UNSW Course Outline

BLDG3012 Risk, Health & Safety Management - 2024

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General Course Information

Course Code : BLDG3012
Year : 2024
Term : Term 1
Teaching Period : T1
Is a multi-term course? : No
Faculty : Faculty of Arts, Design and Architecture
Academic Unit : School of Built Environment
Delivery Mode : Multimodal
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

Risk, Health & Safety Management covers effective project risk management, encompassing qualitative and quantitative risk assessment methodologies, as well as potential risk treatment options like contingency allowances. Project risk management, an iterative process, aids

organisations in strategising, goal attainment, and informed decision-making from project initiation to completion.

You will learn about selecting and applying risk assessment techniques adhering to industry standards. These techniques assist in decision-making amid uncertainty, provide insights into specific risks, and form part of a risk management process. You will also learn standard risk assessment tools and business analytics, such as Palisade @Risk software and Microsoft Project (MSP). These methods will inform intelligent engineering and construction risk-based decisions throughout project development and delivery.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Explain risks and uncertainties in relation to stakeholders' objectives within the process of risk management.
CLO2 : Develop and apply tools to assess risks and contingencies for construction projects.
CLO3 : Analyse and evaluate risks and contingencies applicable in commercial construction projects.
CLO4 : Explain risk and contingency planning for implementation in the construction industry.
CLO5 : Formulate and present a project risk management plan for a commercial construction project.

Course Learning Outcomes	Assessment Item
CLO1 : Explain risks and uncertainties in relation to stakeholders' objectives within the process of risk management.	• Risk Management Plan (RMP) Development
CLO2 : Develop and apply tools to assess risks and contingencies for construction projects.	• Risk Management and Contingency Determination • Risk Management Plan (RMP) Development
CLO3 : Analyse and evaluate risks and contingencies applicable in commercial construction projects.	• Risk Management and Contingency Determination • Risk Management Plan (RMP) Development
CLO4 : Explain risk and contingency planning for implementation in the construction industry.	• Risk Management and Contingency Determination • Risk Management Plan (RMP) Development
CLO5 : Formulate and present a project risk management plan for a commercial construction project.	• Risk Management Plan Presentation

Learning and Teaching Technologies

Moodle - Learning Management System | Blackboard Collaborate | Microsoft Teams | Echo 360

Learning and Teaching in this course

To increase the learning outcomes of this course, the students are also expected to draw on materials from other references and guidelines including academic journals, standards, guide notes and reference document both within and outside the field of construction management.

Additional Course Information

To achieve the Course Learning Outcomes (COLs), the expected workload for students is approximately 150 hours including class contact hours, weekly individual and group online learning activities, readings, class preparation, and assessment activities.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Risk Management and Contingency Determination Assessment Format: Individual	25%	Start Date: Week 1 Due Date: Week 5: 11 March - 17 March
Risk Management Plan (RMP) Development Assessment Format: Individual	60%	Start Date: Week 5 Due Date: Week 11: 22 April - 28 April
Risk Management Plan Presentation Assessment Format: Individual	15%	Start Date: Week 5 Due Date: Week 11: 22 April - 28 April

Assessment Details

Risk Management and Contingency Determination

Assessment Overview

You will prepare a risk contingency and matrix for a commercial construction project. Grading will be done against assessment criteria accompanied by written feedback.

Course Learning Outcomes

- CLO2 : Develop and apply tools to assess risks and contingencies for construction projects.
- CLO3 : Analyse and evaluate risks and contingencies applicable in commercial construction projects.
- CLO4 : Explain risk and contingency planning for implementation in the construction industry.

Detailed Assessment Description

Note: Full details of assessments are provided separately (available on Moodle).

Assessment information

Note: Full details of assessments are provided separately (available on Moodle).

Assignment submission Turnitin type

This is not a Turnitin assignment

Risk Management Plan (RMP) Development

Assessment Overview

You develop a Risk Management Plan (RMP) for a commercial construction project. Grading will be done against assessment criteria accompanied by written feedback. Verbal feedback will also be provided in class.

