



**COLLEGE OF ENGINEERING, SCIENCE  
& TECHNOLOGY**

**SCHOOL OF BUILDING & CIVIL ENGINEERING**

**TRADE DIPLOMA IN QUANTITY SURVEYING**

**Programme Document  
&  
Unit Descriptors**

**2014**

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

## **1.0 Background Information**

This programme was developed in the latest nineties and it has been running well in the last fifteen 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 minimum numbers in every new recruitment at the beginning of each year.

### **1.1 Rationale**

- To produce semi- professional Quantity Surveyor technicians capable of supporting professional Quantity Surveyor in practice.
- To promote human resource development in the field of Quantity Surveying 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 Quantity Surveying is to provide competent semi- profession Technicians that helps the professional Quantity Surveyor 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 estimate 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 Quantity Surveying 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 Quantity Surveying shall be for a period of two years (2) consisting of five (5) Trimesters and a six (6) 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 41 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**

<b>Code: DCE</b>		<b>TRADE DIPLOMA IN QUANTITY SURVEYING</b>	
<b>Year 1</b>			
<b>Trimester 1 – Stage 1</b>		<b>Trimester 2 – Stage 2</b>	
<b>Unit Code</b>	<b>Unit Title</b>	<b>Unit Code</b>	<b>Unit Title</b>
COM401 EEE450 ETH 401 MEC450 MTH405 PHY416 EEE470 MEC470 PHY403	Technical Communication Introduction Electrical & Electronic Engineering Introduction to Ethics, Values & Governance Engineering Graphics Engineering Mathematics 1 Engineering Physics Engineering Graphics Laboratory Electrical & Electronic Engineering Laboratory Engineering Physics Laboratory	CHM406 CIN445 MEC451 MEC452 OHS445 MTH504 CHM470 CIN470 MEC470	Engineering Chemistry Introduction to Computer Programming Engineering Mechanics Workshop Practice Occupational Health & Safety Engineering Mathematics 2 Engineering Chemistry Laboratory Introduction to Computer Programming Laboratory Engineering Mechanics Laboratory
<b>Year 1</b>			
<b>Trimester 3 – Stage 3</b>			
<b>Unit Code</b>	<b>Unit Title</b>		
DEN400 DEN401 DEN402 DEN404 DEN405 DEN406 DEN407 DEN403	Civil Engineering Technology Computer Aided Design I Materials for Construction Construction Technology Theory I Construction Technology Practice I Land Surveying Theory Land Surveying Practice Materials for Construction Laboratory		
<b>Year 2</b>			
<b>Trimester 1- Stage 4</b>		<b>Trimester 2 – Stage 5</b>	
<b>Unit Code</b>	<b>Unit Title</b>		
DEN 500 DEN 504 DEN 501 DEN 502 DEN 510 DQS 502 DEN 513	Building Services Building Regulation Computer Aided Design II Construction Technology II Measurement I Quantity Surveying Practice Tendering & Estimating	DQS 503 DQS 504 DEN 506 DEN 503 DEN 504 DEN 505	Quantity Surveying Project I Quantity Surveying Project II Project Organization Construction Technology III Measurement II 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 – Stage 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							
		<b>Subtotal</b>							
Year 1, Trimester 2 – Stage 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							
		<b>Subtotal</b>							
Year 1, Trimester 3 – Stage 3	DCE400	Civil Engineering Technology	4	1		60	95	155	10
	DEN401	Computer Aided Design 1		1	4	60	96	156	10
	DEN402	Materials for Construction	3	1		48	55	103	7
	DEN404	Construction Technology Theory I	3	1		48	55	103	7
	DEN406	Land Surveying Theory	3	1		48	55	103	7
	DEN403	Materials for Construction Laboratory			3	36	10	46	3
	DEN405	Construction Technology Practice 1			3	36	10	46	3
	DEN407	Land Surveying Practice			3	36	16	52	3
		<b>Subtotal</b>	<b>13</b>	<b>5</b>	<b>13</b>	<b>372</b>	<b>391</b>	<b>764</b>	<b>50</b>
Year 2, Trimester 1 – Stage 4	DEN 500	Building Services	4	1		60	60	120	8
	DEN 504	Building Regulation	4	1		60	60	120	8
	DEN 501	Computer Aided Design 2		1	4	60	60	120	8
	DEN 502	Construction Technology II	4	1		60	60	120	8
	DEN 510	Measurement 1	4	1		60	50	110	7
	DQS 502	Quantity Surveying Practice	3	1		48	35	83	6
	DEN 513	Tendering & Estimating	3	1		48	35	83	6
		<b>Subtotal</b>	<b>22</b>	<b>7</b>	<b>4</b>	<b>396</b>	<b>360</b>	<b>756</b>	<b>50</b>
Year 2 Trimester 2 – Stage 5	DBG 503	Building Project 1		1	4	60	70	130	9
	DBG 504	Building Project 2		1	4	60	70	130	9
	DEN 506	Project Organization	4	1		60	60	120	8
	DEN 503	Construction Technology III	4	1		60	70	130	9
	DQS 504	Measurement 2	4	1		60	60	120	8
	DEN 505	Specification Writing Practice	4	1		48	55	103	7
		<b>Subtotal</b>							<b>50</b>

