Broad Field 7
Architecture and Building

Architecture and Building is the study of the art, science and techniques involved in designing, constructing, adapting and maintaining public, commercial, industrial and residential structures. It involves the study of the art and science of designing and adapting the surrounds of buildings and other external environments.

The theoretical content of Broad Field 7 Architecture and Building includes:

- aesthetics and space dynamics
- design and drawing
- building science
- building economics
- structural engineering
- building techniques and technologies
- construction management

The main purpose of this broad field of study is to provide an understanding of integrating structural and aesthetic elements to buildings, and construction methods, techniques and materials.

Fields of study in this broad field are classified into the following narrow fields:

71 Building Design
72 Building Construction
79 Other Architecture and Building

Exclusions:

Engineering is excluded from this broad field as it is sufficiently specialised to form a distinct and separate broad field, Broad Field 6 Engineering.

Naval Architecture is excluded from this broad field as it is more concerned with engineering considerations than aesthetics. It is included in Detailed Field 695 Other Engineering Science.

Urban and Regional Planning is excluded from this broad field as it is more concerned with the social impacts that the built environment has on society than aesthetic considerations. It is included in Detailed Field 499 Other Society and Culture, nec.

Gardening is excluded from this broad field as it is more concerned with the cultivation and maintenance of plants and gardens than designing and planning the built environment. It is included in Detailed Field 821 Horticulture.

Narrow Field 71

Building Design

Building Design is the study of the art and science of planning and designing public, commercial, industrial and residential buildings, and their interiors. It includes the study of planning and designing external environments.

The focus of courses in Building Design is the theories, methods and practice of designing buildings, interiors and landscapes with consideration of the materials used and the inter-relationship between humans and their built environment.

Courses of study aim to develop:

- an understanding of the structural, aesthetic, operational and environmental aspects of building design
- an understanding of the properties of building materials and their uses
- an understanding of building construction technology
- an understanding of the inter-relationship between humans and the built environment
- an understanding of project finance and economics, business and practice management, and related laws and regulations

Fields of study in this narrow field are classified into the following detailed fields:

711 Architecture
712 Interior Design
719 Building Design, nec

711 Architecture

Architecture is the study of the art, science and techniques of building design. It encompasses both utilitarian ends, such as the soundness of the structure, and the functional and economic efficiency of the building, and aesthetic considerations.

Subjects studied include:

Architectural Aesthetics
Architectural Drafting
Architectural Theory and Design
Building Construction
Building Law and Regulations
Building Project Management
Built Form and Culture
Ergonomics
History of Architecture
Specifications Writing

Skills learnt include:

- analysing sites and making appropriate recommendations for development and construction
- preparing detailed scale drawings and specifications for design and construction
- liaising with clients and other professionals on matters of design, cost, timing and feasibility of projects
- monitoring construction to ensure compliance with specifications

Examples of qualifications include:

1 711 Master of Architecture
Master of Architectural Design
2 711 Graduate Diploma of Design Science in Energy Conservative Design
3 711 Bachelor of Arts in Architecture
Bachelor of Architecture
4 711 Diploma of Architecture
5 711 Advanced Certificate in Architectural Drafting
Associate Diploma of Applied Science in Architectural Drafting
Associate Diploma of Architectural Drafting
6 711 Certificate in Architectural Drafting
7 711 Certificate in Architectural Practice

712 Interior Design

Interior Design is the study of the planning, designing and furnishing interior environments with a concern for functionality, practicality, and human needs and requirements.

Subjects studied include:

Colour Theory and Application
Design Theory
Drawing and Drafting
Fabrics, Textiles and Applied Finishes
Furniture Design
History of Design
Industrial Design
Lighting
Manufacturing Technology
Organisation of Space

Skills learnt include:

- formulating design concepts for building interiors
- preparing illustrations, sketches and models to communicate design concepts
- selecting and recommending decorative and functional materials for building interiors
- liaising with clients and others on matters of design, cost, timing and functionality of design concepts

Examples of qualifications include:

1 712 Master of Design in Interior Design
2 712 Graduate Diploma in Interior Design
3 712 Bachelor of Design in Human Environments
Bachelor of Arts in Interior Design
Bachelor of Applied Science in Interior Design
4 712 Diploma of Arts in Interior Design
5 712 Associate Diploma of Arts in Interior Design
Advanced Certificate in Interior Decoration
6 712 Certificate in Interior Design
7 712 Certificate in Interior Decoration
Certificate in Illumination

719 Building Design, nec

Building Design, nec is the study of all Building Design not elsewhere classified in Narrow Field 71 Building Design.

