



 **DUT**
DURBAN
UNIVERSITY OF
TECHNOLOGY

 **FACULTY OF
ENGINEERING
& THE BUILT
ENVIRONMENT**

2019 HANDBOOK CONSTRUCTION MANAGEMENT & QUANTITY SURVEYING

HANDBOOK FOR 2019

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

**DEPARTMENT OF
CONSTRUCTION MANAGEMENT
AND
QUANTITY SURVEYING**

DEPARTMENTAL MISSION

Mission

To undertake internationally relevant teaching, study, research and consultancy that supports the advancement of our students and the Construction and Quantity Surveying Professions.

The department will provide a coherent, quality driven academic course of study which is relevant to the needs of employers in these disciplines and to society at large.

Purpose of the Programmes Offered

The purpose of the programmes offered is:

- a) For students to assimilate the necessary knowledge, understanding, abilities and skills required for further learning towards becoming a competent practicing construction manager or quantity surveyor. This combined with a period of post qualification mentored work experience will enable them to become competent practicing professionals, able to apply judgement and work independently and responsibly.
- b) To provide students with a sound knowledge base which emphasizes general principles and application in a particular field or discipline, and the ability to apply their knowledge and skills to particular career or professional contexts, while equipping them to undertake more specialised and intensive learning. The programmes tend to have a strong professional or career focus and holders of these qualifications are normally prepared to enter a specific niche in the labour market.
- c) To provide students:
 - with the preparation required for careers in construction management and/or quantity surveying,
 - the ability to make a contribution to the economy and national development,
 - the educational base required for registration with the South African Council for the Quantity Surveying Profession (SACQSP) as Professional Quantity Surveyors and/or registration with the South African Council for Project and Construction Management Professionals (SACPCMP) as Professional Construction Managers/Professional Construction Project Managers
- d) To contribute to the critical mass of construction industry professionals educated specifically for the world of work and research, and who also play a pivotal role in the infrastructure development of our country.

All the Construction Management and Quantity Surveying programmes offered are registered with The South African Qualification Authority (SAQA)

What is a University of Technology?

A university of technology is characterised by being research informed rather than research driven where the focus is on strategic and applied research that can be translated into professional practice. Furthermore, research output is commercialized thus providing a source of income for the institution. Learning programmes, in which the emphasis on technological capability is as important as cognitive skills, are developed around graduate profiles as defined by industry and the professions.

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IMPORTANT NOTICE

The departmental rules in this handbook must be read in conjunction with the Durban University of Technology's General Rules.

NOTE TO ALL REGISTERED STUDENTS

Your registration is in accordance with all current rules of the Institution. If, for whatever reason, you do not register consecutively for every year/semester of your programme, your existing registration contract with the Institution will cease. Your re-registration anytime thereafter will be at the discretion of the Institution and, if permitted, will be in accordance with the rules applicable at that time.

I. CONTACT DETAILS

All departmental queries to:

Secretary: Mrs Anisha Pirthiraj
Tel No: 031-373 2143
Fax No: 031-373 2610
Email: anishap@dut.ac.za
Location of Department: Steve Biko Campus, S3, Level 2, Room 201

All Faculty queries to:

Faculty officer: Mrs N Singh
Tel No: 031-373 2718
Fax No: 031-373 2724
Location of Faculty office: Steve Biko Campus, S4, Level 3

Executive Dean: Prof T N Andrew
Tel No: 031-373 2140
Fax No: 031-373 2724
Location of Executive Dean's office: Steve Biko Campus, S Block, S6, Level 4

2. STAFFING	Name and Qualification
Head of Department	Interim HOD: F C Fester, MTech (CM), SANPAD (RCI), HDE (UCT), PrCM, PrCPM
Senior Lecturers	Mr K Ramphal, MTech (QS) (MLST), BCom, Pr. Valuer, Sworn Appraiser Dr AO Aiyetan, PhD (CM) (NMU), MSc (CM), BSc (Building), ICIOB Dr SHP Chikafalimani, PhD (UP), MSc (Real Estate), BSc (Land Mngt), Pr. Valuer, MSAIV Dr MC Mewomo, PhD (UP), MTech (QS), Certificate in Construction Adjudication
Lecturers	Dr I Anugwo, PhD (NMU), MSc (Built Env: PM), BTech (PM) (First Degree Honours), ICIOB Mrs Z Armoed, MSc (CM) (UKZN), BSc (Hons) (Property Development), BSc (Property Development), Candidate QS Mrs H T Zungu, BTech (CM) (TN)
Technician	Mr R Deeplall, BTech (CM) (MLST), ND (Civil Eng), NHD (PSE)
Secretary	Mrs A Pirthiraj, Master of Management Sciences (Business Administration) (DUT), BTech (Commercial Admin) (Cum Laude), ND (Business Computing)

3. PROGRAMMES OFFERED BY THE DEPARTMENT

Programmes are offered in this Department, which, upon successful completion, lead to the award of the following qualifications:

Qualification	SAQA NLRD Number
National Diploma: Building (returning students only)	72214
Bachelor of the Built Environment in Construction Studies	99726
Baccalaureus Technologiae: Quantity Surveying	72158
Baccalaureus Technologiae: Construction Management	72121
Master of the Built Environment	96844
Doctor of Philosophy in the Built Environment	

Please note that due to National legislation, signed into effect by the Minister of Higher Education in the Government Gazette no. 40123 of 6th July 2016, the last permitted enrolment for any non-HEQSF aligned programme will be in 2019. This means that you will not be able to enrol in a Baccalaureus Technologiae (BTech) degree at DUT, or at any other institution in South Africa, in 2020 and onwards.

4. PROGRAMME INFORMATION AND RULES

On the basis of a variety of placement assessments, successful applicants for study towards a Bachelor of the Built Environment in Construction Studies will be accepted into a three-year minimum programme of study.

MINIMUM ADMISSION REQUIREMENTS

BACHELOR OF THE BUILT ENVIRONMENT IN CONSTRUCTION STUDIES (DU-D-BBU)

In addition to the requirements of the General Rules pertaining to entrance requirements (G7), the following are required for admission into Bachelor of the Built Environment (Construction Studies):

I) NSC, NCV, SC:

Compulsory Subjects	National Senior Certificate	National Certificate, (Vocational)	Senior Certificate	
	Minimum Rating (29 Points)	Mark	HG	SG
Mathematics	4	70%	E	C
Physical Science	4	70%	E	C
English (Primary), or	4	70%	E	C
English (First additional)	5			
Two other relevant NCV vocational subjects		70 %		

In addition to the subject requirements above, applicants with an NSC will be ranked according to the sum of their marks for Mathematics and Physical Science, subject to a minimum combined score of 120.

Note:

- (i) The subject NSC Mathematical Literacy will not be accepted as a substitute for the subject NSC Mathematics.
- (ii) The exit certificate of the candidate must qualify the candidate for degree study at an institution of higher learning.
- (iii) Life Orientation is excluded.

2) Other:

Prospective students, that qualify for degree study at an institution of higher learning, but do not meet the departmental mathematics and/or physics requirements, may present the following N4 subjects, for consideration for entry to the BBE (Construction Studies) programme:

Mathematics
 Engineering Science
 Building and Structural Construction
 Building and Structural Surveying

The above are all to be passed, in the maximum of two sittings, with a minimum of 60%. Students will then be ranked, alongside the NSC students, according to the sum of their marks for N4.

Prospective applicants may present a cognate level 6 Diploma for entry into the BBE (Construction Studies) program. Credit transfer will be considered dependent on the content thereof being presented.

Prospective applicants may present a cognate National N Diploma for entry into the BBE (Construction Studies) program. Credit transfer is not possible.

The number of students accepted each year will depend on the growth policy of the Institution and that of the department. Meeting the admissions level does not guarantee admission.

BACCALAUREUS TECHNOLOGIAE: CONSTRUCTION MANAGEMENT (BTCSMI)

1. A National Diploma: Building, or equivalent qualification.
2. Applicants must have obtained a minimum average mark of 60 % in the ND: Building programme as well as a minimum of 60 % in the Construction Management 3 module.
3. A minimum of one year of appropriate experience in the Construction Management field is required if a student fails to satisfy the 60 % average requirement.

As places on the course are limited, a selection process is implemented, with appropriate work experience and level of achievement at diploma level being considered.

