

University of Pretoria Yearbook 2021

BSc Architecture (12132018)

Department Architecture

Minimum duration of study 3 years

Total credits 390

NQF level 07

Programme information

Architecture entails the design of buildings and the spaces between those buildings. Art and science are employed to create liveable environments, that contribute towards the spiritual and material prosperity of the country. Architects are often innovative, critical thinkers that lead and form part of consultant teams. Although they are employed by organisations involved with development, investment, research, marketing, the industry or even education, many architects prefer to be independent consultants and entrepreneurs.

BScArch is regarded as an exit level that enables the graduate to register as a candidate architectural technologist, and BArchHons as candidate senior architectural technologist, at the South African Council for the Architectural Profession. A architectural technologist is a professional person registered by the SACAP in terms of the Act on the Architectural Profession (Act 44 of 2000). Such practitioners provide assistance in the practices of the disciplines of architecture, interior architecture, landscape architecture and urban design where their responsibilities would be the documentation of projects, project administration and site management.

Students are advised to work in the offices of an architect to gain practical experience during the university recesses and during a year out after completion of the BScArch degree.

A graduate wishing to become a professional architect must apply for, and pursue, a further two years of full-time studies in the professional degree programme. The Master of Architecture (Professional) degree is recognised by the South African Council for the Architectural Profession as qualifying the graduate to register as a candidate professional architect in terms of the Act on the Architectural Profession (Act 44 of 2000).

Admission requirements

- **This is a selection programme. BSc (Architecture) will only be considered as first study choice.**
- The closing date is an administrative admission guideline for non-selection programmes. Once a non-selection programme is full and has reached the institutional targets, then that programme will be closed for further admissions, irrespective of the closing date. However, if the institutional targets have not been met by the closing date, then that programme will remain open for admissions until the institutional targets are met.
- The following persons will be considered for admission: Candidates who are in possession of a certificate that is deemed by the University to be equivalent to the required National Senior Certificate (NSC) with university endorsement; candidates who are graduates from another tertiary institution or have been granted the status of a graduate of such an institution, and candidates who are graduates of another faculty at the University of Pretoria.

- Life Orientation is excluded when calculating the APS.
- Grade 11 results are used for the conditional admission of prospective students.
- A valid qualification with admission to degree studies is required.
- Minimum subject and achievement requirements, as set out below, are required.
- All lectures at the University of Pretoria are presented in English only.

Transferring students

Candidates previously registered at UP or at another university

The faculty's Admissions Committee considers applications of candidates who have already completed the final NSC examination and/or were previously registered at UP or at another university, on grounds of their NSC results as well as academic merit. Candidates who were dismissed from other faculties or universities will not be considered.

Candidates previously registered at a teacher's college or university of technology

The faculty's Admissions Committee considers the application of these candidates on the grounds of their NSC results as well as academic merit.

Qualifications from countries other than South Africa

- Citizens from countries other than South Africa and South African citizens with foreign qualifications must comply with all the other admission requirements and the prerequisites for subjects/modules.
- In addition to meeting the admission requirements, it may be expected from candidates to write the **TOEFL, IELTS or SAT**, if required.
- Candidates must have completed the National Senior Certificate with admission to degree studies or a certificate of conditional exemption on the basis of a candidate's foreign qualifications, the so-called "Immigrant" or "Foreign Conditional Exemption". The only condition for the "Foreign Conditional Exemption" that is accepted is: 'completion of the degree course'. The exemption certificate is obtainable from Universities South Africa (USAf). Detailed information is available on the website at [click here](#).

University of Pretoria website: [click here](#)

Minimum requirements

Achievement level

English Home

Language or

English First

Additional

Language

NSC/IEB	AS Level	Mathematics		Physical Sciences		APS
NSC/IEB	AS Level	NSC/IEB	AS Level	NSC/IEB	AS Level	
5	C	4	D	4	D	27

* Cambridge A level candidates who obtained at least a D in the required subjects, will be considered for admission. Students in the Cambridge system must offer both Physics AND Chemistry with performance at the level specified for NSC Physical Sciences in the table above.

