Bachelor of Technology
in
Construction Technology &
Resource Management

Student Handbook

Faculty of Industrial & Vocational Technology
University of Vocational Technology

March 2015

Rationale for the Construction Technology & Resource Management Degree:

In Sri Lankan construction industry gap exists between middle level technologically qualified personnel (middle level technicians) and graduates in Civil Engineering. Aim of this degree programme is to fulfill this gap. Graduates of the proposed degree need to be equipped with both theoretical and practical competencies required to manage construction sites which involves a multitude of stakeholders and resources.

This programme has been designed aiming at national needs while giving due consideration to global trends and practices in conjunction with construction industry personnel, professional bodies together with the academia in civil engineering and allied fields to ensure that their marketability both locally and internationally. Degree is aligned with the requirements of the Sydney Accord.

It covers the following aspects:

- Contract Administration
- Construction Law and Claim Management
- Building Economics
- Pre and Post Contract Management
- Measurements
- Micro tunneling,
- Tall & deep construction – Installation and use of tower cranes, complex shoring work, etc.
- Challenges in basement construction in restricted areas, Vertical transportation modes of material in high rise construction.
- Construction failures and temporary work failures and remedial methods
- Landslide mitigation techniques and flood protection methodologies
- Alternative material - novel solutions to scarcity

Admission Requirements:

i. NVQ level 5 or equivalent in Construction Technology

or

ii. HNDE, NDT, NDES, NDET or equivalent Diploma in Civil / Construction Technology

or

iii. Any other diploma of at least one year full time or equivalent part time in Civil/ Construction Technology offered by a TVEC registered training provider with 01 year of post – diploma Industry / teaching experience in the relevant field

or

iv. Any other qualification accepted by Academic Council of University of Vocational Technology

Exemptions may be granted in relevant modules after a proper evaluation for those who have NVQ level 6 or equivalent qualifications. Preference will be given to those applicants having post diploma industrial experience of at least one year.

Student Selection:

Eligible candidates are required to sit for aptitude test. Selection is done based on the marks obtain by the candidates.

Registration:

Registration is the acceptance of the selected applicant as a student in the University. Prior to registration the applicant is issued with an offer letter for a particular academic programme along with a voucher to pay the relevant course fee, of which following may be the constituents:

a) Registration fee – To be paid at the first registration and subsequently at re-registrations
b) Tuition fee
c) Facility fee
d) Library deposit (Refundable)
e) Library fees (nonrefundable)
f) Laboratory fee if applicable (nonrefundable)

The letter calling for registration will request the applicant to produce the original documents of the following:

a) School leaving certificate
b) National Identity Card or Passport
c) Birth Certificate
d) Certificates of all educational qualifications
e) Documents requested to be obtained from the employer
f) Any other documents depending on the study programme
g) Documentary evidence for the payment of the Registration fees, course fees, Library fees, etc.

University has no obligations to refund the above fees in case of a disqualification of an applicant for reasons due to lapse/s from the part of the applicant at the registration stage. The applicant who is duly registered for an academic programme shall become a student of the University and will receive a Student number and a Student Identification Card.

The selected candidate shall personally appear before the registration desk for registration, unless the provision is available for online registration.

Credit system and the Duration:

The course structure is based on module system. Each module has been assigned a Credit Value, depending upon the number of notional hours required to achieve the outcome of the module. Notional hours include directed learning as well as self-directed learning. This system is bench marked with the European Credit Transfer and Accumulation System (ECTS).

Duration of the degree program is 3 academic years. One academic year consists of two semesters. One semester may consist of 15 weeks for weekday programmes and 22 weekends for weekend programmes. Total notional hours per semester, is 750. A total of 25 notional hours is equal to 01 credit. Total number of credits per semester is 30.

B. Tech. in Construction Technology & Resource Management degree is a 3 year full time course.

Course Structure:

Module Code:

CT10505	-	CT	-	Department offering the module
		1	-	Semester
		05	-	Number of Credits
		05	-	Serial number of the module

Module Type:

The degree consist of Compulsory (C) modules, Elective (E) modules and Optional (O) modules. Core compulsory modules and Elective modules designated as GPA modules will be used to calculate the grade point averages.