The BTech (CM) is fully accredited by the South African Council for the Project and Construction Management Professions (SACPCMP).

Please note that due to National legislation, signed into effect by the Minister of Higher Education in the Government Gazette no. 40123 of 6th July 2016, the last permitted enrolment for any non-HEQSF aligned programme will be in 2019. This means that you will not be able to enrol in a Baccalaureus Technologiae (BTech) degree at DUT, or at any other institution in South Africa, in 2020 and onwards.

BACCALAUREUS TECHNOLOGIAE: QUANTITY SURVEYING (BTQTSI)

1. A National Diploma: Building, or equivalent qualification.
2. Applicants must have obtained a minimum average mark of 60 % in the ND: Building programme as well as a minimum of 60 % in the Quantity Surveying 3 module.
3. A minimum of one year of appropriate experience in the Quantity Surveying field is required if a student fails to satisfy the 60 % average requirement.

As places on the course are limited, a selection process is implemented, with appropriate work experience and level of achievement at diploma level being considered.

Please note that due to National legislation, signed into effect by the Minister of Higher Education in the Government Gazette no. 40123 of 6th July 2016, the last permitted enrolment for any non-HEQSF aligned programme will be in 2019. This means that you will not be able to enrol in a Baccalaureus Technologiae (BTech) degree at DUT, or at any other institution in South Africa, in 2020 and onwards.

MASTER OF THE BUILT ENVIRONMENT (MBCSMI / MBQTSI)

1. A Baccalaureus Technologiae in Construction Management, or Baccalaureus Technologiae in Quantity Surveying, or Bachelor of Science (Honours) in Construction Management, or Bachelor of Science (Honours) in Quantity Surveying, or equivalent qualification.
2. In the case of a Baccalaureus Technologiae, candidates must have been granted a Conferment of Status for the pre-requisite qualification.

The Master's Degree is offered by full dissertation only.

The DRC (Department Research Committee) is to be satisfied that the candidate is capable of undertaking and succeeding in this advanced course of study.

Where a student has not already completed a Research Methodology course then the student will be required to complete it concurrently with his/her research.

DOCTOR OF PHILOSOPHY IN THE BUILT ENVIRONMENT (DPBENI)

1. A Master of the Built Environment, or equivalent qualification.

The Doctoral Degree can only be undertaken as a full research option.

GENERAL INFORMATION PERTAINING TO THE PROGRAMMES National Diploma: Building (returning students only)

The National Diploma: Building is a three-year programme. This is based on three one-year levels ie two and a half academic (Years One and Three, and half of Year Two) and work integrated learning (half of Year Two) sandwiched between them. This programme is offered on a full-time basis. The first and third years, and half of the second year, comprise full-time study at the Durban University of Technology, while the other half of the second year entails working in the construction sector.

This is a broad based qualification intended to prepare diplomates for supervisory and middle management level employment in the building industry and for technical and support level in the construction management and quantity surveying professions. Persons achieving this qualification will be competent to support supervisors, managers, building surveyors and quantity surveyors.

Bachelor of the Built Environment in Construction Studies:

The Bachelor of the Built Environment in Construction Studies comprises a three full-time years of study, with six semesters of modules.

The purpose of the degree as submitted to the South African Qualifications Authority is:

"The purpose of this qualification is:

- *For learners to assimilate the necessary knowledge, understanding, abilities and skills required for further learning towards becoming a competent practicing construction manager or quantity surveyor. This combined with a period of post-qualification mentored work experience will enable learners to become competent practicing technologists, able to apply judgment and work independently and responsibly.*
- *To provide learners with a sound knowledge base which emphasises general principles and application in a construction management and the ability to apply knowledge and skills to particular career or professional contexts, while equipping learners to undertake more specialised and intensive learning. The qualification prepares learners for careers in construction management and/or quantity surveying."*

Baccalaureus Technologiae: Construction Management:

The BTech: Construction Management comprises a two year part-time programme.

This qualification is intended for persons specialising in the field of construction management. Persons achieving this qualification will be competent to independently perform services relevant to contract planning management and property development.

This qualification provides a route to registration as a Professional Construction Manager / Construction Project Manager.

Baccalaureus Technologiae: Quantity Surveying:

The BTech: Quantity Surveying comprises a two year part-time programme.

This qualification is intended for persons specialising in the field of quantity surveying, in the construction and property industries and the Quantity Surveying profession. Persons achieving this qualification will be competent to independently perform services relevant to contract procurement, financial and cost management and property development.

This qualification provides a route to registration as a Professional Quantity Surveyor.

Master of the Built Environment:

The Master of the Built Environment (MBE), by dissertation is offered by the Department of Construction Management and Quantity Surveying at the Durban University of Technology.

This qualification is intended for persons who will make a contribution, through research, to understanding the application and evaluation of existing knowledge in a specialised area of construction management and quantity surveying. They will also demonstrate a high level of overall knowledge in that area ranging from fundamental concepts to advanced theoretical or applied knowledge.

The primary purpose of the Master's Degree is to educate and train researchers, in a chosen Built Environment field, who can, under minimal guidance, contribute to the development of knowledge at an advanced level. The research problem, its justification, process and outcome are reported in a dissertation, which complies with the generally accepted norms for research at this level.

Doctor of Philosophy in the Built Environment:

The primary purpose of the Doctoral Degree is to develop an individual, in a chosen Built Environment field, to be able to contribute independently to the development of significant and original knowledge at an advanced level.

The research problem, its justification, process and outcome are reported in a thesis, which complies with the generally accepted norms for research at this level.

The qualification is intended for persons who will make a contribution, through research, to understanding the application and evaluation of existing knowledge in a specialised area of construction management and quantity surveying.

CONDUCT OF STUDENTS

- Attendance of lectures is very important and therefore compulsory
- Students should be on time for lectures
- No eating, smoking (including that of e-cigarettes) or drinking in lecture venues
- The use of mobile phones is not permitted during lecture times unless otherwise directed by the individual facilitator
- Important announcements are given in class during contact sessions
- All students must regularly visit the bulletin board for important notices
- Keep note that a class attendance register will be kept by the facilitator for future reference
- Rules of conduct pertaining to practicals and site visits, as instituted by the head of department, shall apply to all students
- The onus is on the student to ensure that no clashes exist between the modules for which the student has registered. Should there be clashes, the student is to inform the department immediately and de-register modules timeously

5. PROGRAMME STRUCTURE

NATIONAL DIPLOMA: BUILDING (RETURNING STUDENTS ONLY)							
Code	Modules:	*C/O	Semester/ Year	Assessment Method	NQF Level	Pre- requisite	Co- req
ABLS101	Applied Building Science 1	C	Year	Refer to Par 12 module content	6		
CMMN101	Communication 1	C	Semester	Refer to Par 12 module content	6		
CAPP103	Computer Applications 1	C	Semester	Refer to Par 12 module content	6		
CMNT101	Construction Management 1	C	Year	Refer to Par 12 module content	6		
CTEC102	Construction Technology 1	C	Year	Refer to Par 12 module content	6		
QSUR102	Quantity Surveying 1	C	Year	Refer to Par 12 module content	6		
EXBD101	Work Integrated Learning/ Interpretation of Doc.	C	Semester	Refer to Par 12 module content	6		
EXBD201	Experiential Learning # (Industry Placement)	C	Semester	Refer to Par 12 module content	6		
CMNT201	Construction Management 2	C	Year	Refer to Par 12 module content	6	CMNT101	
CTEC202	Construction Technology 2	C	Year	Refer to Par 12 module content	6	CTEC102	
QSUR202	Quantity Surveying 2	C	Year	Refer to Par 12 module content	6	QSUR102	
CACG302	Construction Accounting 3	C	Year	Refer to Par 12 module content	6		
CMNT301	Construction Management 3	C	Year	Refer to Par 12 module content	6	CMNT201	
CTEC302	Construction Technology 3	C	Year	Refer to Par 12 module content	6	CTEC202	
PAES302	Price Analysis and Estimating 3	C	Year	Refer to Par 12 module content	6		
QSUR302	Quantity Surveying 3	C	Year	Refer to Par 12 module content	6	QSUR202	
SCON301	Structures and Concrete 3	C	Year	Refer to Par 12 module content	6	ABLS101	
BACHELOR OF THE BUILT ENVIRONMENT IN CONSTRUCTION STUDIES							
Code	Modules:	*C/O	Semester/ Year	Assessment Method	NQF Level	Pre- requisite	Co- req
	Quantities and Documentation 1A	C	Semester	Refer to Par 12 module content	5		
	Construction Management 1A	C	Semester	Refer to Par 12 module content	5		
	Construction Technology 1A	C	Semester	Refer to Par 12 module content	5		
	Cornerstone 101	C	Semester	Refer to Par 12 module content	5		
	Mathematics for the Built Environment 1A	C	Semester	Refer to Par 12 module content	5		
	Technical Literacy	C	Semester	Refer to Par 12 module content	5		
	Physics for the Built Environment 1A	C	Semester	Refer to Par 12 module content	5		
	Quantities and Documentation 1B	C	Semester	Refer to Par 12 module content	5		
	Construction Management 1B	C	Semester	Refer to Par 12 module content	5		
	Construction Technology 1B	C	Semester	Refer to Par 12 module content	5		
	Information and Communication Technology Literacy and Skills	C	Semester	Refer to Par 12 module content	5		
	Statistics for the Built Environment 1B	C	Semester	Refer to Par 12 module content	6		
	Physics for the Built Environment 1B	C	Semester	Refer to Par 12 module content	6		
	Quantities and Documentation 2A	C	Semester	Refer to Par 12 module content	6		
	Construction Management 2A	C	Semester	Refer to Par 12 module content	6		
	Construction Technology and the Environment 2A	C	Semester	Refer to Par 12 module content	6		