Course Learning Outcomes

- CLO1 : Explain risks and uncertainties in relation to stakeholders' objectives within the process of risk management.
- CLO2 : Develop and apply tools to assess risks and contingencies for construction projects.
- CLO3 : Analyse and evaluate risks and contingencies applicable in commercial construction projects.
- CLO4 : Explain risk and contingency planning for implementation in the construction industry.

Detailed Assessment Description

Note: Full details of assessments are provided separately (available on Moodle).

Assessment information

Note: Full details of assessments are provided separately (available on Moodle).

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Risk Management Plan Presentation

Assessment Overview

You will present your developed Risk Management Plan (RMP) in the form of a video. Grading will be done against assessment criteria. Verbal feedback will be provided by the lecturer and tutors after the presentations.

Course Learning Outcomes

- CLO5 : Formulate and present a project risk management plan for a commercial construction

project.

Detailed Assessment Description

Note: Full details of assessments are provided separately (available on Moodle).

Assessment information

Note: Full details of assessments are provided separately (available on Moodle).

Assignment submission Turnitin type

This is not a Turnitin assignment

General Assessment Information

Submission of Assessment Tasks

All assessment tasks must be submitted via either Turnitin or a Moodle assignment. In instances where this is not possible, it will be stated on your course's Moodle site with alternative submission details.

You are advised to submit well before the deadline to avoid unanticipated submission errors. Always retain a copy of work submitted, and keep all drafts, original data and other evidence of the authenticity of your work for at least one year after assessment. If an assessment is mislaid you are responsible for providing a further copy.

For information on how to submit assignments online via Moodle:

https://student.unsw.edu.au/howsubmit-assignment-moodle

Feedback is an indispensable part of assessment. All assessment tasks include written provided feedback. In addition to the feedback strategy for assessment tasks, students will be encouraged to ask questions during lectures and tutorials and the lecturer will be available for questions directly after class.

Feedback Mechanism

1. **Assessment 1**

Mechanism: Written feedback in Moodle and group discussion in class

Delivery date: Within 12 working days of submission as per UNSW Assessment Procedure

2. Assessment 2

Mechanism: Written feedback in Moodle and group discussion in class

Delivery date: Within 12 working days of submission as per UNSW Assessment Procedure

3. Assessment 3

Feedback mechanism: Written feedback in Moodle

Delivery date: Within 15 working days of submission as per UNSW Assessment Procedure

Grading Basis

Standard

Requirements to pass course

see Moodle.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 0 : 5 February - 11 February	Other	Introductory activity • Welcome students • Course introduction
Week 1 : 12 February - 18 February	Lecture	Topic: Introduction to Project Risk Management • Course introduction • Risk management as part of project management • Overview of risk management standards • Overview of the risk managanemt process
	Tutorial	• Assessment 1 hand-out and introduction / Q&A • Development of risk management tools
Week 2 : 19 February - 25 February	Lecture	Topic: The Risk Management Process • Key definitions • Classification of risks • Risk management tools (manual and digital) • Risk-based decision-making techniques • The risk management plan (RMP)
	Tutorial	• Application of risk management tools • Prepration of base schedule • Preparation of base estimate
Week 3 : 26 February - 3 March	Lecture	Topic: Contingency Management • Schedule contingency management • Cost contingency management • Tutorials
	Tutorial	• Cost and schedule contingency determination • Cost and schedule contingency allocation • Cost and schedule contingency control
Week 4 : 4 March - 10 March	Lecture	Topic: Quantitative Risk Analysis (QRA) (Cost and Schedule) with First Principles Risk Analysis (FPRA) - I • Overview • Development of analysis model • Preparation and validation of base estimate • Preparation and validation of base schedule
	Tutorial	• Due date reminder and consultation for Assessment 1 • QRA (Cost and Schedule) case study
Week 5 : 11 March - 17 March	Lecture	Topic: Quantitative Risk Analysis (QRA) (Cost and Schedule) with First Principles Risk Analysis (FPRA) - II • Inherent risks • Contigent risks
	Tutorial	Note: Due date for Assignment 1 • Assessment 2 & 3 hand-out and introduction / Q&A • QRA (Cost and Schedule) case study
Week 6 : 18 March - 24 March	Other	Flexibility Week Note: this is the FINAL cut-off date for being in a group for Assessment 2 and 3.
Week 7 : 25 March - 31 March	Lecture	Topic: Construction Health and Safety - I • History and overview of work health and safety (WHS) management in the construction industry • WHS standards and legislation • WHS models and theories • Physical health and safety (safety management, culture, and climate)
	Tutorial	• Consultation for Assessment 2 & 3 • Case study - physical health and safety
Week 8 : 1 April - 7 April	Other	Note: Public Holiday (no lectures and tutorials)
Week 9 : 8 April - 14 April	Lecture	Topic: Construction Health and Safety - II • Mental health and safety standards and legislation • Mental health models and theories • Mental health (conditions and outcomes, psychosocial hazards, supportive factors, coping practices) • Interventions for promoting WHS
	Tutorial	• Consultation for Assessment 2 & 3 • Case study - mental health and safety

