

1. Module details**Module name****Beverage Dispensers****Module duration**

It is anticipated that students will achieve the competencies specified in 35 to 40 hours.

Module code

NR20.1

Discipline code

0703620

2. Module purpose

This module aims to provide students with knowledge and skills for describing constructional component detail and operational characteristics, together with the servicing and maintenance procedures of the different types of hotel/beverage refrigeration equipment.

3. Prerequisites

Refrigeration Piping Equipment (Installation) (NR11)

Systems Control (NR12.1)

4. Relationship to competency standards

This module provides some of the knowledge and skills underpinning competence in the following standards:

Electrical Contracting Industry Award Standards Refrigeration. Stream Units; 5.2, 5.4, 5.5, 5.6, 5.7, 6.2, 7.3 8.3, 9,3.

5. Content

1. Types of construction
 - Hotel/club dispensing
 - Balanced beer dispensing
2. Components and features
 - Operating principles
 - Condensing units
 - Evaporators control
 - Refrigerant control
 - Safety features
 - Hygiene awareness
3. Layout and installation
 - Location of equipment
 - Installation considerations
4. System and control method
 - Operation - conditions
 - Thermostat, pressure controls and evaporator pressure regulating valve, solenoid valves
 - Electrical and piping circuits
5. Commission
 - Determine design operating conditions
 - Check and adjust controls

6. Assessment strategy	<p>6. Servicing</p> <ul style="list-style-type: none"> - Normal and abnormal operation - Fault finding charts - maintenance charts - Repair and replacement of parts - Maintenance
Assessment methods	<p>The assessment of this module is holistic in nature and requires the demonstration of the knowledge and skill identified in the module content, and the integration of that knowledge with those skills. To be successful in this module, the student must show evidence of achievement of the module purpose. Additionally, graded modules allow the student to demonstrate greater depth and/or breadth of achievement. The assessment scheme is designed to assess essential knowledge and skills in a variety of ways throughout the modules assessment events.</p> <p>Written Tests.</p> <p>Practical Tests.</p>
Conditions of assessment	<p>Normally learning and assessment will be conducted in a workshop/classroom environment.</p>
7. Learning outcome details	<p>Learning outcome 1 Name and describe the different types of Beverage Dispensing equipment and their construction.</p> <p>Assessment criteria</p> <ol style="list-style-type: none"> 1.1 Name the different types of beverage dispensing systems. 1.2 Describe the general construction of various types of equipment. <p>Learning outcome 2 List and describe the operating principles of the components used to construct the different beverage dispensing systems, together with their safety features.</p> <p>Assessment criteria</p> <ol style="list-style-type: none"> 2.1 Describe the various operating principles for each component. 2.2 List the safety features of components including pressure relief by-pass valve for instantaneous beverage coolers. <p>Learning outcome 3 Describe the different requirements for the correct location and installation procedures for beverage dispensing equipment.</p> <p>Assessment criteria</p> <ol style="list-style-type: none"> 3.1 Describe considerations for the location and the installation of beverage dispensing equipment.

Learning outcome 4	Determine with the aid of electrical and piping circuits the operating conditions and their control methods.
Assessment criteria	<p>4.1 Interpret operating conditions by completing electrical schematic diagrams and piping layouts of the different beverage dispensing equipment.</p> <p>4.2 Identify and describe the different types of controls used to maintain the design operating conditions of beverage dispensing equipment.</p>
Learning outcome 5	Establish and perform correct procedures for commissioning, servicing and repairs. Develop fault and maintenance charts for each type of dispensing system.
Assessment criteria	<p>5.1 Demonstrate the practical skills required to commission and set/adjust, cycling /safety controls used with beverage dispensing equipment.</p> <p>5.2 Demonstrate the practical skills to perform routine repairs, replacement of components on the different beverage dispensing equipment</p> <p>5.3 Construct fault finding /maintenance charts</p>
8. Delivery of the module	<p>Delivery strategy</p> <p>Delivery strategies must be suitable for both theoretical and/or practical learning and module purpose. It is recommended that learning and assessment be facilitated in a holistic manner, which may require a learning outcome sequence other than that indicated in the body of this module. Also an integrated theory/practice approach should be used where students learn by practical exercises and workshop reports.</p>
Resource requirements	<p>Appropriate practical equipment, service manuals, schematic diagrams and test equipment.</p> <p>Useful references include: Boyle, G. Australian Refrigeration and air conditioning Volumes I & II, W.A.Trust Publication. Dossat, R., Principles of Refrigeration, Second Edition, SI Version, John Wiley and Sons, New York. Latest Edition. ASHRAE Handbook, Refrigeration Systems and Application., SI Version, ASHRAE, Atlanta.</p>
Occupational health and safety requirements	A safe and healthy environment will be provided for students in regards to classroom and workshop safety.

