



**COLLEGE OF ENGINEERING, SCIENCE
& TECHNOLOGY**

SCHOOL OF BUILDING & CIVIL ENGINEERING

TRADE DIPLOMA IN ARCHITECTURAL TECHNOLOGY

**Programme Document
&
Unit Descriptors**

2014

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**College of Engineering, Science and Technology
School of Building & Civil Engineering
Trade Diploma in Architectural Technology**

1.0 Background Information

This programme was developed in the early nineties and it has been running well in the last twenty one years on semester basis and from this 2014, the University has decided to change the mode of training into the Trimester Teaching Mode.

The programme has been one of the attractive programme under the School of Building and Civil Engineering and has been enrolling the maximum numbers in every new recruitment at the beginning of each year.

1.1 Rationale

- To produce semi- professional architectural technicians capable of supporting professional architects in practice.
- To promote human resource development in the field of architecture and open up training to those school leavers who may wish to pursue architectural work as their career.

1.3 Graduate Profile

The profile of students graduating in the Diploma in Architectural Technology is to provide competent semi- profession Technicians that helps the professional architects in any proposed project that architects are contracted to design. A successful candidate who complete the Diploma programme should have and be able;

1. To produce graduates who are able to enter professional careers in the construction processing an inquiring critical approach to the design and construction process and aim to engender the qualities of confident and the ability to work as a team and to develop an understanding of the building process including the scientific and technical, commercial legal and social processes which underpin it.
2. To provide the knowledge based on the construction industry to enable the graduates to take active role in the future development for the benefit of themselves and the society.

3. To develop an understanding for the contribution made by the construction industry to the community, and the effect of the construction projects on the natural and the manmade environment.
4. To broaden students awareness of the contributions of, and problems faced by, related professionals in the construction industry and to develop an understanding of changing roles and relationships within the built environment professions and equip them to cope with such changes.
5. To develop a knowledge and understanding of information technology and specialist computer techniques and their application to a range of construction related situations.

1.4 Program Philosophy

The broad aim of the programme is to develop in all students the understanding of the construction processes which underpin it. The programme will create an awareness of the wide variety of the problems which may be encountered in the construction industry and the curriculum will provide a pattern of study which will encourage students to examine and devise solutions for real and simulate industrial problems and situations.

Students will initially be given an introduction to the construction industry and the work of the participants. A mathematical, scientific and technological base will be established in order to underpin the subsequent academic stages and to extend the intellectual power of the student. Building on this, further development of mathematical, scientific, and technological and technical skills through applied study.

2.0 Programme Regulations

2.1 Admission Requirements

The minimum entry requirement for admission into the Diploma in Architectural Technology is a pass in the Fiji School Leaving Certificate with at least 50% in English, Physics and Mathematics and any other Technical subjects.

Admission into the programme is also open to mature students who may wish to pursue the programme but must have been working in the construction industry for at least five (5) years.

Enrolment for the programme is done after duly verifying all the documents including transcripts, birth certificate, identification etc. Final enrolment is confirmed only after he or she pays the full fees or make arrangements with the financial department in writing.

2.2 PROGRAMME DURATION:

The Diploma in Architectural Technology shall be for a period of two years (2) consisting of five Trimesters and a six months of practical work experience attachment.

3.0 Programme Structure

3.1 General

The duration of the programme is two years consisting of five trimesters. The student will be expected to undergo 6 months industrial attachment to complete the programme. The programme consists of 38 units drawn from Trimesters 1 to 5.

The overall duration for a full time and a part time student to complete the programme is four years and seven years respectively.

3.2 Compulsory Units

All units are compulsory.

3.3 Delivery Mode

Normal full time attendance.

The programme is intended to be delivered over a period of one and half years (5 trimesters) on the basis of full time attendance, The teaching will be by a mixture of class contact hours and self-directed learning with the class contact hours increasing progressively throughout the programme.

