



Australian Government

Department of Education, Employment and Workplace Relations

CUFBRT501A Collaborate on the design of broadcasting facilities

Revision Number: 1

CUFBRT501A Collaborate on the design of broadcasting facilities

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge needed to collaborate on the design of television or radio broadcasting facilities. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement.
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Application of the Unit

Application of the unit	Broadcast engineers or senior broadcast technologists apply the skills and knowledge described in this unit, which covers the design of both television and radio facilities. They are responsible for working with clients to determine the best way of designing facilities that meet current needs and, wherever possible, anticipate future needs. In addition to technical knowledge, people in this role require highly developed conceptual and planning skills. They must be good communicators, as effective liaison and negotiation with clients is essential. Employment could be on a contract basis or with companies that specialise in the design and installation of broadcasting facilities. Note: To meet the requirements of this unit, candidates need to demonstrate competency in the design of facilities for either television or radio. The Required Skills and Knowledge section should be tailored accordingly.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	CUFBRT402A Maintain broadcasting facilities and equipment	

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Clarify design requirements	1. In consultation with relevant personnel, confirm overall objectives for proposed broadcasting facilities 2. Identify factors that may have an impact on how facilities are designed, including strategies for anticipating future needs 3. Canvass the market for complete solutions that could meet objectives 4. Research the range of equipment available and assess their suitability to meet requirements and their compatibility with existing systems or infrastructure if applicable 5. Discuss the range of possible solutions with clients and other relevant personnel and reach agreement on preferred approach 6. Document agreed approach and obtain sign-off from relevant personnel to proceed with detailed design specifications
Collaborate on determining design approach	7. In collaboration with relevant personnel, generate design options that are realistic in economic, user, service, timing and network integrity terms 8. Provide advice to clients on capital equipment purchases 9. Evaluate options and select the one that best meets project objectives, taking into account available budget 10. Discuss selected option with client and other relevant personnel and amend as required to incorporate client feedback 11. Prepare information, diagrams and equipment specifications to support agreed design option 12. Discuss design brief with personnel who will be involved in implementation and incorporate their ideas into overall approach
Finalise designs	13. Ensure that proposed activity complies with relevant regulatory and industry standards 14. Prepare design plans that specify work, equipment, personnel and materials required, as well as arrangements for contractors and equipment purchase or hire 15. Prepare detailed drawings and specifications to support design plans 16. Prepare documentation relating to installation/ modification, testing and ongoing operations and

ELEMENT	PERFORMANCE CRITERIA
	maintenance, and attach to design plans 17. Discuss and confirm additional requirements or modifications to design plans with relevant personnel 18. Obtain final sign-off on design plans from clients 19. Evaluate process of developing design plans, including own role in the process, and note areas for future improvement
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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication, teamwork and literacy skills sufficient to:
 - interpret information from system drawings, equipment specifications and technical handbooks
 - liaise effectively with customers/clients, including ability to communicate technical terminology in plain English
 - prepare detailed design documentation and specifications in relation to broadcasting facilities
 - present design ideas for discussion and feedback from clients and team members
 - participate in negotiations about design solutions with clients and team members
- planning and problem solving skills sufficient to:
 - research equipment and other options relevant to the design of broadcasting facilities and evaluate their suitability for specified design projects
 - identify the benefits, weaknesses and implications of different design solutions
 - plan for contingencies in the context of designing broadcasting facilities
 - propose design and installation solutions that are practicable and meet technical requirements
- initiative and enterprise in the context of:
 - generating innovative ideas for the design of broadcasting facilities that meet or exceed client expectations
 - thinking laterally when developing concepts
 - maintaining design integrity
 - taking aesthetic and ergonomic considerations into account when designing broadcasting facilities
- numeracy skills sufficient to:
 - take detailed measurements when preparing design documentation
 - interpret budgets and prepare costings
- technical skills sufficient to:
 - produce technical drawings to support design concepts and plans
 - use standard word processing, spreadsheet, databases and presentation software applications
- self-management skills sufficient to:
 - prioritise work tasks
 - meet deadlines