Week 10 : 15 April - 21 April	Lecture	Revision • Summary of project risk management • Summary of WHS in the construction industry • The future of construction risk, health and safety management
	Tutorial	• Due date reminder for Assessment 2 & 3 • Final consultation for Assessment 2 & 3
Week 11 : 22 April - 28 April	Assessment	Assessment 2 & 3 due date: 28 April 2024.

Attendance Requirements

You are expected to be regular and punctual in attendance at all classes for the School of Built Environment courses in which you are enrolled. If and where individual courses have specific attendance requirements, these will be stated in the course outline.

If you do not attend, engage, or participate in scheduled class activities, including lectures, tutorials, studios, labs, etc, you run the risk of failing a course.

If illness or unexpected and beyond your control circumstances prevent you from completing a task on time, or substantially disturb your assessment performance, you should apply for Special Consideration, as soon as practicable, accompanied by appropriate documentation.

No special consideration will be provided if you miss out on essential course information and materials, or if you miss assessment tasks and deadlines due to unexplained absences or an unapproved lack of attendance.

You may be advised by the Course Convenor to withdraw from the course if significant learning activities are missed.

Course Resources

Prescribed Resources

- ISO 31000:2018
- ISO 31010:2019
- Project Management Institute (PMI) Risk Management Standard
- Project Management Institute (PMI) Schedule Management Standard
- Risk Engineering Society (RES) Contingency Guideline, 2nd Edition, 2019

Recommended Resources

- AACEi, Recommended Practices
  - No. 71R-12, Required Skills and Knowledge of Decision and Risk Management
  - No. 85R-14, Use of Decision Trees in Decision Making
  - No. 41R-08, Risk Analysis and Contingency Determination using Range Estimating

- No. 42R-08, Risk Analysis and Contingency Determination using Parametric Estimating
- No. 43R-08, Risk Analysis and Contingency Determination using Expected Value
- No. 57R-09, Integrated Cost and Schedule Risk Analysis using Monte Carlo Simulation of a CPM Model
- No. 62R-11, Risk Assessment: Identification and Qualitative Analysis
- No. 63R-11, Risk Treatment
- No. 64R-11, CPM Schedule Risk Modelling and Analysis: Special Considerations
- No. 66R-11, Selecting Probability Distribution Functions for use in Cost and Schedule Risk Simulation Models
- No. 71R-12, Required Skills and Knowledge of Decision and Risk Management
- No. 72R-12, Developing a Project Risk Management Plan

- Cognitive and Motivational Biases in Decision and Risk Analysis, Gilberto Montibeller and Detlof von Winterfeldt, Risk Analysis, Vol. 35, No 7, 2015
- Edwards, P J and Bowen, P A (2005) Risk management in project organisations, UNSW Press,
- Uher, T and Loosemore, M (2004) Essentials of project management, UNSW Press.
- Boothroyd, C and Emmett, J (1996) Risk management – a practical guide for construction professionals, Witherby and Co, London.
- Wideman, R M (ed) (1992) Project and program risk management, PMI, London.
- ICE (2000) Risk analysis and management for projects, ICE and Institute of Actuaries, London.
- Edwards, L (1995) Practical risk management in the construction industry, Thomas Telford, London.