3.4 Order of Delivery

Units are tabled according to the year/trimester in the Programme Descriptor/Structure (Tables 1 & 2). Unit content instruction should be delivered chronologically as itemized in the Programme Descriptor

Table 1. Programme Descriptor

Code: DCE				TRADE DIPLOMA IN ARCHITRECTORAL TECHNOLOGY																							
Year 1																											
Trimester 1 – Stage 1				Trimester 2 – Stage 2																							
Unit Code		Unit Title		Unit Code		Unit Title																					
COM401	EEE450	EEE470	ETH 401	MEC450	MEC470	MTH405	PHY416	PHY403	CHEM406	CHEM470	CIN445	CIN470	MEC451	MEC472	MEC452	OHS445	MTH504	Engineering Chemistry	Engineering Chemistry Laboratory	Introduction to Computer Programming	Introduction to Computer Programming Laboratory	Engineering Mechanics	Engineering Mechanics Laboratory	Workshop Practice	Occupational Health & Safety	Engineering Mathematics 2	
Technical Communication		Electrical & Electronic Engineering		Electrical & Electronic Engineering Laboratory		Introduction to Ethics, Values & Governance		Engineering Graphics		Engineering Graphics Laboratory		Engineering Mathematics 1		Engineering Physics		Engineering Physics Laboratory											
Year 1																											
Trimester 3 – Stage 3																											
Unit Code		Unit Title																									
DEN400	DEN401	DEN402	DEN403	DEN404	DEN405	DEN406	DEN407																				
Civil Engineering Technology		Computer Aided Design I		Materials for Construction		Materials for Construction Laboratory		Construction Technology Theory I		Construction Technology Practice I		Land Surveying Theory		Land Surveying Practice													
Year 2																											
Trimester 1- stage 4				Trimester 2. – Stage 5																							
Unit Code		Unit Title																									
DEN 500	DEN 501	DEN 502	DAT 408	DAT 510	DAT 511	DAT 512	DAT 513	DAT 514	DEN 503	DEN 504	DAT 515																
Building Services		Computer Aided Design II		Construction Technology II		Design Appreciation Practice		Architectural Design Theory		Environmental Design Science		Architectural Design Project		Professional Studies		Architectural 3D Design		Construction Technology III		Contract Management		Specification Writing Practice					

There is a considerable degree of flexibility tolerated for students who wish to break their studies, have to do supplementary assessment or repeat the units. The only stipulation being

- Prerequisites must be satisfied before proceeding to advanced units and
- Supplementary assessments and repeats can only be done when the unit is next offered officially.

The final outcome for graduation must be the accumulation of 38 appropriate units plus the mandatory 6 months industrial attachment. The student should submit the Work Experience Record Book to the school duly signed and stamped by the employer.

The minimum entry requirement for admission to the Diploma programme is a pass in the Fiji School Leaving Certificate at least 50% in English, Mathematics, Physics and any other engineering subjects.

