



**Australian Government**

# **Assessment Requirements for FBPTEC4004**

## **Apply basic process engineering principles to food processing**

**Release: 1**

# Assessment Requirements for FBPTEC4004 Apply basic process engineering principles to food processing

## Modification History

| Release   | Comments                                                                                           |
|-----------|----------------------------------------------------------------------------------------------------|
| Release 1 | This version released with the FBP Food, Beverage and Pharmaceutical Training Package Version 2.0. |

## Performance Evidence

An individual demonstrating competency in this unit must satisfy all of the elements and performance criteria of this unit.

There must be evidence that the individual has effectively applied basic process engineering principles in a food processing environment on at least one occasion, including:

- mapping a production process and applying process mapping protocols and symbols used in the workplace to describe a production process and its operating parameters
- applying engineering principles to a food production context, including:
  - fluid transfer
  - heat transfer
  - evaporation
  - drying
- performing calculations for engineering solutions, including performance and yield.

## Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- the basic operating features and components of pumps commonly used and typical applications, including:
  - rotodynamic (centrifugal) pumps
  - positive displacement pumps, including reciprocating piston pumps, rotary pumps (including gear and lobe pumps), screw pumps, eccentric rotor pumps (including progressive cavity or mono pumps) and flexible vane pumps
- related components of the pumping system, including valves, taps and pipework and, where required, Australian Standards and workplace protocols for indicating materials carried by pipework

- features in the pumping system design that affect pumping efficiencies, including length of pipework, number and placement of valves and fittings, height of inlet and discharge points, internal surface and diameter of the pipe
- the following terms and how they are applied in the food processing industry:
  - pressure and pressure drop
  - velocity
  - head
- equipment components of a drying process
- the effects that the drying process has on food
- equipment components of an evaporation process
- the effects the evaporation process has on food
- heat transfer requirements and equipment used in a production process
- typical tests carried out to determine process outcomes on material/product
- operational and safety features of pumps and heat transfer equipment
- inspections required to identify signs of faulty performance and/or wear
- main types of sensors used in food processing to provide input data to control systems, and how these sensors operate.

## Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
  - skills must be demonstrated in a workplace setting or an environment that accurately represents a real food processing workplace
- resources, equipment and materials:
  - production process equipment for fluid transfer, heat transfer, evaporation and drying
  - tests used to report relevant product/process information and recorded results
  - methods and related software systems for collecting data and performing calculations
- specifications:
  - manufacturers' advice and operating procedures.

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=78b15323-cd38-483e-aad7-1159b570a5c4>