Examples of qualifications include:

1 719 Master of Landscape Architecture
Doctor of Philosophy in Design Communication
2 719 Graduate Diploma in Landscape Architecture
3 719 Bachelor of Arts in Environmental Design
Bachelor of Applied Science in Environmental Design
Bachelor of Applied Science in Landscape Architecture
Bachelor of Landscape Architecture
6 719 Certificate in Landscape Design
7 719 Certificate in Landscape Technology

Narrow Field 72

Building Construction

Building Construction is the study of the science, technology and techniques of assembling, erecting and maintaining public, commercial, industrial and residential structures and their fittings.

The focus of courses in Building Construction is building operations, processes, technologies and techniques.

Courses of study aim to develop:

- an understanding of the functional aspects of construction, planning, development and management of buildings
- an understanding of safe working practices relating to building operations
- an understanding of building law and regulations
- an understanding of the various technologies and technical skills required in the construction and fitting out of buildings
- the ability to examine and interpret building plans and specifications and to organise, cost and complete the tasks required in the construction and maintenance of buildings

Fields of study in this narrow field are classified into the following detailed fields:

721 Building Technology
722 Carpentry and Joinery
723 Bricklaying
724 Painting, Decorating and Signwriting
725 Plastering
726 Plumbing
727 Roof Fixing
728 Floor and Wall Tiling
729 Building Construction, nec

721 Building Technology

Building Technology is the study of the theories, techniques, planning and co-ordination processes required to assemble, construct and maintain structures.

Subjects studied include:

Building Act and Regulations
Building Models
Builder's Contracts and Scheduling
Builder's Plant and Equipment
Construction Technology and Materials
Drawing and Design
Estimating
Specification Writing
Structural Theory and Mechanics
The Historical Development of Building Forms

Skills learnt include:

- analysing architect's designs to prepare preliminary sketches and working drawings
- interpreting building plans, regulations and codes of practice
- preparing tenders, supporting contract bids and variations
- inspecting work and materials for compliance with specifications, regulations and standards
- co-ordinating works programmes for the various trades involved in building construction

Examples of qualifications include:

1 721 Master of Building
Master of Building Science
2 721 Graduate Diploma of Applied Science in Building
3 721 Bachelor of Building
Bachelor of Applied Science in Construction Management
Bachelor of Engineering in Building Engineering
4 721 Diploma of Building

5 721 Associate Diploma in Building Technology
Associate Diploma of Applied Science in Building
Advanced Certificate in Building Technology
7 721 Certificate for Building Technicians

722 Carpentry and Joinery

Carpentry and Joinery is the study of fabricating, assembling, installing, renovating, and repairing doors, frames, formwork and other fittings in buildings.

Subjects studied include:

Floor Construction
Formwork, Framework and Trusses
Hip and Valley Roofing
Planing and Chiselling
Sealing Frames and Roofing
Stair Construction
Tool Maintenance
Wall Framing, Cladding and Lining
Window and Door Joinery
Window Installation
Wood and Other Materials

Skills learnt include:

- determining details of work from plans and specifications
- selecting appropriate timbers and materials
- cutting timber to size using hand or power tools
- assembling and installing timber fixtures and structures
- checking the accuracy of work using square rules and spirit levels

Examples of qualifications include:

6 722 Trade Certificate in Carpentry and Joinery
Trade Certificate in Framework Carpentry
7 722 Pre-Apprenticeship in Carpentry and Joinery
Certificate in Carpentry and Joinery

723 Bricklaying

Bricklaying is the study of laying and joining bricks, stone and building blocks to construct and repair all types of masonry structures, and equipment such as industrial ovens, furnaces, kilns and smelters.

Subjects studied include:

Arch Construction
Bricklaying Techniques
Concrete and Brick Cleaning
Concrete Masonry
Damp Proofing
Fireplace and Chimney Construction
Jointing and Pointing
Mortar and Other Adhesives
Refractory Brickwork
Scaffolding

Skills learnt include:

- spreading mortar over bricks, blocks and stones using trowels, and removing excess mortar once in place
- shaping bricks to fit irregular spaces
- repairing and maintaining brick and related structures and equipment
- checking each row of bricks for vertical and horizontal alignment using plumb lines and string lines
- determining details of work from plans and specifications

Examples of qualifications include:

6 723 Trade Certificate in Bricklaying
Trade Certificate in Tuckpointing
7 723 Pre-Apprenticeship in Bricklaying

Exclusions:

Brickpaving is excluded from this detailed field as it is more concerned with laying paving than the construction or repair of building structures. It is included in Detailed Field 729 Building Construction, nec.

Masonry and Stonemasonry are excluded from this detailed field as they are more concerned with cutting and shaping stone blocks than laying and joining them. They are included in Detailed Field 729 Building Construction, nec.