Table 2. Programme Structure

Period	Unit Code	Unit Title	Lecture Hours	Tutorial Hours	Labs & Studios	Total Contact Hours	Total SDL Hours	Total learning Hours	Credit Points
Year 1, Trimester 1	COM401	Technical Communication							
	EEE450	Introduction to Electrical & Electronic Engineering							
	ETH401	Introduction to Ethics, Values & Governance							
	MEC450	Engineering Graphics							
	MTH405	Engineering Mathematics 1							
	PHY416	Engineering Physics							
	EEE470	Introduction to Electrical & Electronic Engineering Laboratory							
	MEC470	Engineering Graphics Laboratory							
	PHY403	Engineering Physics Laboratory							
		Subtotal							
Year 1, Trimester 2	CHM406	Engineering Chemistry							
	CIN445	Introduction to Computer Programming							
	MEC451	Engineering Mechanics							
	MEC452	Workshop Practice							
	OHS445	Occupational Health & Safety							
	MTH504	Engineering Mathematics 2							
	CHM470	Engineering Chemistry Laboratory							
	CIN470	Introduction to Computer Programming Laboratory							
	MEC470	Engineering Mechanics Laboratory							
		Subtotal							
Year 1, Trimester 3	DEN400	Civil Engineering Technology	4	1		60	95	155	10
	DEN401	Computer Aided Design 1		1	4	60	95	155	10
	DEN402	Materials for Construction	3	1		48	55	103	7
	DEN404	Construction Technology Theory 1	3	1		48	55	103	7
	DEN405	Construction Technology Practice 1			3	36	10	46	3
	DEN406	Land Surveying Theory	3	1		36	10	46	3
	DEN407	Land Surveying Practice		1	3	48	55	103	7
	DEN403	Materials for Construction Laboratory			3	36	10	46	3
		Subtotal	12	6	13	372	385	757	50
Year 2, Trimester 4	DEN 500	Building Services	3	1		48	56	103	7
	DEN 501	Computer Aided Design 2		1	4	60	60	120	8
	DEN 502	Construction Technology II	4	1		60	95	155	10
	DAT 408	Design Appreciation Practice		1	3	48	55	103	7
	DAT 510	Architectural Design Theory	4	1		60	70	130	9
	DAT 511	Environmental Design Science	4	1		60	70	130	9
			Subtotal						
Year 2 Trimester 5	DAT 512	Architectural Design Project		1	4	60	70	130	9
	DAT 513	Professional Practice	4	1		60	60	120	8
	DAT 514	Architectural 3D Design		1	4	60	70	130	9
	DEN 503	Construction Technology III	4	1		60	70	130	9
	DEN 504	Contract Management	4	1		60	60	120	8
	DEN 505	Specifications Writing Practice		1	3	48	55	103	7
			Subtotal						

Attachment (6 months relevant on-the job – training in any Field of Civil Engineering from reputable Engineering firm in Fiji or overseas .

Table 3 Pre-requisite for every unit

Unit Code	Unit Title	Pre – requisite
Year 1, Trimester 1		
COM401	Technical Communication	Form 6 Pass
EEE450	Electrical & Electronic Engineering	Form 6 Pass
EEE470	Electrical & Electronic Engineering Laboratory	Form 6 Pass
ETH401	Introduction to Ethics, Values & Governance	Form 6 Pass
MEC450	Engineering Graphics	Form 6 Pass
MEC470	Engineering Graphics Laboratory	Form 6 Pass
MTH405	Engineering Mathematics 1	Form 6 Pass
PHY416	Engineering Physics	Form 6 Pass
PHY403	Engineering Physics Laboratory	Form 6 Pass
Year 1, Trimester 2		
CHM406	Engineering Chemistry	Form 6 Pass
CHM470	Engineering Chemistry Laboratory	Form 6 Pass
CIN445	Introduction to Computer Programming	Form 6 Pass
CIN470	Introduction to Computer Programming Laboratory	Form 6 Pass
MEC451	Engineering Mechanics	Form 6 Pass
MEC472	Engineering Mechanics Laboratory	Form 6 Pass
MEC452	Workshop Practice	Form 6 Pass
OHS445	Occupational Health & Safety	Form 6 Pass
MTH504	Engineering Mathematics 2	MTH405
Year 1, Trimester 3		
DCE400	Civil Engineering Technology	PHY416
DEN401	Computer Aided Design 1	MEC470
DEN402	Materials for Construction	CHM406
DEN403	Materials for Construction Laboratory	CHM470
DEN404	Construction Technology Theory I	MEC452
DEN405	Construction Technology Practice I	MEC452
DEN406	Land Surveying Theory	MTH504
DEN407	Land Surveying Practice	MTH504
Year 2, Trimester 1		
DEN 500	Building Services	DEN 403
DEN 501	Computer Aided Design 2	DEN 401
DEN 502	Construction Technology Theory II	DEN 404
DAT 408	Design Appreciation Practice	DEN 401
DAT 510	Architectural Design Theory	DEN 404
DAT 511	Environmental Design Science	DEN 404
Year 2, Trimester 2		
DAT 512	Architectural Design Project	DAT 510
DAT 513	Professional Practice	DEN 502
DAT 514	Architectural 3D Design	DEN 501
DEN 503	Construction Technology III	DEN 502
DEN 504	Contract Management	DEN 502
DEN 505	Specification Writing Practice	DEN 502

4.0 Assessment

4.1 Assessment Philosophy

Assessment is broken down into formative and summative components. Details are expanded below.