BACHELOR OF THE BUILT ENVIRONMENT IN CONSTRUCTION STUDIES

Code	Modules:	*C/O	Semester/ Year	Assessment Method	NQF Level	Pre- requisite	Co- req
	Site Surveying 2A	C	Semester	Refer to Par 12 module content	6		
	Accounting 2A	C	Semester	Refer to Par 12 module content	6		
	Sociology and Society	C	Semester	Refer to Par 12 module content	6		
	Economics 2A	C	Semester	Refer to Par 12 module content	6		
	Construction Practice 2A	C	Semester	Refer to Par 12 module content	6		
	Quantities and Documentation 2B	C	Semester	Refer to Par 12 module content	6		
	Construction Management 2B	C	Semester	Refer to Par 12 module content	6		
	Construction Technology 2B	C	Semester	Refer to Par 12 module content	6		
	Introduction to Principles of Law 2B	C	Semester	Refer to Par 12 module content	7		
	Property Studies 2B	C	Semester	Refer to Par 12 module content	7		
	Economics 2B	C	Semester	Refer to Par 12 module content	6		
	Quantities and Documentation 3A	C	Semester	Refer to Par 12 module content	7		
	Construction Management 3A	C	Semester	Refer to Par 12 module content	7		
	Construction Technology 3A	C	Semester	Refer to Par 12 module content	7		
	Industry Project 3A	C	Semester	Refer to Par 12 module content	7		
	Concrete Technology 3A	C	Semester	Refer to Par 12 module content	7		
	Construction and Property Law 3A	C	Semester	Refer to Par 12 module content	7		
	Price Analysis and Tendering 3A	C	Semester	Refer to Par 12 module content	7		
	Quantities and Documentation 3B	C	Semester	Refer to Par 12 module content	7		
	Construction Technology 3B	C	Semester	Refer to Par 12 module content	7		
	Price Analysis and Tendering 3B	C	Semester	Refer to Par 12 module content	7		
	Structural Behaviour 3B	C	Semester	Refer to Par 12 module content	7		
	Introduction to Property Development, Finance and Investment 3B	C	Semester	Refer to Par 12 module content	7		
	Project Management 3B	C	Semester	Refer to Par 12 module content	7		

BACCALAUREUS TECHNOLOGIAE: CONSTRUCTION MANAGEMENT

Code	Modules:	*C/O	Semester/ Year	Assessment Method	NQF Level	Pre- requisite	Co- req
BLDE401	Building Entrepreneurship 4	C		Refer to Par 12 module content	7		
CNEC401	Construction Economics 4	C		Refer to Par 12 module content	7		
CLWP402	Construction Law and Procedures 4	C		Refer to Par 12 module content	7		
CMNT402	Construction Management 4	C		Refer to Par 12 module content	7	CMNT301	
DEVM403	Development Management 4	C		Refer to Par 12 module content	7		
MTMN401	Maintenance Management 4	C		Refer to Par 12 module content	7		

BACCALAUREUS TECHNOLOGIAE: QUANTITY SURVEYING

Code	Modules:	*C/O	Semester/ Year	Assessment Method	NQF Level	Pre- requisite	Co- req
BLDE401	Building Entrepreneurship 4	C		Refer to Par 12 module content	7		
CNEC401	Construction Economics 4	C		Refer to Par 12 module content	7		
CLWP402	Construction Law and Procedures 4	C		Refer to Par 12 module content	7		
DEVM403	Development Management 4	C		Refer to Par 12 module content	7		
MVAL402	Market Valuations 4	C		Refer to Par 12 module content	7		
QSUR402	Quantity Surveying 4	C		Refer to Par 12 module content	7	QSUR302	

C = Compulsory

6. ASSESSMENT PLAN

PROMOTION TO HIGHER LEVEL/PROGRESSION RULES

In addition to Rule G16, the following shall apply:

National Diploma: Building

For promotion to second year, a maximum of **two** modules at first year maybe outstanding unless otherwise determined by the Head of Department. The modules Computer Applications I (CAPPI03) and Communication I (CMMNI03) are considered half modules. All the rest are full modules.

Students will only be promoted to third year provided that they have passed all first and second level modules unless otherwise determined by the Head of Department.

Bachelor of the Built Environment in Construction Studies

In order to be promoted to study level two, the student must pass a minimum of 72 credits which **MUST INCLUDE** Quantities and Documentation IA and IB, Construction Management IA and IB, and Construction Technology IA and IB.

The student shall pass **ALL** the modules in study level one and two **BEFORE** he/she is permitted to register for **ANY** modules in the third study level.

7. UNSATISFACTORY ACADEMIC PROGRESS

In addition to Rule G17, the following shall apply:

The student shall be excluded if the minimum number of credits accumulated at the end of each year of registration has not been met, as indicated in the table below:

END OF YEAR	MINIMUM CREDITS
1	48
2	124
3	198
4	272
5	420

A student is required to have passed all first study level modules by the end of their second year of registration.

A student who fails a module twice may be excluded in terms of Rule G17.

8. RE-REGISTRATION RULES

8.1 A student who has not successfully completed any module after two periods of registration shall only be permitted to re-register for that module at the discretion of the Head of Department. (A module for which a student de-registers after the last day of the first semester shall count as a period of registration.)

8.2 A student who has been refused permission to register for a module in terms of Rule 8.1, and thereby will be unable to complete the qualification, will not be permitted to register for any other module in that qualification.

8.3 A student who has not completed the diploma within five years of first registering, or the B.Tech within three years of first registration, may, at the discretion of the Head of Department, be refused permission to re-register, or may be accepted subject to special conditions.

8.4 A student wishing to appeal to the Faculty Board of Engineering against the application of this rule must submit to the Faculty Officer a statement in which the student explains the reasons for the appeal.

This appeal must be submitted to the Faculty Officer within ten (10) working days of being officially notified in writing that the student has not been permitted to re-register. No appeals will be considered after this.

9. SPECIAL TESTS

9.1 A special test may be granted by the Head of Department to a student who has been prevented from taking a test:

by illness on the day of the test or immediately before it, provided that the student submits a medical certificate on the prescribed form on which a medical practitioner, registered by the Health Professions Council of SA, homoeopath or chiropractor, registered with the Allied Health Professions Council of South Africa, specifies the nature and duration of the illness and that for health reasons, it was impossible or undesirable for the student to sit for the test, and that the student submits such certificate to the Head of Department on the day as determined by the practitioner that the student should return to lectures immediately following such illness, or on one of the two following working days;

9.2 or by circumstances which, in the opinion of the Head of Department, were beyond the student's control at the time of the test provided that satisfactory evidence of such circumstances is provided. Such circumstances shall not include:

- any misinterpretation by the student of the date, time or venue of the test;
- transportation difficulties, where the student's residential term time address is within the area serviced by a scheduled bus or commuter train service to the central Durban area, and provided otherwise that the student informs the Head of Department of such difficulty prior to the time of commencement of the test;

- failure by the student to bring to the test venue any equipment normally required for that module as specified in the study guide for the particular module.