REQUIRED SKILLS AND KNOWLEDGE

- seek expert assistance as required

Required knowledge

- industry knowledge, including:
 - structure of the broadcasting industry
 - roles and responsibilities of personnel and contractors in the broadcasting industry
 - impact of technological changes on design, installation and maintenance of broadcasting equipment and facilities
 - correct terminology, e.g. symbols, terminology and conventions used for electrical, mechanical and electronic drawings and specifications
 - regulatory and industry standards relevant to field of work (see range statement for examples)
 - product knowledge, e.g. manufacturer standards and specifications
 - sources of advice, information, and technical support
 - issues and challenges that arise in the context of designing broadcasting facilities
- television standards, e.g. PAL, NTSC, SECAM, digital
- formats and techniques for documenting the design of broadcasting facilities, including the level of detail required
- principles and techniques of design in relation to broadcasting facilities
- familiarity with current engineering and construction processes used to install broadcasting facilities
- basic understanding of network operations and transmission facilities, sufficient to ensure that design plans take these factors into account
- OHS legislation and regulations as they relate to the design and safe installation of broadcasting facilities
- copyright legislation and regulations in relation to the protection of designs

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the following is essential:

- collaborative development of design plans for broadcasting facilities that:
 - meet client requirements
 - take account of budgetary and resource constraints
 - demonstrate attention to detail
- knowledge of the regulatory environment in relation to the design and installation of broadcasting facilities
- effective verbal and written communication skills
- knowledge and application of research techniques in relation to designing and planning the installation of broadcasting facilities
- collaborative approach to work.

Context of and specific resources for assessment

Assessment must ensure:

- practical demonstration of skills through the design of broadcasting facilities for at least two projects/clients
- access to enterprises/organisations that require the design of broadcasting facilities
- access to appropriate learning and assessment support when required
- use of culturally appropriate processes and techniques appropriate to the language and literacy capacity of learners and the work being performed.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- direct questioning combined with review of portfolios of evidence and third-party workplace reports of on-the-job performance
- evaluation of designs for broadcasting facilities documented by the candidate and their quality in

EVIDENCE GUIDE	
	terms of meeting project requirements • written or verbal questioning to test knowledge as listed in the required skills and knowledge section of this unit • case studies to assess ability to develop designs for different types of broadcasting facilities.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • BSBDES401A Generate design solutions • BSBDES502A Establish, negotiate and refine a design brief • BSBWRT401A Write complex documents.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Relevant personnel may include:

- architect
- broadcast engineer
- building personnel
- client
- designers
- equipment operators
- head of department
- station manager
- sub contracted personnel
- supervisor
- technical director
- other technical/specialist personnel.

Factors may include:

- aesthetics
- availability of personnel
- availability of resources
- available budget
- clients' future needs
- disruption to broadcast services during installation
- environmental considerations
- ergonomics
- functionality
- installation environment
- legislative/regulatory requirements, e.g.:
 - OHS considerations
 - building regulations
- ongoing maintenance requirements
- profile of people who will be using the facilities
- technical considerations, e.g.:
 - network
 - existing equipment/infrastructure

RANGE STATEMENT	
	timelines.
Equipment may include:	- communication equipment, e.g. ISDN, RF links - display devices, e.g. monitor - line equipment, e.g. audio/video DAs - production video and audio equipment, e.g. sound/vision mixer - record/replay machines, e.g. cameras, audio recorders.
Systems may include:	- analogue - computer/IT - digital.
Relevant regulatory and industry standards may include:	- ACMA technical standards - Australian and international standards - Australian building codes and regulations - confined spaces regulations - copyright - environmental legislation - fire regulations - heritage legislation - industry codes of practice - noise abatement - OHS - trade practices legislation.
Drawings and specifications may include:	- bay layouts - detailed component drawings - equipment schematics - general assembly drawings - installation drawings - modification drawings - program production drawings - room/building layouts - sub-assembly drawings - systems block diagrams - technical manuals - wiring/circuit diagrams.

Unit Sector(s)

Unit sector	
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Competency field

Competency field	Media and entertainment production - broadcast technology
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Co-requisite units

Co-requisite units		