* International Baccalaureate (IB) HL candidates who obtained at least a 4 in the required subjects, will be considered for admission. Students in the IB system must offer both Physics AND Chemistry with performance at the level specified for NSC Physical Sciences in the table above.

Additional requirements

Please Note: Students wishing to transfer to other programmes in the Department of Architecture must obtain written consent from the admissions committee.

Other programme-specific information

Concurrent presentation

In the third year of study Design, Construction, Design communication, Environmental studies and Earth studies must initially be examined in the same year.

The degree is awarded to those students obtaining all the prescribed credits for the programme modules.

Promotion to next study year

A student is promoted to a subsequent year of study after acquiring all the prerequisite module credits of the preceding year of study.

A student is deemed to be in the year of study for which he or she is registered in Design.

If the student is not registered for Design the highest passed year of Design determines the year of study.

Please Note: Students not promoted to the next year of study must obtain the approval of the programme coordinator and the relevant head of department to register for modules in the subsequent year of study. Students must re-apply for admission to the Department of Architecture in instances where:

- i. a student is not promoted to the second year of study;
- ii. a student after repeating any year of study, is not promoted to the following year of study.

Pass with distinction

The degree is conferred with distinction on a student who, at first registration, passes all modules of the final year of study with a weighted average of 75%. The degree must have been completed within the minimum prescribed time and no supplementary/special examinations may have been written.

Curriculum: Year 1

Minimum credits: 124

Fundamental modules

Academic information management 111 (AIM 111)

Module credits 4.00

NQF Level 05

Service modules

Faculty of Engineering, Built Environment and Information Technology
Faculty of Education
Faculty of Economic and Management Sciences
Faculty of Humanities
Faculty of Law
Faculty of Health Sciences
Faculty of Natural and Agricultural Sciences
Faculty of Theology and Religion

Prerequisites No prerequisites.

Contact time 2 lectures per week

Language of tuition Module is presented in English

Department Information Science

Period of presentation Semester 1

Module content

Find, evaluate, process, manage and present information resources for academic purposes using appropriate technology.

Academic information management 121 (AIM 121)

Module credits 4.00

NQF Level 05

Service modules

Faculty of Engineering, Built Environment and Information Technology
Faculty of Education
Faculty of Economic and Management Sciences
Faculty of Humanities
Faculty of Law
Faculty of Health Sciences
Faculty of Natural and Agricultural Sciences
Faculty of Theology and Religion
Faculty of Veterinary Science

Prerequisites No prerequisites.

Contact time 2 lectures per week

Language of tuition Module is presented in English

Department Informatics

Period of presentation Semester 2

Module content

Apply effective search strategies in different technological environments. Demonstrate the ethical and fair use of information resources. Integrate 21st-century communications into the management of academic information.

Academic orientation 112 (UPO 112)

Module credits 0.00

NQF Level 00

Language of tuition Module is presented in English

Department EBIT Deans Office

Period of presentation Year

Core modules

Earth studies 110 (AAL 110)

Module credits 8.00

NQF Level 05

Prerequisites No prerequisites.

Contact time 3 lectures per week

Language of tuition Module is presented in English

Department Architecture

Period of presentation Semester 1

Module content

Introduction to ecosystemic and systems thinking, ecology, natural resources and stress on the environment; social ecological systems and wellbeing; ecological design principles.

Earth studies 120 (AAL 120)

Module credits 8.00

NQF Level 05

Prerequisites No prerequisites.

Contact time 3 lectures per week

Language of tuition Module is presented in English

Department Architecture

Period of presentation Semester 2

Module content

Introduction to natural materials, their basic properties and transformation for application in the built environment.

Construction 111 (KON 111)

Module credits	8.00
NQF Level	05
Prerequisites	No prerequisites.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 1

Module content

The context of architectural technology and the relationships between technology, theory, structure and materials. Drawing conventions. The typical city site. The construction and materials of a single storey dwelling with masonry walls and a pitched roof, from preparation for building work to substructure, retaining walls and floors.

Construction 121 (KON 121)

Module credits	8.00
NQF Level	05
Prerequisites	KON 111 GS
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 2

Module content

Continuation of the construction and materials of a single storey dwelling. Superstructure: walls, opening, roofs, finishes and services.