- 9.3 For the purpose of this rule “test” shall mean any written, oral, or practical test, set for the purpose of determining or contributing towards a course mark for a module, and shall include tests set for modules which are evaluated by continuous evaluation.
- 9.4 Any student who misses a test and who does not qualify for a special test, and any student who qualifies for a special test, but fails to write it, shall be awarded a zero mark for the missed test.

10. EXPERIENTIAL LEARNING FOR NATIONAL DIPLOMA: BUILDING (RETURNING STUDENTS ONLY)

This programme requires the student/candidate to undergo a period of experiential learning (6 months) as part of the course. All prescribed compulsory and elective modules (instructional offerings) and the prescribed experiential component must be passed in order to obtain sufficient credits to qualify for the qualification.

Although the Institution undertakes to assist the student/candidate in obtaining suitable experiential learning placement, the onus is on the student/candidate to find an employer. The employer must be accredited by the Durban University of Technology for the purposes of experiential learning. An experiential learning agreement creates a separate contract between the employer and the student/candidate.

11. NATIONAL DIPLOMA PHASE-OUT INFORMATION Important information for current students (effective as of January 2017):

The current National Diploma: Building will be phased out starting in 2017 to allow for the introduction of the new Bachelor of the Built Environment in Construction Studies.

The last cohort of first-time entering students admitted to this National Diploma qualification was in January 2017.

Notwithstanding all the current rules (both General rules and Departmental Rules) that regulate this diploma, the last year in which any student may register for each of the modules listed as follows:

Module Name	Last Possible Year of Registration
Applied Building Science I	2019
Communication I	2019
Computer Applications I	2019
Construction Management I	2019

Construction Technology I	2019
Quantity Surveying I	2019
Site Surveying I	2019
Construction Management II	2020
Construction Technology II	2020
Quantity Surveying II	2020
Construction Accounting III	2021
Construction Management III	2021
Construction Technology III	2021
Price Analysis and Estimating III	2021
Quantity Surveying III	2021
Structures and Concrete III	2021

12. BACCALAUREUS TECHNOLOGIAE PHASE-OUT INFORMATION

Important information for current and prospective students (effective from 2019):

The Baccalaureus Technologiae: Construction Management (SAQA ID: 72121) and Baccalaureus Technologiae: Quantity Surveying (SAQA ID: 72158) are being phased out to allow for the introduction of the new qualifications as per the new Higher Education Qualifications Framework.

The last cohort of first-time entering students admitted to the Baccalaureus Technologiae qualifications will be January 2019. All registrations at this time will be for part-time study.

Notwithstanding all the current rules (both General rules and Departmental rules) that regulate this degree, the last year in which any student may register for each of the subjects is listed as follows:

I. Baccalaureus Technologiae: Construction Management (BTCSMI)

Module Name	Last Possible Year of Registration
Building Entrepreneurship IV	January 2022
Construction Economics IV	January 2022
Construction Law and Procedures IV	January 2022
Construction Management IV	January 2022
Development Management IV	January 2022
Maintenance Management IV	January 2022

2. Baccalaureus Technologiae: Quantity Surveying (BTQTSI)

Module Name	Last Possible Year of Registration
Building Entrepreneurship IV	January 2022
Construction Economics IV	January 2022
Construction Law and Procedures IV	January 2022
Development Management IV	January 2022
Market Valuations IV	January 2022
Quantity Surveying IV	January 2022

13. MODULE CONTENT

NATIONAL DIPLOMA: BUILDING

APPLIED BUILDING SCIENCE I (ABLS101)

CONTACT TIME: Theory - 6 periods per week

COURSE MARK: Four tests - each 10%

EXAMINATION: One three-hour paper - 60%

SYLLABUS

1. Basic building science principles
2. Application of basic building science principles in construction

CONSTRUCTION MANAGEMENT I (CMNT101)

CONTACT TIME: Theory - 6 periods per week

COURSE MARK: Four tests - each 10%

EXAMINATION: One three-hour paper - 60%

SYLLABUS

1. Construction Industry and Company Organisations
2. Introduction to site administration
3. Management of Resources and Sub-Contractors
4. Introduction to Construction Human Resource Management
5. Project Planning and Cost Control

CONSTRUCTION TECHNOLOGY I (CTEC102)

CONTACT TIME: Theory - 6 periods per week

COURSE MARK: Three tests - each 10%

One assignment - 10%

EXAMINATION: One four-hour paper - 60%

SYLLABUS

Technology and methodology of the construction process as related to housing

1. Preconstruction phase
2. Foundations, substructure and superstructure
3. Services and finishes

QUANTITY SURVEYING, I (QSUR102)

CONTACT TIME: Theory - 6 periods per week

COURSE MARK: Four tests - 10% each

EXAMINATION: One four-hour paper - 60%

SYLLABUS

1. An understanding of the role of the professional Quantity Surveyor and his contribution to the construction process
2. Bills of Quantities production
3. The measurement of the main elements of single storey buildings

COMMUNICATION I (CMMN101) (Half course)

CONTACT TIME: Theory - 2 periods per week

COURSE MARK: Minimum of 3 tests and 2 assignments

EXAMINATION: NO EXAMINATION - CONTINUOUS ASSESSMENT

SYLLABUS

1. Introduction to course methods and objectives
2. Communication theory
3. Oral presentation
4. Group communication skills and meeting procedure
5. Leadership skills
6. Technical writing and correspondence
7. Practical communication applications

COMPUTER APPLICATIONS I (CAPP103) (Half course)

CONTACT TIME: Theory - 2 periods per week

Practical - 2 periods per week

COURSE MARK: Three practical tests 20% each
Control test 40%
(Sub minimum of 20% - i.e. 50% of 40%)

EXAMINATION: NO EXAMINATION - CONTINUOUS ASSESSMENT

SYLLABUS

1. Introduction to computers
2. Operating system basics
3. Application programmes

SITE SURVEYING, I (SSUR101)

CONTACT TIME: Theory - 2 periods per week

Practical - 4 periods per week

COURSE MARK: Two tests - 10% each
Two practical assignments - 10% each
One three-hour paper - 60%

EXAMINATION:

SYLLABUS

1. Linear surveying
2. Setting out
3. Levelling
4. Elementary tachometry
5. Contouring
6. Surveys of existing buildings

Note: Tuition time to include a minimum of 36 hours' field work.

EXPERIENTIAL LEARNING I (EXBD101)

Completion of the following modules:

1. Work Integrated Learning
2. Interpretation of Documentation

EXPERIENTIAL LEARNING 2 (EXBD201)

Six months' industry based on experiential training

CONSTRUCTION MANAGEMENT II (CMNT201)

EXAMINATION: CONTINUOUS ASSESSMENT (100 %)

SYLLABUS

Projects based on reinforcing and expanding the Construction Management I syllabus. Aimed at encouraging students to problem solve and foster a spirit of self-study and research. Student to draw on site and office experiences to produce project solutions.

CONSTRUCTION TECHNOLOGY II (CTEC202)

EXAMINATION: CONTINUOUS ASSESSMENT (100 %)

SYLLABUS

Projects based on reinforcing and expanding the Construction Technology I syllabus. Aimed at encouraging students to problem solve and foster a spirit of self-study and research. Students draw on site experiences to produce project solutions.

QUANTITY SURVEYING II (QSUR202)

EXAMINATION: CONTINUOUS ASSESSMENT (100 %)

SYLLABUS

Projects based on reinforcing and expanding Quantity Surveying I syllabus. Aimed at encouraging students to problem solve and foster a spirit of self-study and research. Students draw on site and office experiences to produce project solutions.

CONSTRUCTION ACCOUNTING III (CACG302)

CONTACT TIME: Theory - 6 periods per week

COURSE MARK: Best three of four tests - 13,33% each

EXAMINATION: One three-hour paper - 60%

1. The purpose of accounting
2. Records and first entries
3. Business transactions
4. Bank transactions
5. Transactions up to trial balance
6. Closing entries up to balance sheet
7. Contract accounts
8. Sole owners and partnership accounts
9. Limited companies and close corporation accounts
10. Application of a construction accounting computer programme

CONSTRUCTION MANAGEMENT III (CMNT301)

CONTACT TIME: Theory - 6 periods per week

COURSE MARK: Four tests - 10% each

EXAMINATION: One three-hour paper - 60%

SYLLABUS

1. Human resources management as it relates to the construction industry
2. Construction process management

CONSTRUCTION TECHNOLOGY III (CTEC302)

CONTACT TIME: Theory - 6 periods per week

COURSE MARK: Three tests - 10% each

One assignment - 10%

EXAMINATION: One four-hour paper - 60%

SYLLABUS

Technology and methodology of the construction process as related to multi-storey buildings.