- Frimpong, S., Sunindijo, R.Y., Wang, C.C., Hon, C.K.H., Boadu, E.F., Dansoh, A., Yiu, . (Kenneth) T.W., 2023. Developing and validating a positive mental health scale for the global south construction industry: the construction industry positive mental health inventory (CI-PMHI). *Construction Innovation*. DOI: 10.1108/ci-06-2023-0139.
- Frimpong, S., Sunindijo, R.Y., Wang, C.C., Boadu, E.F., Dansoh, A., and Fagbenro, R.K., 2023. A scoping review of research on mental health conditions among young construction workers. *Construction Innovation*, DOI: 10.1108/CI-06-2023-0133.
- Frimpong, S.; Sunindijo, R.Y., Wang, C.C., Boadu, E.F., Hon, C., Dansoh, A., and Yiu, T.W., 2023. Promoting positive mental health among young construction workers: the role of theory. *Construction Management and Economics*, DOI: 10.1080/01446193.2023.2267137
- Frimpong, S.; Sunindijo, R.Y., Wang, C.C., Boadu, E.F., and Dansoh, A., 2023. A conceptual framework to promote the transition to positive mental health among young construction workers. *Buildings*. 13, 1025. doi:10.3390/buildings13041025.
- Fagbenro, R.K., Sunindijo, R.Y., Illankoon, C., Frimpong, S., 2023. Influence of prefabricated construction on the mental health of workers: systematic review. *Eur. J. Investig. Health Psychol. Educ.*, 13, 345–363. https://doi.org/ 10.3390/ejihpe13020026.
- Frimpong, S.; Sunindijo, R.Y.; Wang, C.C.; Boadu, E.F.; Dansoh, A.; Fagbenro, R.K., 2023. Coping with psychosocial hazards: a systematic review of young construction workers' practices and their determinants. *Buildings*, 13, 22. https://doi.org/10.3390/ buildings13010022
- Zhang, S., Sunindijo, R.Y., Frimpong, S., Su, Z., 2023. Work stressors, coping strategies, and poor mental health in the Chinese construction industry, *Safety Science*, 159, 106039, https://

doi.org/10.1016/j.ssci.2022.106039.

Course Evaluation and Development

We encourage and support students to maintain regular contact with the course convenor to provide informal feedback throughout the course. For specific issues or detailed feedback, please arrange a meeting with the course convenor via email.

In this course there is an option for students to provide anonymous feedback via the course's Moodle page, which is directly sent to the convenor. As a final step, students are invited to share their insights and experiences by completing the MyExperience survey. The feedback gathered each year is integral to the continuous enhancement and development of the course.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Samuel Fr impong		Anita B. Lawrence Building – (S-17, 1010, Level 1)		By appointment – organise via email.	Yes	Yes
Tutor	Elijah Boa du				By appointment – organise via email.	No	No

Other Useful Information

Academic Information

Due to evolving advice by NSW Health, students must check for updated information regarding online learning for all Arts, Design and Architecture courses this term (via Moodle or course information provided).

Please see: https://www.unsw.edu.au/arts-design-architecture/student-life/resources-support/protocols-guidelines for essential student information relating to:

- UNSW and Faculty policies and procedures;
- Student Support Services;
- Dean's List;
- review of results;
- credit transfer;
- cross-institutional study and exchange;
- examination information;
- enrolment information;
- Special Consideration in the event of illness or misadventure;

- student equity and disability;

And other essential academic information.