Design communication 100 (OKU 100)

Module credits	6.00
NQF Level	05
Prerequisites	No prerequisites.
Contact time	1 studio hour per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Year

Module content

Visual communication, digital visualisation and representation tools, basic computer aided space modelling and drawing conventions to support design and construction projects.

Environmental theory 110 (OML 110)

Module credits	6.00
NQF Level	05
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 1

Module content

Introductory contextualisation of twentieth century artefacts within the framework of history from Antiquity to Modernity. Building types as artefacts of material culture. Approaches and guidelines to the study of history of the environment. Understanding of the process of endemic construction and its monumentalisation, settlement and urbanisation of various ages and environments. An interdisciplinary investigation of living spaces as shapers of social interaction. The history of the environment of the Mediterranean Antique, Bronze Age, Classical and Biblical societies.

Environmental studies 120 (OML 120)

Module credits	6.00
NQF Level	05
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 2

Module content

The history of the environment of and the link between North-Europe and the Mediterranean area, the Arabic peninsula and the Indies, from the fall of Jerusalem up until the fall of Constantinople in 1453 AD. Tao, Shinto and the landscape of the Far East.

Design 100 (ONT 100)

Module credits	60.00
NQF Level	05
Prerequisites	No prerequisites.

Contact time 2 lectures per week, 3 practicals per week, 3 seminars per week

Language of tuition Module is presented in English

Department Architecture

Period of presentation Year

Module content

Introduction to design and integration with supporting modules. Design principles, skills and techniques. Small-scale design projects and environmental influences (physical, social, cultural, historical), space requirements and creative interpretation. Acquisition of skills in design communication through imagination, intuition and conceptual thinking. Relation of internal to external space. Anthropometry and ergonomics; visual literacy (visual media, analysis and interpretation) and criticism. The designer as visual thinker. Perception; ideograms. Development of a vocabulary to describe and illustrate the discipline of design. Pertinent theory that informs and supports the design process. Students may from time to time be required to undertake experiential learning/practical work, community engagement, or data collection activities related to on-site research in socioeconomically underprivileged areas.

Theory of structures 123 (STU 123)

Module credits 6.00

NQF Level 05

Prerequisites No prerequisites.

Contact time 2 lectures per week

Language of tuition Module is presented in English

Department Architecture

Period of presentation Semester 2

Module content

Introduction to the theory of structures: forces, moments, stresses, strains and structural components.

Curriculum: Year 2

Minimum credits: 134

Core modules

Earth studies 210 (AAL 210)

Module credits	8.00
NQF Level	06
Prerequisites	No prerequisites.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 1

Module content

Designing towards wellbeing within the built environment: responsive and passive design in natural and mesoscale environments.

Earth studies 220 (AAL 220)

Module credits	8.00
NQF Level	06
Prerequisites	No prerequisites.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 2

Module content

Designing towards wellbeing within the built environment: inclusive design, health and user comfort in interior environments.

Community-based project 201 (JCP 201)

Module credits	8.00
NQF Level	06
Prerequisites	No prerequisites.
Contact time	1 other contact session per week
Language of tuition	Module is presented in English
Department	Informatics

Period of presentation Year

Module content

This module is integrated into all undergraduate academic programmes offered by the Faculty of Engineering, Built Environment and Information Technology. Main objectives: execution of a community project aimed at achieving a beneficial impact on a section of a socio-economically underprivileged community located in socio-economically deprived areas of our society; awareness of personal, social and cultural values and an understanding of social issues; and development of life skills.

Construction 210 (KON 210)

Module credits 8.00

NQF Level 06

Prerequisites KON 111 and KON 121

Contact time 3 lectures per week

Language of tuition Module is presented in English

Department Architecture

Period of presentation Semester 1

Module content

Double-storeyed buildings: reinforced concrete, steel and timber-framed structures. Offshutter concrete. Load-bearing masonry. Low-pitch roofs and waterproofing, other pitched-roof finishes. Lightweight partitioning. Glass. Joinery. Small precast elements.