1. Preconstruction phase
2. Foundations, substructure and superstructure
3. Services and finishes

PRICE ANALYSIS & ESTIMATING III (PAES302)

CONTACT TIME:	Theory - 6 periods per week	
COURSE MARK:	Four tests	- 10% each
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Analysis of unit rates of items of each major trade in the Bills of Quantities, including the Preliminaries Bill
2. Methods of estimating and costing and the use of prime cost items and provisional sums
3. Valuations and progress payments

QUANTITY SURVEYING III (QSUR302)

CONTACT TIME:	Theory - 6 periods per week	
COURSE MARK:	Four tests	- 10% each
EXAMINATION:	One four-hour paper	- 60%

SYLLABUS

1. The measurement and billing of the various elements of load bearing brick, structural steel and framed reinforced concrete structures, together with the associated site works and drainage
2. Builders quantities

STRUCTURES AND CONCRETE III (SCON301)

CONTACT TIME:	Theory - 6 periods per week	
COURSE MARK:	Six tests	- 6,67% each
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Theory of Structures
2. Concrete Technology
3. Formwork

BACCALAUREUS TECHNOLOGIAE: QUANTITY SURVEYING (BTQTS1) AND BACCALAUREUS TECHNOLOGIAE: CONSTRUCTION MANAGEMENT (BTCSM1)

BUILDING ENTREPRENEURSHIP IV (BLDE401)

CONTACT TIME:	Theory - 4 periods per week	
COURSE MARK:	Two tests	- 10% each
	One Business Plan	- 10%
	One Case Study	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Building Entrepreneurship
2. Building Business Management
3. Building Financial Management

CONSTRUCTION ECONOMICS IV (CNEC401)

CONTACT TIME:	Theory - 4 periods per week	
COURSE MARK:	Three tests	- 10% each
	One assignment	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Land utilisation
2. Property economics
3. Property development and feasibility reports

CONSTRUCTION LAW AND PROCEDURES IV (CLWP402)

CONTACT TIME: Theory - 4 periods per week

COURSE MARK: Four tests - 10% each

EXAMINATION: One three-hour paper - 60%

SYLLABUS

1. LAW

Basic principles of South African law, Law of Contracts, Construction Law, Standard Conditions of Building and Civil Engineering Contracts, Labour Law and Building Law, Introduction to insurance of buildings

2. CONTRACT ADMINISTRATION PROCEDURES

Tenders, valuations and final accounts.

CONSTRUCTION MANAGEMENT IV (CMNT402)

CONTACT TIME: Theory - 4 periods per week

COURSE MARK: Four tests - 8% each

One assignment - 8%

EXAMINATION: One three-hour paper - 60%

SYLLABUS

1. Advanced human resources as it relates to the construction industry
2. Advanced construction process management

DEVELOPMENT MANAGEMENT IV (DEVM403)

CONTACT TIME: Theory - 4 periods per week

COURSE MARK: Three tests - 7,33% each

One project - 18%

EXAMINATION: One three-hour paper - 60%

SYLLABUS

1. Project Management for Community Low Income Housing Developments
2. Project Management for Commercial Developments

MAINTENANCE MANAGEMENT IV (MTMN401)

CONTACT TIME: Theory - 4 periods per week

COURSE MARK: One test - 10%

One group assignment - 10%

Two research projects - 10%

EXAMINATION: One three-hour paper - 60%

SYLLABUS

1. The management of facilities and the technologies utilised
2. Facilities maintenance management and processes

MARKET VALUATION IV (MVAL402)

CONTACT TIME: Theory - 4 periods per week

COURSE MARK: Three tests - 8% each

Two assignments - 8% each

One three-hour paper - 60% each

SYLLABUS

1. Introduction to investment in property
2. Decision to build or buy, renovate, remodel or refurbish
3. Market research
4. Feasibility analysis
5. Executive feasibility reports
6. Investment analysis and finance
7. Risk analysis and existing buildings
8. Computer applications

QUANTITY SURVEYING IV (QSUR402)

CONTACT TIME: Theory - 4 periods per week

COURSE MARK: Three tests - 10% each
One assignment - 10%

EXAMINATION: Two four hour papers - 30% each

SYLLABUS

1. Comprehensive study of the measurement of more specialised elements of builder's work
2. Measurement of civil engineering work
3. Measurement of electrical & mechanical installations

NB: Students to read this section in conjunction with the relevant learner guides.

MODULE CONTENT

BACHELOR OF THE BUILT ENVIRONMENT IN CONSTRUCTION STUDIES

BBE (CONSTRUCTION STUDIES)

FIRST YEAR

FIRST SEMESTER MODULES

CORNERSTONE I01

CONTACT TIME: 48 hours

COURSE MARK: There will be one formal test, a distinctive version of which will be offered on each of three dates, so that students can enrol (electronically) for the date of their choice. This is intended to reduce pressure on venues, and will require careful attention to equivalence across the three versions. This will count 40% of the total. The other 60% will consist of such forms of assessment as these:

- A draft (marked) leading to a full written assignment (marked)
- Guided peer assessment
- A portfolio or project

The choice of assessment will depend on the actual topic selected in a given year. There are diverse possibilities in the nature of projects – such as poster production, drama, and so on, provided there are clear assessment criteria that would be applied across the different modes of assessment. These criteria will be set out in the module overview and the instructors' manual.

EXAMINATION: None

SYLLABUS

1. The module content will be developed around the concept of journeys, across time, across space, and across human relationships.
2. The module will bring different disciplinary perspectives to this content.
3. The module will start with the analysis of a current issue (one critical event or development will be analysed; the event in focus will be selected on the basis of its connections to the theme of journeys and its relevance to the issues of ethics, diversity and critical citizenry).
4. The final section of the module will identify and integrate learning from earlier sections, and examine implications for further learning. For example, it is proposed that one topic (from the following list) be the focus for the initial offering of the module. At each stage of the module, students will be required to engage in activities that involve reflection and build communicative practices. There will be a concluding section in which students will identify their learning and examine the implications for their roles as students and as citizens.

5. Proposed list of topics:
 - 5.1. Our journeys: moving into higher education
 - 5.2. Journeys from self to community (including forms of community engagement and service)
 - 5.3. Journeys of migration, discovery and coercion (including movement of labour)
 - 5.4. Moving into resistance
 - 5.5. Journeys of conflict and reconciliation
 - 5.6. Journeys and demography (shifts in demography, related to the 2011 census; this will work intensively with quantitative issues. This will address, for example, the demographics related to HIV/AIDS)
 - 5.7. The journeys of women
 - 5.8. The long march from the Cradle of Humankind (includes some covering of genetics)
 - 5.9. Journeys in the literature of Southern Africa
 - 5.10. Our journeys to the future: studying and careers (this will link to the theme of workplace adaptability)
 - 5.11. Journeys of development (including environmental sustainability and questions of the nature of development. It will include an exploration of how technology can be used to reduce inequality and environmental degradation)

QUANTITIES AND DOCUMENTATION IA

CONTACT TIME: 48 hours

COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One four-hour paper	- 60%

SYLLABUS

1. Interpretation of construction drawings and specifications
2. The use of price determination documentation
3. Introduction to basic descriptive quantification
4. Various Functions of the Professional Team

CONSTRUCTION MANAGEMENT IA

CONTACT TIME: 32 hours

COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. The composition, role-players, processes and role of the construction industry
2. The principles of contemporary management theory
3. The emergence of modern management thought

CONSTRUCTION TECHNOLOGY IA

CONTACT TIME: 48 hours

COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One four-hour paper	- 60%

SYLLABUS

1. Interpretation of drawings
2. Substructure and setting out
3. Concrete materials
4. Masonry walls
5. Lintels, Brickwork openings and arches
6. Filling under floors, damp proof courses and electrical conduits in floors
7. Doors and different types of door frames
8. Timber, steel and aluminium windows
9. Setting up and building in door and window frames