Academic Honesty and Plagarism

Plagiarism is using the words or ideas of others and presenting them as your own. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement.

UNSW groups plagiarism into the following categories:

- Copying: Using the same or very similar words to the original text or idea without acknowledging the source or using quotation marks. This includes copying materials, ideas or concepts from a book, article, report or other written document, presentation, composition, artwork, design, drawing, circuitry, computer program or software, website, internet, other electronic resource, or another person's assignment without appropriate acknowledgement.
- Inappropriate paraphrasing: Changing a few words and phrases while mostly retaining the original information, structure and/or progression of ideas of the original without acknowledgement. This also applies in presentations where someone paraphrases another's ideas or words without credit and to piecing together quotes and paraphrases into a new whole, without appropriate referencing.
- Collusion: Working with others but passing off the work as a person's individual work. Collusion also includes providing your work to another student for the purpose of them plagiarising, paying another person to perform an academic task, stealing or acquiring another person's academic work and copying it, offering to complete another person's work or seeking payment for completing academic work.
- Inappropriate citation: Citing sources which have not been read, without acknowledging the "secondary" source from which knowledge of them has been obtained.
- Duplication ("self-plagiarism"): Submitting your own work, in whole or in part, where it has previously been prepared or submitted for another assessment or course at UNSW or another university.

The UNSW Academic Skills support offers resources and individual consultations. Students are also reminded that careful time management is an important part of study. One of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and proper referencing of sources in preparing all assessment items. UNSW Library has the ELISE tool available to assist you with your study at UNSW. ELISE is designed to introduce new students to studying at UNSW, but it can also be a great refresher during your study.

Completing the ELISE tutorial and quiz will enable you to:

- analyse topics, plan responses and organise research for academic writing and other assessment tasks
- effectively and efficiently find appropriate information sources and evaluate relevance to your needs
- use and manage information effectively to accomplish a specific purpose
- better manage your time
- understand your rights and responsibilities as a student at UNSW
- be aware of plagiarism, copyright, UNSW Student Code of Conduct and Acceptable Use of UNSW ICT Resources Policy
- be aware of the standards of behaviour expected of everyone in the UNSW community
- locate services and information about UNSW and UNSW Library

Use of AI for assessments

As AI applications continue to develop, and technology rapidly progresses around us, we remain committed to our values around academic integrity at UNSW. Where the use of AI tools, such as ChatGPT, has been permitted by your course convener, they must be properly credited and your submissions must be substantially your own work.

In cases where the use of AI has been prohibited, please respect this and be aware that where unauthorised use is detected, penalties will apply.

Use of AI for assessments | UNSW Current Students

Submission of Assessment Tasks

Turnitin Submission

If you encounter a problem when attempting to submit your assignment through Turnitin, please telephone External Support on 9385 3331 or email them on externalteltsupport@unsw.edu.au

Support hours are 8:00am – 10:00pm on weekdays and 9:00am – 5:00pm on weekends (365 days a year). If you are unable to submit your assignment due to a fault with Turnitin, you may apply for an extension, but you must retain your ticket number from External Support (along with any other relevant documents) to include as evidence to support your extension application. If you email External Support, you will automatically receive a ticket number, but if you telephone, you will need to specifically ask for one. Turnitin also provides updates on their system status on Twitter.

Generally, assessment tasks must be submitted electronically via either Turnitin or a Moodle

assignment. In instances where this is not possible, alternative submission details will be stated on your course's Moodle site. For information on how to submit assignments online via Moodle: https://student.unsw.edu.au/how-submit-assignment-moodle

Late Submission Penalty

UNSW has a standard late submission penalty of:

- 5% per calendar day,
- for all assessments where a penalty applies,
- capped at five calendar days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Students are expected to manage their time to meet deadlines and to request Special Consideration as early as possible before the deadline. Support with Time Management is available here.

School Contact Information

beadmin@unsw.edu.au