

ARBE3101: Performance and Sustainability of the Built Environment

Singapore BCA, Callaghan and Online
Semester 1 - 2024



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

OVERVIEW

Course Description	This course explores the modern and future built environment through the impact of construction and design decision-making at a global, national and local level. Elements of evaluation, rating, health of buildings and occupants historically and practically are investigated for sustainable and resilient buildings and communities. The philosophies, experiences and resources of our First Nations peoples and the United Nations Sustainable Development Goals provides the lens through which these issues are investigated.
Academic Progress Requirements	Nil
Requisites	You cannot enrol in this course if you have successfully completed ARBE4101.
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	10 Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

COURSE OUTLINE

CONTACTS

Course Coordinator **Singapore BCA, Callaghan and Online**
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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

1. Introduction to the United Nations Sustainable Development Goals
2. Applicability of the Sustainable Development Goals to the design and construction of the future built environment
3. Introduction to evaluation/rating tools for sustainable design and construction to support the Sustainable Development Goals
4. Concepts and principals of resilience
5. Acoustic principles and requirements of common interior environments.
6. Artificial lighting principles and requirements of common interior environments
7. Daylighting principles and requirements of common environments
8. Wellness and Indoor Environment Quality in the built environments
9. Place. Access, Equity and Community in the built environments
10. Indigenous philosophies of space, place, and time
11. First Nations culturally safe evaluation principles and practices
12. Concepts and principals of post occupancy evaluation
13. Water sovereignty and First Nations water rights in Australia

Course Learning Outcomes

On successful completion of this course, students will be able to:

1. Discuss the history of colonial invasions and their ongoing impacts on First Nations peoples, cultures and resources and how a global framework for sustainable development can respectfully engage with First Nations peoples and cultures
2. Identify the relationship between a global framework for sustainable development and improving the built environment in Australia
3. Apply decisions about the sustainable design and construction of buildings supported by an appropriate evaluation/rating tool
4. Recall knowledge of Indoor Environmental Quality for the planning of internal environments
5. Apply actions required for maintaining and monitoring building performance and sustainability

Course Materials

SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	26 Feb	Module 0: Course Introduction & What to Expect	Lecture Material & Tutorial	
2	4 Mar	Module 1: Sustainability and Indigenous Knowledges and Practices	Lecture Material & Tutorial	
3	11 Mar	Module 1: Sustainability and Indigenous Knowledges and Practices	Lecture Material & Tutorial	Assessment 1 Quiz 1 Opens Friday 15th March at 5pm.
4	18 Mar	Module 2: Energy, Water and Waste	Lecture Material & Tutorial	Assessment 1 Quiz 1 Closes Friday 22 nd March at 11:59pm.
5	25 Mar	Module 2: Energy, Water and Waste	Lecture Material & Tutorial	
6	1 Apr	Module 2: Energy, Water and Waste	Lecture Material & Tutorial	
7	8 Apr	Module 3: Indoor Environment Quality (IEQ)	Lecture Material & Tutorial	Assessment 2 Report Due by Saturday 13th April by 11:59pm
Mid-Semester Recess				
Mid-Semester Recess				
8	29 Apr	Module 3: Indoor Environment Quality (IEQ)	Lecture Material & Tutorial	Assessment 3 Quiz 2 Opens Friday 3rd May at 5pm.
9	6 May	Module 4: Place, Equity, Access and Community, Biophilic Design and Biomimicry	Lecture Material & Tutorial	
10	13 May	Module 4: Place, Equity, Access and Community, Biophilic Design and Biomimicry	Lecture Material & Tutorial	
11	20 May	Module 5: Post Construction and Post Occupancy Evaluation	Lecture Material & Tutorial	
12	27 May	Module 5: Post Construction and Post Occupancy Evaluation	Lecture Material & Tutorial	
13	3 Jun	Review & Semester Wrap-Up		Assessment 3 Quiz 2 Closes Wednesday 5th June at 11:59pm Assessment 4 Report: Due by Wednesday 5 th June 11:59pm
Examination Period				
Examination Period				

ASSESSMENTS

This course has 4 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Assessment Item 1: Online Quiz	Open from Friday 15th March 2024 at 5pm until Friday 22nd March 2024 at 11:59pm	Individual	15%	1
2	Assessment Item 2: Professional Report	Saturday, 13th April, 2024 by 11:59pm	Individual	40%	1, 2, 3
3	Assessment Item 3: Online quiz	Open from Friday 3rd May 2024 at 5pm until Wednesday 5th of June 2024 at 11:59pm.	Individual	10%	4
4	Assessment Item 4: Professional Report	Wednesday 5th June 2024 by 11:59pm	Individual	35%	1, 5