MATHEMATICS FOR THE BUILT ENVIRONMENT IA

CONTACT TIME: 32 hours

COURSE MARK:	Test 1	- 20%
	Test 2	- 20%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Numbers: Integers, Primes, Divisibility, Rational Numbers, Exponential Notation, Bases and Number Representation, Binary Number System, Infinity
2. Algebra: Variables, Legal and Illegal Algebraic Manipulations, Units, Powers and Roots, Logarithms, Quadratic, Equations, Polynomials, Inequalities, Complex Numbers, Function, Expressions, Equations and Inequalities, Sigma Notation
3. Analytic Geometry: Function and Graphs, (Linear, Quadratic, Circular, Rectangular Hyperbolic, Piecemeal, Absolute Value, Trigonometric, Exponential, Logarithmic), Perimeter, Area and Volume, Proportion, Conic Section
4. Trigonometry: Pythagorean Theorem, π , Sine and Cosine, Tangent and Secant, Ratios, Complex

- Plame, de Moivre's and Euler's Theorems, Hyperbolic Functions
5. Series: Elementary, Power, Convergence, Taylor, L'Hopital, Bernoulli
 6. Calculus: Differentiation and Integration
 7. Theory relating to linear algebra
 8. Theory related to linear programming

PHYSICS FOR THE BUILT ENVIRONMENT 1A

CONTACT TIME: 48 hours

COURSE MARK: Test 1 - 15%
 Test 2 - 15%
 Practical - 10%
 One three-hour paper - 60%

EXAMINATION:

SYLLABUS

1. General (Units, quantities and vectors, newton's laws, work and energy and properties and states of matter)
2. Mechanics (Forces, parallelogram of forces, triangle of forces, polygon of forces and analytical solutions)
3. Centroids (Lamina and Solid bodies)
4. Stress and Strain (Elasticity and Deformation)
5. Introductions to Moments (Reactions of simply supported beams and shear force and Bending moments)
6. Frames (Roof trusses): (Graphical solution)

TECHNICAL LITERACY

CONTACT TIME: 24 hours

COURSE MARK: Test 1 - 20%
 Test 2 - 30%
 Report 1 - 20%
 Report 2 - 30%

EXAMINATION:

None

SYLLABUS

1. The differences between language usage in academic, technical and common environments
2. Experimental methods and the scientific method
3. Planning and documenting experiments
4. Technical Report writing
5. Referencing practice
6. Utilising spreadsheets for graphical presentation of information
7. Standards (ISO, SABS, etc.)

FIRST YEAR

SECOND SEMESTER MODULES

QUANTITIES AND DOCUMENTATION 1B

CONTACT TIME: 48 hours

COURSE MARK: Test 1 - 15%
 Test 2 - 15%
 Assignment/Project - 10%

EXAMINATION:

One four-hour paper - 60%

SYLLABUS

1. Undertaking of basic descriptive quantification for small/simple structures
 - 1.1. Critical appraisal of the project design
 - 1.2. The sequence of measurement
 - 1.3. Take-off quantities on dimension paper
 - 1.4. Measurement clauses and the application thereof
 - 1.5. Compilation of price determination documents in schedule format

CONSTRUCTION MANAGEMENT IB

CONTACT TIME:	32 hours	
COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Theory underpinning the principles of financial management in society
2. Theory underpinning the principles of marketing management in society
3. Theory underpinning the principles of production management in society
4. Systems theory

CONSTRUCTION TECHNOLOGY IB

CONTACT TIME:	48 hours	
COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One four-hour paper	- 60%

SYLLABUS

1. Roofs
2. Staircases
3. Simple suspended slabs, formwork and reinforcement
4. Propping and strutting of concrete
5. Finishes to walls, floors and ceilings
6. Ironmongery, glazing and mirrors
7. Plumbing, sanitary fitting, waste and soil pipework

INFORMATION AND COMMUNICATION TECHNOLOGY LITERACY AND SKILLS

CONTACT TIME:	32 hours
COURSE MARK:	Students will regularly be subjected to short quizzes (written and equally weighted) in their usual classes as set up by their module facilitator, and these quizzes will count for half of the total mark. The other half will come from the continuous assessment of a capstone project (written report and oral presentation) undertaken by students in groups of five to seven. Both short quizzes and capstone projects will be internally moderated.

EXAMINATION: None

SYLLABUS

1. Basics of ICTs Hardware, Software, and Users
2. Internet Search
3. Word Processing
4. Spreadsheets
5. Presentations
6. Referencing
7. Security, Legal, Ethical, and Societal Issues
8. Economics of ICTs

STATISTICS FOR THE BUILT ENVIRONMENT 1B

CONTACT TIME: 32 hours

COURSE MARK: Test 1 - 20%

Test 2 - 20%

EXAMINATION: One three-hour paper - 60%

SYLLABUS

1. Probability: Discrete Probability Distributions, Continuous Probability Densities, Combinatorics (Permutations and Combinations), Conditional Probability (Discrete, Continuous and Paradoxes), Distributions and Densities, Expected Value and Variance, Sums and Random Variables, Laws of Large Numbers, Central Limit Theorem, Generating Functions (Discrete Distributions, Branching Processes, Continuous, Densities), Markov Chains, Random Walks
2. Statistics: Analysis and Relationship Modelling, Observed Data and Graphical Representation, Parameter Estimation, Model Verification, Linear Models and Linear Regression, Error Analysis, Data Projection, Analysis and Modelling, Trend Analysis, Cluster and Factor Analysis
3. Logic and Set Theory: Proof by Induction, Unions, Intersections, Difference, Symmetry
4. Probability theory and distribution
5. Statistical inference techniques theory
6. Correlation of regression analysis theory

PHYSICS FOR THE BUILT ENVIRONMENT 1B

CONTACT TIME: 48 hours

COURSE MARK: Test 1 - 15%

Test 2 - 15%

Practical - 10%

EXAMINATION: One three-hour paper - 60%

SYLLABUS

1. Sound: (Nature, vibrating bodies, acoustic phenomena, sound insulation and reverberation)
2. Light: (Nature, propagation of light, artificial lighting and natural lighting)
3. Principles of heat: (Conduction, radiation, convection, expansion and contraction and heat transfer)
4. Electricity: (Current electricity, magnetism, induction and power supply)
5. Thermo dynamics: (Density, pressure, temperature of matter, fluid physics and displacement (Archimedes principle))

SECOND YEAR

FIRST SEMESTER MODULES

QUANTITIES AND DOCUMENTATION 2A

CONTACT TIME: 48 hours

COURSE MARK: Test 1 - 15%

Test 2 - 15%

Assignment/Project - 10%

EXAMINATION: One four-hour paper - 60%

SYLLABUS

1. Preparing cost estimates for built environment projects
 - 1.1. Collection of appropriate data
 - 1.2. Analysing and advising on various alternative design solutions
 - 1.3. Preparation of cost estimates
 - 1.4. Advising on prepared cost estimates
 - 1.5. Undertaking cost norms analyses
2. Managing payment processes during built environment project construction
 - 2.1. Recommendation of progress payments and the process leading up to the recommendation
 - 2.2. Determination of contract price adjustment
 - 2.3. Confirmation of progress payment status
 - 2.4. Negotiations of non-formula based contract price adjustment

CONSTRUCTION MANAGEMENT 2A

CONTACT TIME: 48 hours

COURSE MARK:	Test 1	- 10%
	Test 2	-10%
	Assignment/Project	- 10%
	Presentation	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Communication on the micro environment site
2. Drawing of bar charts
3. Planning and programming
4. South African Contract Law
5. OHSA / Construction Health & Safety Act
6. BCEA
7. LRA

CONSTRUCTION TECHNOLOGY AND THE ENVIRONMENT 2A

CONTACT TIME: 64 hours

COURSE MARK:	Test 1	- 10%
	Test 2	- 10%
	Assignment/Project	- 10%
	Presentation	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. What is green construction?
2. Green building design elements:
 - 2.1. Foundations
 - 2.2. Electrical
 - 2.3. Flooring
 - 2.4. Decking, fencing and railing
 - 2.5. Roofing
 - 2.6. Insulation
 - 2.7. Wall coverings
 - 2.8. Siding
 - 2.9. Acoustics
 - 2.10. Finishing
3. Life cycle assessment
4. Energy efficient buildings