C - Compulsory
E - Elective
O - Optional
G - GPA
NG - Non GPA

Module Code	Module Title	Type	Credits	Year I		Year II		Year III	
				S-I	S-II	S-I	S-II	S-I	S-II
SM10682	Mathematics for Construction Technology	C/G	6	√					
LS10509	Communication Skills	C/G	5	√					
CT10505	Construction materials	C/G	5	√					
CT10506	Hydraulics and hydrology	C/G	5	√					
CT10507	Soil Mechanics and Geotechniques	C/G	5	√					
EE10404	Applied Electricity	C/G	4	√					
CT20603	Construction Technology- I	C/G	6		√				
CT20604	Mechanics of solids and Structural Analysis	C/G	6		√				
CT20405	Highway Engineering	C/G	4		√				
CT20406	Water Resource Engineering	C/G	4		√				
CT20407	Introduction to Landscaping	C/G	4		√				
CT20608	Estimating & Tendering in Construction	C/G	6		√				
CT30406	Building Services	C/G	4			√			
CT30607	Construction Economics and Accounting	C/G	6			√			
CT30608	Surveying & Leveling (+ Camp)	C/G	6			√			
CT30409	Design of Structural Elements	C/G	4			√			
CT30410	ICT Application in Construction	C/G	4			√			
CT30611	Application of Architecture and Urban Planning	C/G	6			√			
CT40406	Construction Law & Professional Ethics	C/G	4				√		
CT40607	Construction Technology II	C/G	6				√		
CT40408	Construction Planning and Management	C/G	4				√		
CT40609	Application of Environment Science	C/G	6				√		
CT40410	Construction contract administration	C/G	4				√		
CT40611	Research Methodology and concept design of projects	C/G	6				√		
CT51891	Work Based Training	C/G	18					√	
CT50202	Project Proposal formulation	C/G	2					√	
CT61891	Final Year project	C/G	18						√
IT60290	Photography	E/NG	2						√
MS30412	Entrepreneurship development	E/NG	2						√
CT60605	Project Management	C/G	6						√
CT60606	**Highway & Railway Infrastructure (Elective)	C/G	6						√
CT60607	**Water Resources and Coastal Infrastructure(Elective)	C/G	6						√
CT60608	**High Rise buildings(Elective)	C/G	6						√

Work Based / Industrial Training:

Fifth semester of the study programme is dedicated to this component of the degree. Purpose of this module is to enable students to apply competencies required through the academic programme to workplace experiences.

Students studying the degree during weekdays will be placed in various industrial establishments/worksites related to their fields of studying for a period of six months through National Apprentice and Industrial Training Authority (NAITA) under undergraduate in plant training scheme.

Those who are studying during weekends are required to undertake work based training in their places of work, under supervision of a senior officer. Work undertaken during this period should be different from the normal routine work which he/she is supposed to attend in his/her job.

Final Year Project:

This module is given in the sixth semester. This is a group project, which provides opportunity for the students to enhance their ability in problem solving, team work and leadership competencies acquired, throughout the undergraduate career.

To successfully complete this module students are expected to design and implement a challenging engineering project applying realistic constraints and engineering standards within a given timeframe and present technical ideas in written and oral form effectively.

Course Assessment System:

The performance of each student in each module will be evaluated by continuous assessments and a semester-end examination.

The weightings assigned for the continuous assessment component and the semester - end examination of a module will be as follows.

* Continuous Assessment 40% - 70%
* Semester - End Examination 60% - 30%

- The continuous assessment may consist of assignments, quizzes, laboratory work, practical, tutorials, demonstrations, presentations, projects, oral tests and mid semester tests. Weightings of each of these components used in the determination of the final grade for each module should be clearly conveyed in writing to the students at the commencement of each module along with the outline of the module.

- The students should maintain 80% of attendance and satisfy the requirements specified in each module descriptor to be eligible to sit for the semester-end examination.

- All Candidates should obtain at least 30% of the marks allocated for continuous assessment to get qualified to sit for the semester - end examination.

Grading System and Computation of Grade Point Average (GPA):

A letter grade shall be awarded to each module. The cut-off marks for each grade and the corresponding grade points are given below.

Grades	Marks	Grade Point
A+	90 or above	4.00
A	80 – 89	3.70
B+	70 – 79	3.30
B	60 – 69	3.00
C+	50 – 59	2.70
C	40 – 49	2.00
D	30 – 39	1.00
E	01 – 29	0.00
F	0	0.00

1. Grade D or above is required to earn credits for a module.

2. A minimum 30% should be obtained from continuous assessment for eligibility to sit for the end semester exam.

3. A minimum requirement of 30% should be obtained from the semester - end Examination in order to obtain a grade D or above for a module.

4. A student satisfying continuous assessment requirements and getting between 1 – 29 marks for the semester end examination receives a symbol as E(ET) while a student getting 0 for the semester end examination receives symbol F(ET). A student satisfying semester end examination requirements and getting between 1 and 29 marks for the continuous assessment receives a symbol as E(CA) a student getting 0 for the continuous assessment receives symbol as F(ET). A student getting between 1 and 29 marks for both the semester end examination & the continuous assessment receives the Grade E while a student getting 0 for both the semester end examination & continuous assessment receives the Grade F. A student must repeat the part of the module examination/complete module examination having Grade E or F & must improve up to Grade D or C. The modules having Grade D are allowed to repeat only when the Semester Grade Point Average (SGPA) of a particular semester is less than 2.00. By repeating only the semester end examination/continuous assessment or both, the Grades F, E or D can be improved only up to a C grade and considered for calculating Grade Point Average (GPA). Repeating continuous assessment or semester end examination is considered as repeating the whole module.

