

School of Civil and Environmental Engineering Term3, 2021 CVEIS101

# ENGINEERING PERATION SND CONTROL

| COURSE DETAIL   | S                       |                    |                 |                |   |  |  |
|-----------------|-------------------------|--------------------|-----------------|----------------|---|--|--|
| Units of Credit | 6                       |                    |                 |                |   |  |  |
| Contact hours   | 6 h                     | 6 hours per week   |                 |                |   |  |  |
| Lecture         | Mo                      | on, 10:0           | 0 – 12:00       | Online         | e |  |  |
|                 | We                      | ed, 13:0           | 0 – 15:00       | Online         | 9 |  |  |
| Workshop        | Th                      | u, 14:0            | 0 – 16:00 (6413 | )              |   |  |  |
|                 | Th                      | u, 14:0            | 0 – 16:00 (6414 | .)             |   |  |  |
|                 | Th                      | u, 14:0            | 0 – 16:00 (6415 | 5)             |   |  |  |
|                 | Th                      | u, 16:0            | 0 – 18:00 (6417 | ·)             |   |  |  |
|                 | Th                      | u, 16:0            | 0 – 18:00 (6418 | 5)             |   |  |  |
|                 | Fri                     | , 11:0             | 0 – 13:00 (6407 | ·)             |   |  |  |
|                 | Fri                     |                    |                 |                |   |  |  |
|                 | Online                  |                    |                 |                |   |  |  |
|                 | Online                  |                    |                 |                |   |  |  |
|                 | Online                  |                    |                 |                |   |  |  |
|                 | Online<br>Online        |                    |                 |                |   |  |  |
| Course Coordin  | ator <sub>line</sub> Dr | . Khalegh          | Barati          |                |   |  |  |
| and Lecturer    | Online En               | nail: <u>khale</u> | gh.barati@unsv  | <u>.edu.au</u> |   |  |  |
|                 |                         | fice: CE20         | 9               |                |   |  |  |
| Lecturer        | Dr                      | Dr. Khalegh Barati |                 |                |   |  |  |
|                 | Dr                      | . Johnson          | nson Shen       |                |   |  |  |
|                 | Mr                      | . Robert H         | loldom          |                |   |  |  |
|                 |                         |                    |                 |                |   |  |  |

#### INFORMATION ABOUT THE COURSE

This course is an introduction to general principles of construction organisation and control of engineering operations. It starts by looking at cost estimation, safety issues, and quality management in construction projects. This course also addresses project management concepts including PMBOK review, management tools, project scheduling and resource planning. Additional issues considered in the course include important engineering economic, contract management, and risk management topics. Finally, the course covers engineering ethics and its principles in construction industry.

HANDBOOK DESCRIPTION

See link to virtual handbook:

https://www.handbook.unsw.edu.au/undergraduate/courses/2021/CVEN3101

#### OBJECTIVES

The aim of this course is to provide and introduction to engineering operations and to develop the understanding of the importance and application of these functions to the successful delivery of construction projects. The course achieves this through a combination of lecture presentations, workshops and assessment exercises that are designed to introduce students the general management and engineering principles and enable them to critically reflect on how these principles are employed in the real world. Upon completion of this subject, students are expected to be able to:

- Define the scope of construction engineering and management operations
- Appreciate the key aspects of project management including time, cost, safety, and quality
- Identify and explain key theories and concepts of project management and planning based of PMBOK standard
- Use project management tools such as Gantt chart and CPM charts
- Understand the elements of engineering economics and risk management
- Understand the role and significance of ethics in engineering professionalism
- Explain different types of project delivery systems and contracts

#### TEACHING STRATEGIES

The teaching strategies that will be used and their rationale. Give some suggested approaches to learning in the course.

| Private Study     | Review lecture material and textbook               |
|-------------------|----------------------------------------------------|
|                   | Do set problems and assignments                    |
|                   | Join Moodle discussions of problems                |
|                   | Reflect on class problems and assignments          |
|                   | Download materials from Moodle                     |
|                   | Keep up with notices and find out marks via Moodle |
| Lectureha2tureha2 | naź                                                |

CVEN3101 - Term 3 2021 -

#### ASSESSMENT

Assessment of this course comprises of an Individual Assignment in two parts, a Mid-term Examination, and a Final Examination.

#### 1. Individual Assignment

This submission is to be your own work and provides students the opportunity to work independently. Each student needs to nominate a construction project and prepare an Engineering Report on the project management, safety, quality, and ethics issues. Detailed description of the assignment and instruction of Engineering Report preparation will be provided in the Moodle. Each student is required to submit a pdf version of their assignment onto the Moodle by the due date.

#### 2. Mid-term Exam ination

## ASSESSMENT OVERVIEW

Item Length Weighting

# RELEVANT RESOURCES

#### Textbook:

There is no prescribed textbook for this course

#### Moodle:

This subject has a Moodle site. It will contain additional resources for you.

## DATES TO NOTE

Refer to MyUNSW for Important Dates available at: <u>https://student.unsw.edu.au/dates</u>

**Program Intended Learning Outcomes** PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals PE1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing PE1: Knowledge and Skill Base PE1.3 In-depth understanding of specialist bodies of knowledge PE1.4 Discernment of knowledge development and research directions PE1.5 Knowledge of engineering design practice PE1.6 Understanding of scope, principles, norms, accountabilities of sustainable engineering practice PE2.1 Application of established engineering methods to complex problem solving PE2: Engineering Application Ability PE2.2 Fluent application of engineering techniques, tools and resources PE2.3 Application of systematic engineering synthesis and design processes PE2.4 Application of systematic approaches to the conduct and management of engineering projects PE3.1 Ethical conduct and professional accountability PE3.2 Effective oral and written communication (professional and lay domains) and Personal Attributes PE3: Professional PE3.3 Creative, innovative and pro-active demeanour PE3.4 Professional use and management of information PE3.5 Orderly management of self, and professional conduct PE3.6 Effective team membership and team leadership