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 - Assessment Item 1: Online Quiz

Assessment Type	Quiz
Purpose	To demonstrate an understanding of the of Module One content, including: <ul style="list-style-type: none"> - The UN Sustainable Development Goals, and their relevance to the built environment, - Sustainability and traditional Indigenous Knowledge and practice.
Description	This is an online multiple-choice quiz consisting of 20 multiple choice questions, testing your knowledge and understanding of module 1 course content.
Weighting	15%
Length	20 multiple choice questions in 35 minutes
Due Date	Open from Friday 15th March 2024 at 5pm until Friday 22nd March 2024 at 11:59pm (one week)
Submission Method	Online
Assessment Criteria	Accessed via link in Assignment menu within Canvas. Follow instructions as appropriate. The question provides the criteria, and the mark constitutes the provided feedback. Answers can be discussed with more nuance in the relevant discussion board on Canvas.
Return Method	Not Returned
Feedback Provided	Feedback on performance is provided immediately on completion of the quiz. Students will be advised of their overall score, and will be able to view their quiz responses, including their incorrect responses, once after each attempt.
Opportunity to Reattempt	Students WILL be given the opportunity to reattempt this assessment.

Assessment 2 - Assessment Item 2: Professional Report

Assessment Type	Written Assignment
Purpose	The purpose of this assessment is to evaluate the students' ability to analyse environmental problems in construction related to the Sustainable Development Goals, develop and justify solutions, and effectively communicate these through a professionally structured and written report.
Description	In this written assessment, you will step into the role of a consultant at Econsult, focusing on a project that addresses environmental challenges in the construction sector, in line with the Sustainable Development Goals. Your task involves developing solutions to these challenges and articulating them in a well-structured professional report. This report should provide a thorough background, justify your proposed solutions, and offer clear recommendations.

Details of the problem scenario are available in the Assessment Item 2 Briefing document,

located in the Assessments tab on Canvas. This briefing should cover all necessary information, but if you identify any gaps, you are encouraged to make informed assumptions. These assumptions should be clearly explained and justified within your report.

The course places significant emphasis on the development of academic and professional writing skills. Key aspects of this include the ability to structure your report effectively, maintaining conciseness and relevance in your discussion, and employing appropriate citation and referencing techniques.

Your report will be assessed based on several criteria, including the clarity and conciseness of your writing, the ability to identify and articulate key issues, the structure and persuasiveness of your argument, the development and viability of your solutions, evidence of critical and relevant reading, depth of analysis, and the clear explanation of any assumptions made.

Please note that the report should meet these objectives within a 3000-word limit. This word count excludes the executive summary, diagrams, tables, figures, footnotes, and the reference list, focusing on the main body of your report.

By adhering to these guidelines, you will demonstrate your capacity to analyse environmental issues in construction critically and communicate your findings and recommendations effectively in a professional context.

Weighting
Length
Due Date
Submission Method

40%
Minimum 1500 words (maximum 3000 words)
Saturday, 13th April, 2024 by 11:59pm
Online
Online Submission Guidelines

Formatting & Referencing:

- Your report should follow a structured format with numerically hierarchical headings and subheadings.
- Ensure all sources are correctly referenced (APA 7 format)
- Figures and tables must be numbered, have clear titles, and be integrated within the report's main body.

Submission Format:

- Prepare your assignment in A4 format.
- Submit electronically as a Word or PDF file via Turnitin.
- Use the following naming convention for your file:
"<YOURSURNAME_INITIAL_COURSECODE>.doc" or
"<YOURSURNAME_INITIAL_COURSECODE>.pdf".
- Beware of file size. Try to keep your file size under 1.0MB. If including photos or digital media, compress them to 72dpi using software of your choice, or the software embedded in MS Word.
- It's crucial that submitted files are in a format compatible with Microsoft/Mac Word or Adobe PDF.

Document Style Guide:

- Use 1.5 line spacing with 12-point Times New Roman font.
- Do not indent paragraphs; instead, separate them with two line breaks.
- Incorporate illustrations directly within the text.
- Apply numbered headings and subheadings consistent with report formatting.

Submission Time and Location:

- All assignments must be submitted through the Turnitin link in the Assessment tab on Canvas.

- Adhere to the specified submission time and date for each assignment.

Note: Electronic submissions will be graded as submitted. It is your responsibility to ensure the readability and compatibility of your documents in the required formats.

Assessment Criteria

Criterion 1: Choose and justify your choice of an appropriate rating tool.

Criterion 2: Choose the energy and water related credits or petals and discuss how you would advise the client and designers to address key issues to attain the best outcome for the energy and water related credits/petals.