Construction 220 (KON 220)

Module credits 8.00

NQF Level 06

Prerequisites KON 210 GS

Contact time 3 lectures per week

Language of tuition Module is presented in English

Department Architecture

Period of presentation Semester 2

Module content

Soil mechanics: foundations, basement construction and waterproofing. Site structures: geotextiles and geomembranes, stairs, walls, retaining walls, fences, ramps, gabions, prefabricated retaining blocks. Built planters, lapas, braais, pavilions, decks.

Design communication 200 (OKU 200)

Module credits 6.00

NQF Level 06



Prerequisites	No prerequisites.
Contact time	1 lecture per week, 1 studio hour per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Year

Module content

Visual communication, digital visualisation and representation tools. Communicating the complexity of projects in design and construction.

Environmental theory 210 (OML 210)

Module credits	6.00
NQF Level	06
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 1

Module content

The history of the environment and the link between North-Europe and a newly discovered world from the time of the circumnavigation of the southernmost Cape Point of Africa till the Industrial Revolution.

Environmental studies 220 (OML 220)

Module credits	6.00
NQF Level	06
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 2

Module content

History of the environment of Western societies and their dominions from the Industrial Revolution up to the intellectual questioning of Modernism. Southern African housing typologies and Western artefacts as manifestation of socio-political realities since 1488 AD.

Design 200 (ONT 200)

Module credits	60.00
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NQF Level	06
Prerequisites	AAL 110, KON 111, KON 121, OML 110, OML 120 and ONT 100
Contact time	17 studio hours per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Year

Module content

The process and product of design through the integration of supporting modules. Spatial design as response to tectonic and contextual influences. The production of space and the reading of place as central concerns in the design disciplines. The design of residential and simple public spaces and buildings with the emphasis on planning, plan-making, structure and economy as design determinants. Skills: programming, site analysis, time management, advanced graphic and reprographic techniques. Pertinent theory that informs and supports the design process in architecture. Students may from time to time be required to undertake experiential learning/practical work, community engagement, or data collection activities related to on-site research in socioeconomically underprivileged areas.

Theory of structures 211 (STU 211)

Module credits	8.00
NQF Level	06
Prerequisites	No prerequisites.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Civil Engineering
Period of presentation	Semester 1

Module content

Introduction to structural engineering concepts like design, analysis, sizing and planning of structures. Introduction to Newton's laws, equilibrium, free body diagrams. The application of equilibrium in solving reactions of statically determinate structures. The principles of determinacy and stability of structures. The application of Newton's laws in determining the internal forces in common structural systems like cable structures, trusses, frames and beams. The fundamental principles of weight and forces and how forces are transmitted through structural members and load tracing.

Theory of structures 221 (STU 221)

Module credits	8.00
NQF Level	06
Prerequisites	STU 211 GS
Contact time	3 lectures per week
Language of tuition	Module is presented in English

Department	Civil Engineering
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Period of presentation	Semester 2
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Module content

Introduction to material science in structural engineering. Concepts like stress, strain, elasticity, stress-strain diagrams, elasticity modules, strength and deformation as applied in structural engineering. Cross-sectional properties of structural elements. Types of stresses, and their transmission in structural elements. Introduction to the relationship between stress and strain (deflection) in beams by Coulomb's theory. Introduction to the analysis of compressive structural elements by means of Euler's theory.

Curriculum: Final year

Minimum credits: 132

Core modules

Earth studies 320 (AAL 320)

Module credits	6.00
NQF Level	07
Prerequisites	AAL 210
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 2

Module content

Ecosystemic thinking for the designer in terms of culture, science and environment. The designer as critic; analysis of precedents. Application of principles of sustainable development and ecological design including energy demand and efficiency and energy dissipation. Students may from time to time be required to undertake experiential learning/practical work, community engagement, or data collection activities related to on-site research in socioeconomically underprivileged areas.

Introduction to construction contract law 322 (KKR 322)

Module credits	8.00
NQF Level	07
Prerequisites	No prerequisites.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Construction Economics
Period of presentation	Semester 2

Module content

An introduction to the principles of construction contract law and an overview of standardised conditions of contract for the built environment.