4.2 Methods of Assessment

Methods of Assessment. (Summative)

The aim of the summative assessment is to provide the examination board with evidence on which to base its recommendations regarding the award of grades. Its primary purpose is therefore assessment. The primary tool for summative assessment is by final examination. These will normally be of either two or three hour's duration as appropriate to the subject matter. An addition ten minutes reading time will be allowed. In preparation of examination papers, consideration will be given to the level attainment of the candidates. The aim is to move the candidates progressively from closed type problem solving towards a more open ended style of examination.

Methods of Assessment (formative)

The aim of the formative assessment is to guide and encourage the student to meet the performance criteria set out in each of the unit descriptors. Its primary purpose is therefore educational. The primary tool for formative assessment is the assignment. Assignments are used to develop the student's problem solving skills and to provide guidance as to the level of attainment expected. Marks for assignment work reflect the degree to which the student has met the performance criteria.

Laboratory exercises are an essential part of the assessment procedure. They are assessed on the basis of a report of the work carried out and the conclusions drawn. As part of the exercise, the student is expected to conduct a literature search and review.

4.3 Criteria for Assessment

All unit require that a student obtain a total mark of 50%. In units with final examinations, the student must also obtain a stated minimum mark in the examination. Laboratory assignments must be completed to an acceptable standard

5.0 Teaching and Learning Methods

5.1 Introduction

A variety of teaching methods will be used to facilitate the achievement of the aims and objectives of the programme. In the initial stages of the process of intellectual development the student will be guided towards the achievement of a successful outcome of each activity. In alter stages however, the guidance will be reduced so as to encourage the student to become a self - motivated independent learner. For this to succeed it will be necessary for FNU to provide adequate access to appropriate materials such as the availability of sufficient recommended text books in the Library,

computers, engineering computer software, and engineering surveying laboratory apparatus.

5.2 Teaching Strategies

Teaching will be by a mixture of formal lectures, laboratory sessions and the solution of both closed and open ended problems in engineering design and construction. Classroom based activities will emphasize activity participation in the learning process. In the early stages students will participate in traditional problem solving activities. Students will be expected to supply reasoned arguments in support of their approaches to solving assignment problems. Later on and as a pre-requisite to solving more open-ended problems, students will be encouraged to extend their knowledge base through directed study of externally available resources material. In the final trimester the student will be required to carry out a design project based on standard architectural practice. The project will be directed towards an actual architectural problem in Fiji and will require integration of knowledge from different parts of the diploma syllabus.

6.0 Monitoring, Evaluating and Reviewing of Programme

6.1 College Academic Board

The College Academic Board composition as detailed in the UASR, review, discuss and amend programmed curricula.

6.2 Examination Board

The Examination Board composition as detailed in the UASR sits to discuss, amend and recommend individual results at the end of each trimester for approval.

6.3 Ongoing Monitoring

The College Academic Board has to review programme curricula and make amendments according to the following:

- a) new technologies
- b) new industrial practices legislation
- c) new educational developments
- d) changes to staff responsibilities
- e) employers and the Industry Advisory Committee
- f) the College Academic Board
- g) student representative enrolled in the programme
- h) staff training roster
- i) review by external consultants etc.

The monitoring process is implemented by the application of Quality Management System procedures which ensure timely scheduling and recording of various meetings, regular calls to employer groups, launching and recording questionnaires, setting of internal and external reviews and maintaining close liaisons with industries, governments and educational bodies locally and abroad.

6.4 External Moderation

Final stage papers are externally moderated by experts in appropriate fields.

6.5 Industry Advisory Committee (IAC)

Composition of IAC

Chairman: A Representative from the Industry

Secretary: Head of School (TVET/Technical), Building & Civil Engineering

Members: Representatives from:

- Ministry of Public Works
- Fiji Institute of Engineers
- Fiji Master Builders Association
- Fiji Institute of Quantity Surveyors
- Fiji Association of Architects
- Ministry of Education
- Private Companies
- Fiji Sugar Corporation

UNIT DESCRIPTURES