Academic Concession:

Academic Concession may be granted to a student with the approval of the Faculty Board, in the event that a student is unable to sit for the semester-end examination due to illness or other compelling reason. In such instances the student must notify the Dean of the faculty within 48 hours of the cause. Further, the student should make an appeal with supporting documents to the Dean for an Academic Concession within one week from the date of the examination. The continuous assessment component can be carried forward to the next examination as the first attempt.

Semester Grade Point Average (SGPA):

The calculation of the Semester Grade Point Average will be based on the Grade Points earned for all modules registered in a semester (except those awarded with academic concession) weighted according to number of credits. The SGPA is rounded to the nearest second decimal place. The SGPA is reported on transcripts and Statement of Results that may be issued for each semester.

The formula for calculating SGPA is given below.

$$\text{Semester GPA (SGPA)} = \frac{\Sigma\ (\text{Number of Credits for a semester module x Grade point obtained for the module})}{\text{Total number of credits for the Semester}}$$

Final Grade Point Average (FGPA):

The Final Grade Point Average is the absolute academic standing of the student calculated on the basis of SGPA. The FGPA will be calculated using the following formula.

$$\text{Final GPA (FGPA)} = \frac{\Sigma\ (\text{Semester GPA})}{\text{Number of Semesters}}$$

Unsatisfactory Standing on Academic Performance:

If the student's SGPA falls between 1.99 and 1.50 the student will be placed on Academic Warning.

A student who falls into one of the following categories of the SGPA will not be permitted to register for a new module until the SGPA is upgraded to 2.00 or more.

i. SGPA < 1.50 in any two semesters

ii. SGPA < 1.50 in any semester and 1.50 ≤ SGPA < 2.00 in any two semesters

iii. 1.50 ≤ SGPA < 2.00 in any three semesters

Graduation Requirements:

Credit Requirements:

A student should satisfy the following requirements in order to be admitted to the Bachelor of Technology in Construction Technology & Resource Management Technology.

(i) A minimum total of 180 credits from modules specified.

(ii) A minimum Final Grade Point Average (FGPA) of 2.00

(iii) Any other mandatory requirement specified by the Academic Council

Key to Final Results (FGPA – Final Grade Point Average):

FGPA	**Final Results**
3.7 or Above	First Class
3.30 – 3.69	Second Upper
2.70 – 3.29	Second Lower
2.00 – 2.69	Ordinary Pass
Below 2.00	Incomplete

Academic Calendar - 2015

Full Time - Week Days

Month	Duration	January				February				March					April				May				June					July					August					September					October					November				December				
Week		1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5
Exam - S2 (2014/2015) & Exam Board	26.01.2015 - 06.02.2015 & 02.04.2015																																																						
Exam - S4 (2013/2014) & Exam Board	05.02.2015 - 16.02.2015 & 23.04.2015																																																				
Exam - S6 (2011/2014) & Exam Board & Convocation	18.02.2015 - 27.02.2015 & 28.05.2015 & 22.07.2015																																																			
Selection Test - (2015/2016)	15.02.2015																																																			
Industry Training - S5 (2013/2014)	02.03.2015 - 20.09.2015																																																			
Registration (2015 / 2016)	09.03.2015																																																			
Foundation (2015 / 2016)	16.03.2015 - 24.04.2015																																																			
New Year Vacation	10.04.2015 - 20.04.2015																																																			
Academic Session - S1 (15/16) & S3 (14/15)	05.05.2015 - 21.08.2015																																																			
Study Leave	24.08.2015-04.09.2015																																																			
Exam - S1 (15/16) & S3 (14/15) & Exam Board	07.09.2015 - 18.09.2015																																																			
Vacation	21.09.2015 - 09.10.2015																																																			
Academic Session - S2 (15/16) & S4 (14/15) & S6 (13/14)	12.10.2015 - 23.01.2016																																																			

Part Time - Weekend

Month	Duration	January				February				March					April				May				June					July					August					September					October					November				December				
Week		1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5
Academic Session - S2 (14/15) & S4 (13/14)	03.01.2015 - 14.06.2015																																																					
Study Leave	20.06.2015 - 28.06.2015																																																				
Exam -S2 (14/15) & S4 (13/14) & Exam Board	04.07.2015 - 19.07.2015 & 27.08.2015																																																				
Vacation	25.07.2015 - 02.08.2015																																																			
Academic Session - S3 (14/15) & S5 (13/14)	08.08.2015 - 17.01.2016																																																			
Selection Test - 2015/2016	15.02.2015																																																			
Registration	14.03.2015																																																			
Foundation	21.03.2015 - 26.04.2015																																																			
New Year Vacation	18.04.2015 - 19.04.2015																																																			
Academic Session - S1 (15/16)	09.05.2015 - 11.10.2015																																																			
Study Leave	17.10.2015 - 18.10.2015																																																			
Exam - S1 (15/16)	24.10.2015 - 08.11.2015																																																			
Academic Session - S2 (15/16)	14.11.2015 - 17.04.2016																																																			