Construction 310 (KON 310)

Module credits	12.00
NQF Level	07
Prerequisites	KON 210 and KON 220
Contact time	3 lectures per week

Language of tuition Module is presented in English

Department Architecture

Period of presentation Semester 1

Module content

Roads: design and construction, materials and finishes, kerbing. Water features: design and construction. Street furniture. Construction equipment. Site and building services: water lines, sanitary plumbing and pipe systems above ground and indoors, underground sewer systems, electricity and gas. Electrical lighting: light, lamp types, luminaires; lighting requirements. Design application.

Construction 320 (KON 320)

Module credits 12.00

NQF Level 07

Prerequisites KON 310 GS

Contact time 2 lectures per week

Language of tuition Module is presented in English

Department Architecture

Period of presentation Semester 2

Module content

Integration of the foregoing coursework. Introduction to construction norms and standards, technical drawing practice and specifications. Cost estimates, feasibility and payability. Advanced materials: ceramics, polymers, adhesives, paint, metals, glass. Human transportation systems: types, applications. Design of a small commercial building/landscape/interior space (in DESIGN) and the preparation of its construction drawings.

Design communication 300 (OKU 300)

Module credits 6.00

NQF Level 07

Prerequisites ONT 200/ONT 202/ONT 203

Contact time 1 lecture per week, 1 studio hour per week

Language of tuition Module is presented in English

Department Architecture

Period of presentation Year

Module content

Advanced digital visualisation and representation tools to support design projects. Document and building information management.

History of the environment 310 (OMG 310)

Module credits 6.00



NQF Level	07
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 1

Module content

History of the environment of African societies between the tropics within global context until the present.

History of the environment 320 (OMG 320)

Module credits	6.00
NQF Level	07
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 2

Module content

History of the environment of Southern African societies from the old Stone Age until the present.

Design 300 (ONT 300)

Module credits	52.00
NQF Level	07
Prerequisites	KON 210, KON 220, OML 210, OML 220 and ONT 200
Contact time	17 studio hours per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Year

Module content

The process of design through the integration of supporting modules. Lateral thinking and ritual as design informants.

The design of a mixed-use project in an urban context with a complex programme developed to construction drawings in the Construction modules. Statutory requirements, feasibility and payability studies. Theory of normative positions and the relationship between global intellectual movements and the local debate.

Appraising the state of current design production and the establishment of identity through design. Students may from time to time be required to undertake experiential learning/practical work, community engagement, or data collection activities related to on-site research in socioeconomically underprivileged areas.

Practice management 310 (PJS 310)

Module credits	8.00
NQF Level	07
Prerequisites	No prerequisites.
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Architecture
Period of presentation	Semester 1

Module content

Management of an architectural practice and architectural project from inception up to local authority submission.

Theory of structures 311 (STU 311)

Module credits	8.00
NQF Level	07
Prerequisites	STU 211 and STU 221
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Civil Engineering
Period of presentation	Semester 1

Module content

- Concrete Structures.
 - Loads on concrete structures, Limit-states design principles.
 - Bending, shear and punching: Design of beams, slabs and footings.
 - Compression members: Design of columns.
- Load bearing brickwork.
 - Limit-states design principles. Effective length and width of compression members.

Theory of structures 321 (STU 321)

Module credits	8.00
NQF Level	07
Prerequisites	STU 311 GS
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Civil Engineering
Period of presentation	Semester 2

Module content

1. Timber structures

- Loads on typical timber structures, Limit-states design principles
- Bending, shear and deflection: Design of flexural members without and with axial loads
- Tension members: Tension members in roof trusses
- Compression members: Design of compression members in trusses and as support members for trusses
- Bracing systems

2. Steel Structures

- Loads on typical steel structures, Limit-states design principles
 - Bending, shear and deflection: Design of flexural members without and with axial loads
 - Tension members: Tension members in roof trusses
 - Compression members: Design of compression members in trusses and as support members for trusses
 - Bracing systems
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The information published here is subject to change and may be amended after the publication of this information. The [General Regulations \(G Regulations\)](#) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the [General Rules](#) section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.