



Australian Government

**Assessment Requirements for ICTTEN813
Produce engineering solutions using
numerical computations and simulation**

Release: 1

Assessment Requirements for ICTTEN813 Produce engineering solutions using numerical computations and simulation

Modification History

| Release | Comments |
|-----------|--|
| Release 1 | This version first released with ICT Information and Communications Technology Training Package Version 2.0. |

Performance Evidence

Evidence of ability to:

- solve a range of complex mathematical functions related to telecommunications engineering
- use software systems to produce simulations of mathematical solutions
- analyse results of software simulations
- design telecommunications systems using software simulations
- document and present software solutions for engineering problems.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- analyse and manipulate functions using symbolic and numerical software, including operations of entering and manipulating polynomials in suitable software and then substitution of values and graphing
- analyse and manipulate matrices and determinants, numerically with and without symbolic and numerical software
- design and debug programs using algorithmic control structures and output results to the screen, a graph and a file
- analyse and manipulate complex numbers numerically and with symbolic software
- determine and manipulate equations using advanced calculus operations of differentiation and integration numerically and with symbolic software
- determine and manipulate equations of the type called ordinary differential equations (ODE) met in telecommunications engineering applications numerically and with symbolic software
- determine and manipulate Laplace transforms met in telecommunications engineering applications numerically and with symbolic software

- design a simulation control system and simulate queues using software.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances should be typical of those experienced in the telecommunications networks engineering field of work and include access to:

- networked computers
- simulation software
- relevant documentation
- a range of industry scenarios or workplace examples.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>