

MASTER OF BUILDING SCIENCE

(Qualification type: *Structured Master's Degree*)

Qualification code: MBSC17 - NQF Level 9 (180 credits)

SAQA ID: 96894, CHE NUMBER: H16/10746/HEQSF A

Campus where offered: Pretoria Campus

REMARKS

a. *Admission requirement(s) and selection criteria:*

Admission requirement(s):

A Baccalaureus Technologiae: Construction Management or Quantity Surveying, or an NQF Level 8 Bachelor, or Honours qualification in Construction Management or Quantity Surveying obtained from an accredited South African university or any other relevant NQF Level 8 qualification considered acceptable by the Department.

Candidates with a baccalaureus technologiae, will be required to complete bridging modules: Engineering Data Analyses, Life Cycle Management and Supply Chain Management (or their equivalents) at NQF Level 8. Candidates who have not completed these bridging modules before registration, will be required to complete them concurrently with this qualification.

Holders of any other equivalent South African or international qualification may also be considered, see Chapter 1 of Students' Rules and Regulations.

Selection criteria:

Admission will be subject to approval of a project proposal by the Departmental Research Committee (DRC). Applicants who do not meet the 60% minimum academic requirement, will be invited for a selection interview with a Departmental Selection Committee.

Assessment procedure:

After consideration of the Departmental Student Enrolment Plan (SEP), only the top performing candidates will be selected. Candidates will be informed immediately when accepted.

- **Candidates from South African Universities of Technology:**

Applications will be assessed against all the Admission requirement(s).

- **Candidates with other and international qualifications:**

Holders of any other equivalent South African or international bachelor's degree or diplomas, meeting the minimum requirements, will receive a letter to invite them to submit a portfolio, including:

- A Curriculum Vitae highlighting experience relevant to the field, after completion of the bachelor's degree;
- Motivation, in no more than one page, stating the reasons for wishing to be admitted;
- Proof of full academic record; and
- Evidence of engagement with research, which could include a written report of a scholarly nature; or a literature survey; or a paper presented at a conference or a published article.

Portfolios should be submitted by the due date (as indicated on the letter). The Departmental Selection Committee (at least three staff members of the programme) will assess the portfolios against the criteria as stipulated.

b. *Duration:*

A minimum of two years and a maximum of four years.

c. *Presentation:*

Block-mode classes (offered on Friday and Saturday mornings) and research.



- d. *Intake for the qualification:*
January only.
- e. *Exclusion and readmission:*
See Chapter 2 of Students' Rules and Regulations.
- f. *Research report:*
The candidates should prove that they understand a particular problem in the industry in which they have completed research and are able to analyse it and set it out logically to arrive at logical conclusions or a diagnosis, and to make proposals for solutions to the problem or for the elimination of the problem. The research report should comply with the usual general technical requirements and rules regarding scope, quality and layout.
- g. *Rules on postgraduate studies:*
See Chapter 8 of Students' Rules and Regulations.
- h. *Module credits:*
Module credits are shown in brackets after each module.

CURRICULUM

ATTENDANCE

CODE	MODULE	NQF-L	CREDIT
CEC109M	Construction Economics V	(9)	(18)
DEM109M	Development Management V	(9)	(18)
RCP109M	Research Report: Building Science V	(9)	(90)
RCP109R	Research Report: Building Science V (re-registration)	(9)	(0)
RCP119R	Research Report: Building Science V (re-registration) (semester option)	(9)	(0)
RMD109M	Research Methodology	(9)	(18)
plus one of the following modules:			
PRM109M	Project Management V	(9)	(36)
QSU109M	Quantity Surveying V	(9)	(36)
TOTAL CREDITS FOR THE QUALIFICATION:			180

MODULE INFORMATION (OVERVIEW OF SYLLABUS)

The syllabus content is subject to change to accommodate industry changes. Please note that a more detailed syllabus is available at the Department or in the study guide that is applicable to a particular module. On 8 August 2018, the syllabus content was defined as follows:

C

CONSTRUCTION ECONOMICS V (CEC109M)

1 X 3-HOUR PAPER

(Module custodian: Department of Building Sciences)

Introduction to Construction Economics. Micro and Macro-economics concepts and perspectives for the Construction Industry. South African Legislation relevant to investment. Market analysis and investment environment. Risks analysis and investment appraisal in construction; Time and value for money. Discounted cash flows. Development budget and control. Property investment, financial engineering for construction projects. Feasibility studies and life cycle costing. Property valuation and development. Property maintenance management and facilities management and the economics of sustainability and green buildings. (Total tuition time: ± 180 hours)



D**DEVELOPMENT MANAGEMENT V (DEM109M)****1 X 3-HOUR PAPER***(Module custodian: Department of Building Sciences)*

Introduction to Concepts in Infrastructure Development. Concepts in property development. Principles of Urban Economics. Town Planning and Development Control. Township Development; Residential Property Development. Commercial Property Development. Industrial Property Development. Traffic, Parking and Public Utilities. Environment and Stakeholders in development. Development Policy formulation. Organisational Structures of Development Entities. Public Finance and Management. Supply Chain Management. Production Planning and Control and Project Management. Legal Implications for Infrastructure Development and Dispute Resolution. (Total tuition time: ± 180 hours)

P**PROJECT MANAGEMENT V (PRM109M)****1 X 3-HOUR PAPER***(Module custodian: Department of Building Sciences)*

Introduction to construction management. Construction procurement and tender processes. Project implementation strategies. Scope and integration management. Planning, coordination, monitoring, evaluation and control through the project cycle. Tools of planning. Construction time management. Construction cost management. Value engineering. Earned value management. Human resource management and productivity. Plant, equipment and labour. Quality control of civil and building works. Risk management and tools of analysis. Communication in construction and stakeholder management. Legal framework for health, safety and environment. Application of environment, safety and health in the construction industry. Post-construction management concepts. Asset management and retrofitting. (Total tuition time: ± 360 hours)

Q**QUANTITY SURVEYING V (QSU109M)****1 X 3-HOUR PAPER***(Module custodian: Department of Building Sciences)*

Trends in the Quantity Surveying profession. Supply chain management, trends in procurement and e-procurement. Partnering, alliancing and joint ventures. Cost modeling and optimisation for construction projects- pre-construction, construction and post-construction. Cost optimisation in the Building Information Management (BIM) platform. Risks, uncertainty and accuracy of cost estimating. Cost indices and cost appraisal. Alternative dispute resolution. Integrated quantity surveying case study. (Total tuition time: ± 360 hours)

R**RESEARCH METHODOLOGY (RMD109M)****CONTINUOUS ASSESSMENT***(Module custodian: Department of Building Sciences)*

Study designs, proposal writing, sample size and power calculations, descriptive and univariate methods of data analysis such as descriptive statistics and graphs, one-sample tests and confidence intervals, two-sample tests and confidence intervals, Pearson's chi-square tests of association, multivariate methods of data analysis such as simple and multiple linear regression analysis, logistic regression analysis, qualitative research methods, use of commonly used statistical packages such as STATA, SPSS, NVIVO and ATLAS for quantitative and qualitative data analysis. (Total tuition time: ± 36 hours)

RESEARCH REPORT: BUILDING SCIENCE V (RCP109M/R, RCP119R)**MINI-DISSERTATION ASSESSMENT***(Module custodian: Department of Building Sciences)*

Each student must identify an appropriate topic within the chosen discipline and prepare a proposal which must be approved by the Departmental Research Committee (DRC). Under the guidance of an assigned academic supervisor, the student must demonstrate an understanding of the conceptualisation of the research problem and critical review of the underlying theory and relevant literature. The student must design and explain the research methods used and demonstrate the application of appropriate tools of data analysis. Further discuss the results, make conclusions and recommendations. The research must follow a systematic and logical format accepted for academic research reporting norms and be written in a satisfactory language. (No formal tuition)