SITE SURVEYING 2A

CONTACT TIME: 24 hours

COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Linear surveying
2. Setting out
3. Levelling
4. Gradients
5. Sewer and drainage systems
6. Areas and volumes of cut and fills
7. Traversing
8. Elementary tachometry
9. Contours
10. Survey of existing buildings

ACCOUNTING 2A

CONTACT TIME: 48 hours

COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
	One three-hour paper	- 60%

EXAMINATION:

SYLLABUS

1. The nature and purpose of accounting
2. Accounting framework
3. Processing accounting data
4. Large volumes of transactions
5. Bank reconciliation statements
6. Control accounts
7. Reporting financial information
8. Contract accounts

SOCIOLOGY AND SOCIETY

CONTACT TIME: 32 hours

COURSE MARK:	Test 1	- 10%
	Test 2	- 20%
	Major Essay	- 20%
EXAMINATION:	One three-hour paper	- 50%

EXAMINATION:

SYLLABUS

1. Perspectives on Sociology
 - 1.1 An introduction to the theoretical and conceptual foundations of Sociology
 - 1.2 Sociology as a science and a social science
 - 1.3 Society and Human Action, Industrialization and Urbanism
2. Culture and Society
 - 2.1 Concept of culture and society, norms and values, diversity, ideology, power
 - 2.2 Types of Societies pre-modern (Hunting and gathering, pastoral, agrarian) traditional Industrial with first, second and third worlds.
3. Gender and Sexuality
 - 3.1 Gender socialization
 - 3.2 Patriarchy, power and production
4. Stratification and Class Structure
 - 4.1 Systems of social stratification
 - 4.2 Theory of stratification (Marx, Weber)
 - 4.3 Poverty and inequality
5. Globalization
 - 5.1 Changes in formation of the state, changes in the production and interdependence of the World Society
 - 5.2 Economic consequences of colonialization
 - 5.3 Transnational Corporations
 - 5.4 International Economic integration
 - 5.5 Examination of the process of globalisation with respect to the South African context.

ECONOMICS 2A

CONTACT TIME: 48 hours

COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Assumptions and definitions
2. Microeconomic topics:
 - 2.1. Theory of demand, supply, and equilibrium
 - 2.2. Measurement of elasticity
 - 2.3. Theory underpinning principles of consumer behaviour in the general economy and consumer demand theory
 - 2.4. Theory related to principles of production and production cost in the general economy
 - 2.5. Perfect competition
 - 2.6. Perfect monopoly and the theory of monopolistic competition
 - 2.7. Oligopoly
 - 2.8. Theory related to principles of different market forms and income distribution in the general economy
 - 2.9. Labour economics
 - 2.10. Economics of information
 - 2.11. Principles of taxation and tax equity
3. Opportunity cost
4. Applied microeconomics

CONSTRUCTION PRACTICE 2A

CONTACT TIME: 0 hours

EXAMINATION: None

SYLLABUS

Students are required to participate in a range of organized activities that meets the identified outcomes of the module and would include:

- community engagement
- simulated work related practicals on campus
- work based projects/assignments
- relevant vacation work in approved built environment disciplines (construction; engineering; housing; property development and management; quantity surveying; relevant local authority, provincial and national government departments)

SECOND YEAR SECOND SEMESTER MODULES

QUANTITIES AND DOCUMENTATION 2B

CONTACT TIME:	48 hours	
COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One four-hour paper	- 60%

SYLLABUS

1. Undertaking of intermediate descriptive quantification for medium/load bearing structures
 - 1.1. Critical appraisal of the project design
 - 1.2. The sequence of measurement
 - 1.3. Take-off quantities using appropriate specialist computer packages
 - 1.4. Measurement clauses and the application thereof
 - 1.5. Compilation of price determination documents using appropriate specialist computer packages

CONSTRUCTION MANAGEMENT 2B

CONTACT TIME:	48 hours	
COURSE MARK:	Test 1	- 10%
	Test 2	- 10%
	Assignment/Project	- 10%
	Presentation	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Basics of BCEA
2. Introduction to LRA
3. Introduction to JBCC
4. Introduction to FIDIC
5. Introduction to NEC
6. Introduction to GCC
7. Financial reporting & cost control
8. Cost evaluation & cost control

CONSTRUCTION TECHNOLOGY 2B

CONTACT TIME:	48 hours	
COURSE MARK:	Test 1	- 10%
	Test 2	- 10%
	Assignment/Project	- 10%
	Presentation	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Precast concrete
2. Glass
3. Dormer windows
4. Fireplace
5. Plumbing and drainage
6. Paint

INTRODUCTION TO PRINCIPLES OF LAW 2B

CONTACT TIME: 32 hours

COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
	One three-hour paper	- 60%

EXAMINATION:

SYLLABUS

1. South African Law history and development
2. The law of contract
3. The law of agency
4. Principles of purchase and sale
5. Principles of leases
6. Types of businesses
7. Insolvency
8. Letting and hiring of work
9. Labour law
10. Building and civil contracts
11. Arbitration law
12. Mercantile law

PROPERTY STUDIES 2B

CONTACT TIME: 32 hours

COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
	One three-hour paper	- 60%

EXAMINATION:

SYLLABUS

1. Introduction to investment
2. Characteristics of property as an investment
3. Functioning of the real property market
4. Introduction to the principles of urban land economics
5. Introduction to the principles of property development
6. Theory and application of property finance
7. Financial mathematics for property development decisions
8. Evaluation techniques for property development and investment decisions
9. Application of risk analysis and management to property investment

ECONOMICS 2B

CONTACT TIME: 48 hours

COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment	- 10%
	One three-hour paper	- 60%

EXAMINATION:

SYLLABUS

1. Basic macroeconomic concepts
 - 1.1. Output and income
 - 1.2. Unemployment
 - 1.3. Inflation and deflation
2. Macroeconomic models:
 - 2.1. Aggregate demand–aggregate supply
 - 2.2. IS–LM
 - 2.3. Growth models

3. Macroeconomic policy
 - 3.1. Opportunity cost
 - 3.2. Monetary policy
 - 3.3. Fiscal policy
 - 3.4. Comparison
4. Development
 - 4.1. Origins
 - 4.2. Austrian School
 - 4.3. Keynes and his followers
 - 4.4. Monetarism
 - 4.5. New classical
 - 4.6. New Keynesian response
5. National income theories
6. Principles of money, banking and monetary policy
7. Key macro-economic controversies facing policy makers
8. Principles of international trade and finance
9. Business cycles

THIRD YEAR FIRST SEMESTER MODULES

QUANTITIES AND DOCUMENTATION 3A

CONTACT TIME:	48 hours	
COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One four-hour paper	- 60%

SYLLABUS

1. Implementation of appropriate budgetary processes relating to built environment projects
 - 1.1. Establishing and maintaining cost management and monitoring procedures
 - 1.2. Cash flow forecasting and management
 - 1.3. Appraisal of cost management and monitoring procedures
 - 1.4. Establishing of budgets
2. Preparation of financial reports
3. Undertaking cost planning and cost control of built environment projects
 - 3.1. Establishing cost objectives and parameters
 - 3.2. Developing pre-contract cost plans
 - 3.3. Creation of elemental and component cost data for cost planning
 - 3.4. Evaluating outcomes of project planning process
 - 3.5. Analysis of financial and non-financial returns

CONSTRUCTION MANAGEMENT 3A

CONTACT TIME: 64 hours

COURSE MARK: Test 1 - 20%

Test 2 - 20%

EXAMINATION: One three-hour paper - 60%

SYLLABUS

1. Contractual management
 - 1.1. Policy and planning
 - 1.2. Pre-tender planning
 - 1.3. Contract planning
2. Planning techniques
 - 2.1. Network techniques, source scheduling and optimum cost analysis
 - 2.2. Bar charts
 - 2.3. Line of balance
3. Office and site administration and documentation
4. Application of JBCC Principal Building Agreement
5. Quality control

CONSTRUCTION TECHNOLOGY 3A

CONTACT TIME: 48 hours

COURSE MARK: Test 1 - 15%

Test 2 - 15%

Assignment/Project - 10%

EXAMINATION: One four-hour paper - 60%

SYLLABUS

1. Definition of multi floor concepts
2. Demolitions
3. Site and subsoil investigation
4. Dewatering
5. Soil improvement systems
6. Piling
7. Basements
8. Retaining walls
9. Concrete

INDUSTRY PROJECT 3A

CONTACT TIME: 80 hours

COURSE MARK: Abstract - 15%

Feasibility Report - 15%

Proposal - 15%

Presentation - 15%

Draft Report - 15%

Final Report - 25%

EXAMINATION: None

SYLLABUS

The project assignment should contain elements which are considered to be innovative, experimental or exploratory in nature. The student will be responsible for securing an industry sponsor with expertise in the project area and an academic mentor from professional graduates or academic staff. Evidence must be presented regarding the involvement of each mentor.

