

ARBE2301: Measurement of Building Works 1

Singapore BCA, Callaghan and Online
Semester 1 - 2024



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description	This course examines the process of building measurement and bills of quantity through the development and demonstration of 'essential skills'. Elements of measurement and bills of quantities in accordance with the Australian Standard Method of Measurement of Building Works (ASMM) will be applied.
Academic Progress Requirements	Nil
Requisites	<p>This course is only available to students enrolled in the Bachelor of Construction Management (Building) (Honours) [12331] OR Bachelor of Construction Management (Building) (Honours) [40374]</p> <p>Students not enrolled in the Bachelor of Construction Management (Building) (Honours) program must seek Program Convenor approval to enrol.</p>
Contact Hours	<p>Singapore BCA Lectorial Online 3 hour(s) per week(s) for 13 week(s) starting Week 1 Online students will receive equivalent instruction through online or other distance education strategies</p> <p>Callaghan Lectorial Face to Face On Campus 3 hour(s) per week(s) for 13 week(s) starting Week 1</p> <p>Online Lectorial Online 3 hour(s) per week(s) for 13 week(s) starting Week 1 Online students will receive equivalent instruction through online or other distance education strategies</p>
Unit Weighting Workload	<p>10 Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.</p>

COURSE OUTLINE

CONTACTS

Course Coordinator **Singapore BCA, Callaghan and Online**
Dr Buddhini Ginigaddara Appuhamilage
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(02) 4981 5973
Consultation: Appointment via email is encouraged.

Teaching Staff Other teaching staff will be advised on the course Canvas site.

School Office **School of Architecture and Built Environment**
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SYLLABUS

Course Content • Introduction to building measurement (Units of measurement, BQ format and ASMM)

- General rules of ASMM
- Taking off format and method
- Measurement process of groundworks
- Measurement process of concrete - insitu concrete
- Measurement process of concrete - formwork
- Measurement process of concrete - reinforcement
- Computer software for measurement and BQ preparation

Course Learning Outcomes **On successful completion of this course, students will be able to:**

1. Investigate the process of building measurement
2. Apply the rules for bills of quantities and ASMM
3. Prepare building measurement and bills of quantities for five major trades according to the ASMM: groundworks concrete/formwork/ reinforcement

Course Materials **Required Text:**

- Australian Institute of Quantity Surveyors, New Zealand Institute of Quantity Surveyors (Inc), Master Builders Australia and Registered Master Builders Association of NZ (Inc). (2022) *Australian and New Zealand Standard Method of Measurement of Building Works*, 2022 Ed. Sydney, NSW: AIQS, NZIQS, MBA & RMBANZ

OR

- Australian Institute of Quantity Surveyors, New Zealand Institute of Quantity Surveyors (Inc), Master Builders Australia and Registered Master Builders Association of NZ (Inc). (2018) *Australian and New Zealand Standard Method of Measurement of Building Works*, 2018 Ed. Sydney, NSW: AIQS, NZIQS, MBA & RMBANZ

Other Resources:

- Buildsoft Cubit - A student version of Buildsoft Cubit is available by completing the appropriate web link on Canvas

OR

- RIB CostX – An educational version of the RIB CostX is available via the appropriate web link on Canvas

SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	26 Feb	Introduction to Measurement of Building Works 1, Bills of Quantities (BOQ) preparation	Tutorial on calculations	
2	4 Mar	Introduction to Australian New Zealand Standard Method of Measurement (ANZSMM), Taking off quantities	Description Writing, Taking off quantities	
3	11 Mar	Groundworks (1 of 2)	Groundworks – site clearing, Geotechnical report	
4	18 Mar	Groundworks (2 of 2)	Groundworks - cut and fill	
5	25 Mar	Measurement Workshop on Groundworks	Measurement Workshop on Groundworks	Assessment 1 Online quiz (15%) 31 March 2024, 11.59pm
6	1 Apr	Introduction to measurement software	Assessment 2 Q&A	
7	8 Apr	Introduction to modern methods of construction	Guest lecture, Assessment 2 Q&A	
Mid-Semester Recess				
Mid-Semester Recess				
8	29 Apr	Concrete	Tutorial on concrete	Assessment 2 Groundworks (40%) 28 April 2024 11.59pm
9	6 May	Formwork	Tutorial on formwork	
10	13 May	Reinforcement	Tutorial on reinforcement	
11	20 May	Measurement Workshop on Concrete, Formwork and Reinforcement	Measurement Workshop on Concrete, Formwork and Reinforcement	
12	27 May	Q&A Session		
13	3 Jun	Q&A Session		Assessment 3 Concrete, Formwork, Reinforcement (45%) 31 May 2024, 11.59pm
Examination Period				
Examination Period				

ASSESSMENTS

This course has 3 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Online quiz	Between 15 March 2024 and 31 March 2024, 11.59pm	Individual	15%	1, 2, 3
2	Measurement of Groundworks	28 April 2024, 11.59pm	Individual	40%	1, 2, 3
3	Measurement of Concrete, Formwork and Reinforcement	31 May 2024, 11.59pm	Individual	45%	1, 2

Late Submissions

The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 10% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Online quiz

Assessment Type	Quiz
Description	The quiz will consist of multiple-choice questions to be completed in a set time. The quiz will be conducted online through Canvas. The quiz will be available for 17 days, and students will be able to access the quiz any time within the available period. Students are required to complete the quiz within the specified time in one sitting.
Weighting	15%
Due Date	Between 15 March 2024 and 31 March 2024, 11.59pm
Submission Method	Online
Assessment Criteria	Access to the quiz will be in the "Assessment" area on Canvas
Return Method	Multiple Choice
Feedback Provided	Not Returned
	Online

Assessment 2 - Measurement of Groundworks

Assessment Type	Report
Description	Preparation of BOQ for Groundworks. Refer to the "Assessment 2 - Detailed Brief" document on Canvas
Weighting	40%
Due Date	28 April 2024, 11.59pm
Submission Method	Online
Assessment Criteria	In the "Assessment" area on Canvas
Return Method	Refer to the "Assessment 2 - Detailed brief" document on Canvas for details
Feedback Provided	Not Returned
	Online

Assessment 3 - Measurement of Concrete, Formwork and Reinforcement

Assessment Type	Report
Description	Taking off quantities and BoQ preparation for concrete, formwork and reinforcement using Cubit software. Refer to the "Assessment 3 - Detailed brief" document on Canvas
Weighting	45%
Due Date	31 May 2024, 11.59pm
Submission Method	Online
Assessment Criteria	In the "Assessment" area on Canvas
Return Method	Refer to the "Assessment 3 - Detailed brief" on Canvas for details
Feedback Provided	Not Returned
	Online

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Communication Methods

Communication methods used in this course include:

- Canvas Course Site: Students will receive communications via the posting of content or announcements on the Canvas course site.
- Email: Students will receive communications via their student email account.

Course Evaluation

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

Oral Interviews (Vivas)

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the [Oral Examination \(viva\) Procedure](#). In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the [Student Conduct Rule](#).

Academic Misconduct

All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. For the Student Academic Integrity Policy, refer to <https://policies.newcastle.edu.au/document/view-current.php?id=35>.

Adverse Circumstances

The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:

1. the assessment item is a major assessment item; or
2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;
3. you are requesting a change of placement; or
4. the course has a compulsory attendance requirement.

Before applying you must refer to the Adverse Circumstance Affecting Assessment Items Procedure available at:

<https://policies.newcastle.edu.au/document/view-current.php?id=236>

**Important Policy
Information**

The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures at <https://www.newcastle.edu.au/current-students/respect-at-uni/policies-and-procedures> that support a safe and respectful environment at the University.

This course outline was approved by the Head of School. No alteration of this course outline is permitted without Head of School approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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