



THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

Department of Quantity Surveying

QSV 501 – Measurement and Specification of Construction Works 1

COURSE PARTICULARS

Course Code: QSV 501

Course Title: Measurement and Specification of Construction Works 1

No. of Units: 2

Course Duration: One hour of lecture and one hour of tutorial per week for 15 weeks.

Status: Compulsory

Course Email Address: qsv501@futa.edu.ng

Course Webpage: <http://www.qsv.futa.edu.ng/courseschedule.php?coursecode=QSV%20501>

Prerequisite: NIL

COURSE INSTRUCTORS

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COURSE DESCRIPTION

This course is a continuation of other measurement courses in the department. Other measurement courses had looked at measurement of building carcass. In this course, the students are exposed to detail measurement of services in buildings especially in the areas of mechanical installations. Furthermore students are introduced to the principles and methods of specification writing. Topics to be covered include measurement of demolition and alterations, spot items, mechanical engineering measurement- rain water and sanitary installations. Cold and hot water installations like pipe work, and sundries. Fire-fighting and hydraulic installation, compressed air and gas installations including the pipe work, equipment, installation and sundries. Principles and methods involved in the compilation of a specification for building and other engineering works. Objectives and purpose of specification. The specification as a contract document; legal tender; and working aspects. Schedules, sources of information, references. Outright and performance specifications, the use of prime cost and provisional sums.

COURSE OBJECTIVES

The objectives of this course are to:

- introduce students to engineering designs in building and other services in a complex building designs;
- provide students with opportunities to appreciate and interpret mechanical engineering design;
- provide students with opportunities to understand the different types of specification and how they are compiled;
- introduce the students to the use of PC and PS in the bills of quantities and to know how they can use these sums for effective monitoring and control of cost of building.

COURSE LEARNING OUTCOMES / COMPETENCIES

Upon successful completion of this course, the student will be able to:

(Knowledge based)

- appreciate engineering designs especially mechanical services;
- interpret the designs of these engineering services in buildings; and
- apply appropriate rules of measurement as contained in the BESMM 3 for their measurement;
- produce a draft bills of quantities for these engineering services; and
- appreciate the compilation and writing of specification notes.

(Skills)

- independently measure and prepare bill of quantities for:
 - rain water and sanitary installations;
 - cold and hot water installations;
 - Fire-fighting and hydraulic installation;
 - compressed air and gas installations including the pipe work, equipment, installation and sundries; and
- independently interpret and compile different types of specification ;
- understand the use of prime costs and provisional sums in building contracts.

GRADING SYSTEM FOR THE COURSE

This course will be graded as follows:

Class Attendance	5%
Assignments	20%
Test(s)	15%
<u>Final Examination</u>	<u>60%</u>
<u>TOTAL</u>	<u>100%</u>

GENERAL INSTRUCTIONS

Attendance: It is expected that every student will be in class for lectures and promptly too. Students will not be allowed to enter classroom 30 minutes after the commencement of every lecture, this is to prevent unnecessary distraction during lecture. Attendance records will be kept and used to determine each person's qualification to sit for the final examination. Attendance will be taken 5 minutes to the end of every lecture. In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with the instructor, indicating the reason for the absence.

Academic Integrity: Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances are prohibited. You are not allowed to make copies of another person's work and submit it as your own; that is plagiarism. All cases of academic dishonesty will be reported to the University Management for appropriate sanctions in accordance with the guidelines for handling students' misconduct as spelt out in the Students' Handbook.

Assignments and Group Work: Students are expected to submit assignments as scheduled. Failure to submit an assignment as at when due will earn such student zeros for that assignment. Only under extenuating circumstances, for which a student has notified any of the instructors in advance, will late submission of assignments be permitted.

Code of Conduct in Lecture Rooms and Laboratories: Students should turn off their cell phones or put them in silent mode during lectures. Students are prohibited from engaging in other activities (such as texting, pinging, watching videos, etc.) during lectures. Food and drinks are not permitted in the lecture room. Student will be given a break of 10 minutes in between lecture hours.

READING LIST

¹Seeley, I.H. & Winfield, R. (2005). *Building Quantities Explained*, 5th Edition. New York, Palgrave Macmillan.

¹The Nigerian Institute of Quantity Surveyors (2008). *Building and Engineering Standard Method of Measurement*, 3rd ed. Lagos, The Nigerian Institute of Quantity Surveyors.

⁴Ashworth, A. & Heath, B.C. (1983). *Advanced Quantity Surveying*. London, Butterworth and Co. Publishers.

⁴Oforeh, E.C & Alufohai, A.J. (2000). *Advanced Measurement of Building Works with an introduction to Computers and their application*. Lagos, Cosines Nig. Ltd.

⁴Murray, G. P. (1997). *Advanced Measurement of Building Works with an introduction to Computers and their application*. Palgrave Macmillan, Hampshire, UK. 158p.

Legend

- 1- Available in the University Library
- 2- Available in Departmental/School Libraries
- 3- Available on the Internet.
- 4- Available as Personal Collection
- 5- Available in local bookshops.

COURSE OUTLINE

Week	Topic	Remarks
1	Introduction and Course Overview	During this first class, the students will be introduced to the different sections of the BESMM3 that will be a guiding document for measurement. The expectation of the students from the course will also be documented.
2 & 3	Measurement of demolition and alterations	Practical examples will be used to measure items like removal of existing window, block openings, replace leaking roof etc.
4 & 5	Measurement of rain water and sanitary installations	Drawings will be provided in respect of this, and students will be taught how to measure items like the fittings and pipe work and other builder's work in connection.
6	Measurement of cold and hot water installations including the pipe works	
7 & 8	Measurement of fire fighting and hydraulic installations, Measurement of compressed air and gas installations including the pipe work, equipment installation.	Students will be given drawings to work on in group of three as an assignment.
		MID-SEMESTER TEST
9 & 10	Principles and methods involved in the compilation of a specification for building and other engineering works. Objectives and purpose of specification.	Students will be divided into groups and given elements in the building to write specification notes on.

11 & 12	The specification as a contract document; legal tender; and working aspects.	Students will be divided into groups and given elements in the building to write specification notes on.
13 & 14	Schedules, sources of information, references. Outright and performance specifications, the use of prime cost and provisional sums.	
15	Revision	This is the week preceding the final examination. At this time, evaluation will be done to assess how far the students' expectations for the course have been met.