1. **Project Reports**
Primarily intended for the preparation of the final report for the Industry Sponsored Project, this course will provide the basis and format for all technical reports required in the programme. Emphasis will be placed on the overall structure, organization of information and the logical progression of concepts.
2. **Technical Presentations**
The ability to make an effective business presentation is more essential than ever for individuals wanting to advance in their careers. This course will describe to participants how to analyse audience needs and then integrate a variety of presentation techniques to deliver an effective presentation. It is expected that the mentors will be invited to the presentation.
3. **Project Proposals**
This course will help the student conduct the necessary literature review to define clearly the industry sponsor/research/investigation topic, and to prepare an effective proposal for submission to the department. The industry sponsor is expected to provide occasional guidance and support relating to this activity.
4. **Industry Based Project**
In conjunction with an industry sponsor, the student solves a technical problem relating to construction. The research/investigation project must contain some elements that are innovative, experimental, or exploratory in nature. An industry mentor and an academic mentor will supervise the progress of the project, provide guidance and direction where appropriate, and evaluate the final report and its presentation.

CONCRETE TECHNOLOGY 3A

CONTACT TIME:

32 hours

COURSE MARK:

Test 1

- 15%

Test 2

- 15%

Assignment/Project

- 10%

One four-hour paper

- 60%

EXAMINATION:

SYLLABUS

1. History and uses of concrete
2. Properties of reinforced concrete
3. Types of concrete
4. Concrete production
5. The design of a concrete mix (PCI Method recommended)
6. Batching and mixing concrete
7. Ready mixed concrete
8. Handling and transporting concrete
9. Supervision of concrete pumping
10. Placing and compacting
11. Curing
12. Quality control of site produced concrete
13. Prestressed and Post-stressing of concrete
14. Mass concrete
15. Special techniques
16. Repairs to concrete
17. Concrete recycling
18. Statistics
19. Concrete cost analysis
20. Materials, finishes, special formwork
21. Column and wall formwork
22. Deck and floor formwork

23. Formwork supervision and procedures
24. Design checks and safety aspects for formwork and access scaffolding
25. Formwork cost analysis
26. Practical laboratory sessions will cover tension in steel, mixing, placing, curing and testing of concrete, pouring and testing of reinforced beams and the testing of local soils

CONSTRUCTION AND PROPERTY LAW 3A

CONTACT TIME:	32 hours	
COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. CONSTRUCTION
 - 1.1. The law of contract
 - 1.2. The development of construction contracts in historical and comparative perspective
 - 1.3. Contractual roles and responsibilities
 - 1.4. Standard construction contract forms in common usage
 - 1.5. Contractual interpretation on issues relating to time, quantity, payment and a pro-active non-adversarial approach to contract procedures
 - 1.6. Substantiation of contractual loss and expense
 - 1.7. Building contracts for targeted procurement and community involvement
 - 1.8. Project compliance with legislative and planning requirements, including environmental and occupational health and safety issues
 - 1.9. Arbitration and alternative dispute resolution procedures and evidentiary norms applied in legal proceedings within the built environment
2. PROPERTY
 - 2.1. The Law of Property
 - 2.2. The Law of Contract
 - 2.3. Contract of Sale
 - 2.4. The Building Contract
 - 2.5. The Lease Agreement
 - 2.6. The Nature and Classification of Rights in Property;
 - 2.7. Ownership
 - 2.8. Original Acquisition
 - 2.9. Rights in Security
 - 2.10. Possession
 - 2.11. Human Rights and Property
 - 2.12. Introduction to Trusts - their nature and classification

PRICE ANALYSIS AND TENDERING 3A

CONTACT TIME:	32 hours	
COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Built environment project procurement systems
2. Determining built environment project procurement requirements
3. Evaluating built environment project procurement systems
4. Built environment project buildability analysis
5. Estimating versus Costing
6. Pricing bills of quantities
7. Pricing approximate quantities and elemental estimates
8. Depreciation

THIRD YEAR SECOND SEMESTER MODULES

QUANTITIES AND DOCUMENTATION 3B

CONTACT TIME:	48 hours	
COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One four-hour paper	- 60%

SYLLABUS

1. Undertaking of intermediate descriptive quantification for framed structures
 - 1.1. Critical appraisal of the project design
 - 1.2. The sequence of measurement
 - 1.3. Take-off quantities using appropriate specialist computer packages
 - 1.4. Measurement clauses and the application thereof
 - 1.5. Compilation of price determination documents using appropriate specialist computer packages
 - 1.6. Pricing of price determination documents using appropriate specialist computer packages

CONSTRUCTION TECHNOLOGY 3B

CONTACT TIME:	48 hours	
COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One four-hour paper	- 60%

SYLLABUS

1. Steel framed structures
2. Roofing and water-proofing
3. Cladding
4. Electrical installations
5. Insulation and heating systems
6. Ventilation and air-conditioning
7. Passive and active fire resistance
8. Lifts, escalators, service ducts and service co-ordination

PRICE ANALYSIS AND TENDERING 3B

CONTACT TIME:	32 hours	
COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Principles underlying the classification of cost
2. The role of cost accounting as an aid to managerial decision-making
3. The components of total cost
4. The principles of cost control accounts
5. The reconciliation of cost and financial accounts
6. The methods of costing
7. The relationship between costs, revenues and profits

STRUCTURAL BEHAVIOUR 3B

CONTACT TIME:	32 hours	
COURSE MARK:	Online assessments	- 40%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Rigid behaviour
2. Tensile behaviour
3. Compressive behaviour
4. Axial behaviour
5. Bending behaviour: cantilever beam
6. Bending behaviour: cantilever tree
7. Bending behaviour: simply supported beam
8. Bending behaviour: propped cantilever
9. Bending behaviour: fixed end beam
10. Bending behaviour: continuous beam
11. Bending behaviour: portal frame
12. Bending behaviour: plane frame

INTRODUCTION TO PROPERTY DEVELOPMENT, FINANCE AND INVESTMENT 3B

CONTACT TIME:	48 hours	
COURSE MARK:	Test 1	- 15%
	Test 2	- 15%
	Assignment/Project	- 10%
EXAMINATION:	One three-hour paper	- 60%

SYLLABUS

1. Property Development:
 - 1.1. Introduction
 - 1.2. Property industry in South Africa
 - 1.3. Construction industry in South Africa
 - 1.4. Development process
 - 1.5. Urban land economics
2. Property Finance:
 - 2.1. Introduction
 - 2.2. Distinction between debt and equity finance
 - 2.3. Gearing property
 - 2.4. Hedging interest rates risk
 - 2.5. Stepped rate loans
 - 2.6. Bare dominium schemes
 - 2.7. Syndications
 - 2.8. Participation mortgage bonds
 - 2.9. Bridging finance
3. Property Investment:
 - 3.1. Introduction
 - 3.2. Real estate as an investment
 - 3.3. Real estate investment process
 - 3.4. Objectives of real estate investors
 - 3.5. Participants in the real estate investment process
 - 3.6. Framework for the study of real estate investment
 - 3.7. Developing an investment strategy
 - 3.8. Decision criteria
 - 3.9. Risk
 - 3.10. Investment portfolios

PROJECT MANAGEMENT 3B

CONTACT TIME: 48 hours

COURSE MARK: Test 1 - 15%

Test 2 - 15%

Assignment/Project - 10%

One three-hour paper - 60%

EXAMINATION:

SYLLABUS

1. Identification and management of the effects of scope-change on built environment projects
2. Determination of resource requirements for built environment projects
3. Labour Relations and Labour Legislation
4. Industrial Psychology
5. Occupational Health and Safety welfare
6. Personnel Management
7. Practical application of MS Projects

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