724 Painting, Decorating and Signwriting

Painting, Decorating and Signwriting is the study of applying paint, varnish, paper, vinyl and fabrics to decorate and protect interior and exterior surfaces. It includes the study of designing and painting signs.

Subjects studied include:

Design and Colour
Gilding
Lettering and Layout
Lining and Stencils
Paints and Wallpapers
Painting and Decorating Techniques
Scaffolding
Signwriting Techniques
Surface Preparation

Skills learnt include:

- designing, marking out and painting signs
- applying papers, vinyls and fabrics to walls
- selecting and mixing paints and adhesives
- preparing surfaces by removing old paint and paper, cleaning and sanding
- determining the type and quantity of materials required
- determining details of work from proposals, sketches or written instructions
- painting walls and other surfaces using brushes, rollers and spray guns

Examples of qualifications include:

5 724 Advanced Certificate in Painting, Decorating and Signwriting
6 724 Trade Certificate in Painting and Decorating
Trade Certificate in Signwriting
Trade Certificate in Graining and Marbling
7 724 Pre-Apprenticeship Certificate in Painting and Decorating
Certificate in Signwriting
Pre-Apprenticeship in Signwriting

725 Plastering

Plastering is the study of fixing fibrous sheets and applying plaster, cement-based and similar materials to ceilings, interior and exterior walls of public, commercial and domestic buildings. It includes the study of making plasterboard and plaster mouldings.

Subjects studied include:

Decorative Finishing
Fibrous Plasterwork
Rendering and Moulding
Scaffolding
Solid Plasterwork
Surface Preparation
Trowelling and Rough Casting

Skills learnt include:

- mixing and applying plaster, and creating decorative textures in finishing coats
- cutting plasterboard and fixing it to walls and ceilings
- smoothing joins, angles and fixing cornices
- manufacturing plasterboard and plaster mouldings

Examples of qualifications include:

6 725 Trade Certificate in Solid Plastering
Trade Certificate in Fibrous Plastering, Wall and Ceiling Fixing
Apprenticeship in Fibrous Plastering

726 Plumbing

Plumbing is the study of designing, installing, maintaining and repairing pipelines, fixtures, fittings and related equipment for water, steam, gas, sewerage and other liquids in residential, public, commercial and industrial establishments.

Subjects studied include:

Drainage
Drawing and Design
Gasfitting
Irrigation Systems
Pipe-joint Techniques and Fittings
Plumbing Materials
Plumbing Regulations and Codes
Properties of Gases and Liquids
Roof Plumbing
Sprinkler Fitting
Waste Disposal

Skills learnt include:

- assembling, installing and connecting pipes to various components, equipment and appliances
- measuring, cutting, threading, bending and joining pipes
- testing and adjusting lines, control mechanisms and sewerage systems
- determining the layout of pipeline systems and materials required from drawings and specifications, and ensuring their compliance with relevant codes and regulations
- locating and marking positions for connections, fixtures, pipes and areas to be excavated

Examples of qualifications include:

5 726 Advanced Certificate in Plumbing
Associate Diploma in Plumbing Services
6 726 Trade Certificate in Sprinkler Fitting
Trade Certificate in Plumbing
Certificate in Plumbing Services Design
Apprenticeship in Plumbing and Gasfitting
7 726 Certificate in Draining
Pre-Apprenticeship in Plumbing

727 Roof Fixing

Roof Fixing is the study of covering structures with roof tiles, shingles and other materials to form a waterproof surface.

Subjects studied include:

Concrete and Clay
Fastening Materials

Flashing and Gutters
Measuring and Cutting
Roofing Claddings
Roof Structure and Design
Scaffolding
Slate, Shingles and Metal Tiles

Skills learnt include:

- aligning and securing starter rows of roofing material, and laying successive overlapping layers
- sizing and cutting roofing materials to fit around vents, chimney edges, ridges and corners
- fixing edge and ridge tiles in mortar and cement
- nailing or stapling roof underlays to roofs
- determining the layout of tiles and materials required from drawings and specifications

Examples of qualifications include:

6 727 Apprenticeship in Roof Slating and Tiling
Trade Certificate in Roof Tiling

728 Floor and Wall Tiling

Floor and Wall Tiling is the study of laying slate, stone, ceramic and other non-resilient tiles on external and internal walls and floors.