**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
<b>Year 1</b>		
<b>Trimester 1 – Stage 1</b>		
COM401	Technical Communication	Form 6 Pass
EEE450	Electrical & Electronic Engineering	Form 6 Pass
ETH401	Introduction to Ethics, Values & Governance	Form 6 Pass
MEC450	Engineering Graphics	Form 6 Pass
MTH405	Engineering Mathematics 1	Form 6 Pass
PHY416	Engineering Physics	Form 6 Pass
EEE470	Electrical & Electronic Engineering Laboratory	Form 6 Pass
MEC470	Engineering Graphics Laboratory	Form 6 Pass
PHY403	Engineering Physics Laboratory	Form 6 Pass
<b>Trimester 2 – Stage 2</b>		
CHM406	Engineering Chemistry	Form 6 Pass
CIN445	Introduction to Computer Programming	MEC450
MEC451	Engineering Mechanics	PHY416
MEC452	Workshop Practice	EEE450
OHS445	Occupational Health & Safety	Form 6 Pass
MTH504	Engineering Mathematics 2	MTH405
CHM470	Engineering Chemistry Laboratory	Form 6 Pass
CIN470	Introduction to Computer Programming Laboratory	MEC470
MEC470	Engineering Mechanics Laboratory	PHY403
<b>Trimester 3 – Stage 3</b>		
DCE400	Civil Engineering Technology	MEC452
DEN401	Computer Aided Design I	MEC470
DEN402	Materials for Construction	CHM406
DEN404	Construction Technology Theory I	PHY416
DEN406	Land Surveying Theory	MTH504
DEN403	Materials for Construction Laboratory	CHM470
DEN405	Construction Technology Practice I	PHY403
DEN407	Land Surveying Practice	MTH504
<b>Year 2</b>		
<b>Trimester 1 – Stage 4</b>		
DEN 500	Building Services	DEN 403
DEN 504	Building Regulation	DEN 403
DEN 501	Computer Aided Design 2	DEN 401
DEN 502	Construction Technology II	DEN 404
DEN 510	Measurement 1	DEN 401
DBG 502	Project Supervision	DEN 404
DEN 513	Tendering & Estimating	DEN 404
<b>Trimester 2 – Stage 5</b>		
DQS 503	Quantity Surveying Project 1	
DQS 504	Quantity Surveying Project 2	
DEN 506	Project Organization	
DEN 503	Construction Technology III	
DQS 504	Measurement II	
DEN 505	Specification Writing Practice	



## **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 additional 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 units 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 later 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 Builders Association
- Private Companies
- Fiji Sugar Corporation