Criterion 3: Detail how adopting one of these tools will address any of the Sustainable Development Goals.

Criterion 4: Organisation of Report and Quality of Writing.

Return Method

Refer to Marking Rubric under the relevant "Assignments" tab on Canvas.

Feedback Provided

Online

Online - 3 weeks from submission. A marked rubric with overall commentary on how the submission has or has not addressed the criteria.

Opportunity to Reattempt

Students WILL NOT be given the opportunity to reattempt this assessment.

Assessment 3 - Assessment Item 3: Online quiz

Assessment Type

Quiz

Purpose

To demonstrate an understanding of the of Module Three content covering Indoor Environmental Quality.

Description

This is an online multiple-choice quiz consisting of 20 multiple choice questions, testing your knowledge and understanding of Module 3 course content.

Weighting

10%

Length

20 multiple choice questions in 35 minutes

Due Date

Open from **Friday 3rd May 2024 at 5pm** until **Wednesday 5th of June 2024 at 11:59pm**.

Submission Method

Online

Accessed via link in Assignment menu within Canvas. Follow instructions as appropriate.

Assessment Criteria

The question provides the criteria, and the mark constitutes the provided feedback. Answers can be discussed with more nuance in the relevant discussion board on Canvas.

Return Method

Not Returned

Feedback Provided

Feedback on performance is provided immediately on completion of the quiz. Students will be advised of their overall score, and will be able to view their quiz responses, including their incorrect responses, once after each attempt.

Opportunity to Reattempt

Students WILL be given the opportunity to reattempt this assessment.

Assessment 4 - Assessment Item 4: Professional Report

Assessment Type

Written Assignment

Purpose

To demonstrate their understanding of post-occupancy evaluation, sustainable performance, and resilience in building design by developing and justifying a comprehensive professional report on a real-world case study.

Description

As an Econsult employee, your project involves conducting a Post-Occupancy Evaluation (POE) for the Speers Point Park Multi Arts Centre. This requires selecting a POE method, advising on its scope, and suggesting resilience and sustainability strategies in construction. Detailed guidance is provided in the Assessment Item 4 Briefing document on Canvas.

You're expected to write a professional report, including background, justification, and recommendations for your solutions, aligning with the Sustainable Development Goals. If necessary, make and justify any assumptions due to missing information.

The report should be well-structured, clear, concise, and appropriately referenced, with a word limit of 2500 words, excluding executive summary and other ancillary elements. This assessment emphasises your academic and professional writing skills in addressing environmental issues in construction.

Weighting

35%

Length

Minimum 1500 words (maximum 2500 words)

Due Date **Wednesday 5th June 2024 by 11:59pm**
Submission Method Online
Online Submission Guidelines

Formatting & Referencing:

- Your report should follow a structured format with numerically hierarchical headings and subheadings.
- Ensure all sources are correctly referenced (APA 7 format)
- Figures and tables must be numbered, have clear titles, and be integrated within the report's main body.

Submission Format:

- Prepare your assignment in A4 format.
- Submit electronically as a Word or PDF file via Turnitin.
- Use the following naming convention for your file:
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- Beware of file size. Try to keep your file size under 1.0MB. If including photos or digital media, compress them to 72dpi using software of your choice, or the software embedded in MS Word.
- It's crucial that submitted files are in a format compatible with Microsoft/Mac Word or Adobe PDF.

Document Style Guide:

- Use 1.5 line spacing with 12-point Times New Roman font.
- Do not indent paragraphs; instead, separate them with two line breaks.
- Incorporate illustrations directly within the text.
- Apply numbered headings and subheadings consistent with report formatting.

Submission Time and Location:

- All assignments must be submitted through the Turnitin link in the Assessment tab on Canvas.
- Adhere to the specified submission time and date for each assignment.

Note: Electronic submissions will be graded as submitted. It is your responsibility to ensure the readability and compatibility of your documents in the required formats.

Assessment Criteria

Criterion 1: Choose and justify a particular method for undertaking a POE (Course Objective 5).

Criterion 2: Advise and justify to the building owners the extent of the POE you recommend (full blown or small and targeted) and following your advice discuss the process required giving some examples of why and how some specific tools (interviews, measurements, observations, etc..) might be used. (Course Objective 5)

Criterion 3: Investigate how the building can be constructed for resilience (Course Objective 2)

Criterion 4: Organisation of report and Quality of writing (Course Objective 5)

Return Method Refer to Marking Rubric under the relevant "Assignments" tab on Canvas.
Feedback Provided Online
Online - 3 weeks from submission. A marked rubric with overall commentary on how the submission has or has not addressed the criteria.

Opportunity to Reattempt Students WILL NOT be given the opportunity to reattempt this assessment.

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;

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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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