroller device code to the required application**
- 3.1** Testing workplace procedures are developed to analyse code developed
  - 3.2** Problems, faults and bugs are identified and rectified to ensure specification in the creation of the code is met
  - 3.3** Intermediate and final work reports are written in accordance with relevant industry standards and presented to appropriate person/s

## Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Developing and testing code for microcontroller devices must include at least three of the following:

- selecting an appropriate micro for a given task
- setting up and using basic input/output (I/O) functions
- using assembler/simulator software packages to debug program
- finding system fault/s

## Unit Mapping Information

This unit replaces and is equivalent to UEENEEI156A Develop and test code for microcontroller devices.

## Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>