Subjects studied include:

Adhesive Fixing
Ceramics
Cleaning and Finishing
Curved Walls and Columns
Expansion Joints
Pools and Baths
Surface Preparation
Tile Cutting
Tiling Returns and Accessories
Vertical Mosaics

Skills learnt include:

- spreading adhesives onto surfaces, setting, positioning and aligning tiles using spirit levels, square rules, plumb lines and straight edges
- cleaning tiles and removing excess grout
- preparing and cleaning surfaces by removing old tiles, grout and adhesives
- examining plans to determine patterning and layout of work
- cutting tiles to fit into corners and around fixtures

Examples of qualifications include:

6 728 Trade Certificate in Floor and Wall Tiling
Trade Certificate in Ceramic Floor and Wall Tiling
Apprenticeship in Tile Laying

Exclusions:

Carpet, Cork, Linoleum and Vinyl Laying are excluded from this detailed field as they are sufficiently specialised to form a distinct and separate detailed field. They are included in Detailed Field 791 Floor Covering.

729 Building Construction, nec

Building Construction, nec is the study of all Building Construction not elsewhere classified in Narrow Field 72 Building Construction.

Examples of qualifications include:

3 729 Bachelor of Applied Science in Building Surveying
4 729 Diploma in Building Surveying
5 729 Associate Diploma of Applied Science in Building Inspection
Associate Diploma of Applied Science in Building Surveying
6 729 Apprenticeship in Stonemasonry
Certificate in Municipal Building Surveying
7 729 Certificate in Scaffolding Construction
Certificate in Scaffolding Inspection
Certificate in Scaffolding
Certificate in Rigging

Narrow Field 79

Other Architecture and Building

Other Architecture and Building is the study of all Architecture and Building not included elsewhere in Broad Field 7 Architecture and Building.

Fields of study in this narrow field are classified into the following detailed fields:

791 Floor Covering
792 Glass Working
793 Quantity Surveying
799 Other Architecture and Building, nec

791 Floor Covering

Floor Covering is the study of measuring and installing carpet, linoleum, vinyl, cork tiles and other soft floor coverings.

Subjects studied include:

Adhesives
Carpet Underlays
Cutting, Shaping and Trimming
Estimating and Costing
Parquetry and Timber Floor Surfacing
Skirting and Extrusions
Smoothedge Naplock
Staircase Techniques
Sub-floor Preparation
Vinyl Welding and Covering

Skills learnt include:

- laying covering materials over floors
- cutting shapes around permanent obstructions, matching adjacent patterns and trimming edges
- fixing underlays of hardboard sheet, rubber or felt
- removing baseboard moulding trims to install edges of coverings
- measuring and marking off areas to determine layout

Examples of qualifications include:

6 791 Trade Certificate in Floor Covering
7 791 Certificate in Floorcovering

Exclusions:

Slate, Stone and Ceramic Tile Laying are excluded from this detailed field as they are sufficiently specialised to form a distinct and separate detailed field. They are included in Detailed Field 728 Floor and Wall Tiling.

792 Glass Working

Glass Working is the study of planning, producing, installing and maintaining glazing.

Subjects studied include:

Bevelling
Estimating and Costing
Glass Joining Techniques
Glazing Techniques
Grinding
Measuring, Fitting and Installing Glass Panes and Mirrors
Safety
Sandblasting
Scoring and Cutting Glass
Sealants
Template Design

Skills learnt include:

- fitting and installing glass panes and mirrors
- assembling pre-fabricated glass units
- scoring glass surfaces using glass cutting tools
- breaking glass along scored lines using notched tools or glass pliers

Examples of qualifications include:

6 792 Trade Certificate in Flat Glass
Trade Certificate in Glazing
Trade Certificate in Glass and Glazing

793 Quantity Surveying

Quantity Surveying is the study of estimating quantities of materials and total costs involved in building and construction.

Subjects studied include:

Building Acts and Regulations
Building Economics
Building Materials
Construction Design and Technology
Cost Control
Costing and Estimation
Quantity Surveying Measurement and Methods
Quantity Surveying Mathematics
Specification Writing
Valuations and Delapidations

Skills learnt include:

- analysing architectural and engineering drawings, specifications and tenders in order to estimate costs at the planning stage of the building process
- preparing bills of quantities, describing the materials, items of work and the quantities required
- advising on costs of alternative construction materials and methods, and on alternative contractual arrangements
- liaising with architects, builders and engineers
- valuing complex structures and buildings

Examples of qualifications include:

1 793 Master of Applied Science in Quantity Surveying
Master of Building in Quantity Surveying
3 793 Bachelor of Applied Science in Quantity Surveying
Bachelor of Construction Economics
4 793 Diploma of Quantity Surveying
5 793 Associate Diploma of Applied Science in Construction Estimating
7 793 Certificate in Construction Estimating

799 Other Architecture and Building, nec

Other Architecture and Building, nec is the study of all Other Architecture and Building not elsewhere classified in Narrow Field 79 Other Architecture and Building.