Annexe A: New/Revised Course Content in OBTL+ Format

Course Overview

The sections shown on this interface are based on the templates UG OBTL+ or PG OBTL+
If you are revising/duplicating an existing course and do not see the pre-filled contents you expect in the subsequent sections e.g. Course Aims, Intended Learning Outcomes etc. please refer to Data Transformation Status for more information.

Expected Implementation in Academic Year	AY2023-2024
Semester/Trimester/Others (specify approx. Start/End date)	Semester 1
Course Author * Faculty proposing/revising the course	Lee-Chua Lee Hong
Course Author Email	clhlee@ntu.edu.sg
Course Title	Project Planning & Management
Course Code	CV4012
Academic Units	2
Contact Hours	26
Research Experience Components	Not Applicable

Course Requisites (if applicable)

Pre-requisites	
Co-requisites	
Pre-requisite to	
Mutually exclusive to	
Replacement course to	
Remarks (if any)	

Course Aims

The course content comprises main body of knowledge in project planning and management with essential components in management principles, overview of Government Acts & Regulations that governs the engineers' practice in the Construction Industry, project planning and management techniques, financial planning and management, time-cost trade off, cost estimating, scheduling and resources management.
This course aims to develop your understanding about how the Construction Industry operates and the role you would play as an engineer. It equips you with strong fundamental in project planning, management & control as well as sound industry practice. It supports and enables you to pick up quickly and make good progress with comprehensive perspectives in their career development.

Course's Intended Learning Outcomes (ILOs)

Upon the successful completion of this course, you (student) would be able to:

ILO 1	Explain how the construction industry works, various functional roles within the industry, roles of important government agency and regulatory approvals required for construction projects.
ILO 2	Apply appropriate techniques to carry out project scheduling and planning, and estimate project duration.
ILO 3	Perform project control, resource planning and predict peak demand of key resource requirement.
ILO 4	Perform cost estimate, work out financial schedules, optimise on project Cost-Time aspects.
ILO 5	Conduct cash flow analysis and profit analysis.
ILO 6	Managing framework for quality and safety management in a construction project.

Course Content

No	Topic	Lecture Hour	Tutorial Hour
1	Overview of construction management functions and team members	2	1
2	Government Acts & Regulation for Construction Practice	2	1
3	Project Planning & Control Techniques for scheduling including CPM, LOB, Bar-Chart	4	2
4	Resource Planning & Management, Project Control	4	2
5	Project Financial planning, Cost estimating, Cost-Time analysis, Cash flow analysis	4	2
6	Project quality and safety management	2	-
	Total	**18**	**8**

Reading and References (if applicable)

1. Website: https://sso.agc.gov.sg/Index
2. URA websites
3. BCA website
   a. Guide on Construction of Industrial Developments in Singapore, BCA, 2010 https://www.bca.gov.sg/Publications/others/Guide_on_Construction_of_Industrial_Develoments_in_Singapore.pdf
4. Saleh Mubarak, *Construction Project Scheduling & Control*, 3rd Ed, Wiley, 2015
5. Jimmie W. Hinze, *Construction Planning and Scheduling*, 3rd Ed, Pearson Prentice Hall, 2008

Planned Schedule

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
1	Introduction to Construction Management & Construction Industry	1		In-person	Lectures & Discussions
2	Gov't legislation, PE Act, Building Control Act, Planning Act	1		In-person	Lectures & Discussions
3	Project Planning tools – bar chart, network diagram, CPM	2		In-person	Lectures & Examples
4	Other tools – PDM, Line of Balance	2		In-person	Lectures & Examples
5	Resource Management	3		In-person	Lectures & Examples
6	Progress review & Control	3		In-person	Lectures & Examples
7	Project cash flow, Cost-Time planning	4,5		In-person	Lectures & Examples
8	Financial Management, Cost Control	4,5		In-person	Lectures & Examples
9	Project Quality and Safety management	6		In-person	Lectures

Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Lectures	Weekly lectures to provide students with the necessary knowledge to achieve the learning outcomes
Worked examples	Worked examples are embedded within lectures and tutorials to enable the students to appreciate the application of the knowledge into practice
Quizzes	Continual assessments to enhance students understanding and ability to apply principles learned during lectures and tutorials

Assessment Structure

Assessment Components (includes both continuous and summative assessment)

No.	Component	ILO	Related PLO or Accreditation	Weightage	Team/Individual	Rubrics	Level of Understanding
1	Continuous Assessment (CA): Test/Quiz(CA1: Quiz 1)	1 & 2	a, b, f, h, k	20	Individual	Analytic	Multistructural
2	Continuous Assessment (CA): Test/Quiz(CA2: Quiz 2)	3,4,5,6	a, b, f, h, k	20	Individual	Analytic	Multistructural
3	Summative Assessment (EXAM): Final exam(FInal Examination)	1,2,3,4,5,6	a, b, f, h, k	60	Individual	Holistic	Relational

Description of Assessment Components (if applicable)

Engineering Knowledge
Apply the knowledge of mathematics, natural science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems.

Problem Analysis
Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

Design / Development of Solutions
Design solutions for complex engineering problems and design systems, components or processes that meet the specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

Investigation
Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

Modern Tool Usage
Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

The Engineer and Society
Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
Environment and Sustainability
Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for the sustainable development.

Ethics
Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

Individual and Team Work
Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.

Communication
Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

Project Management and Finance

Demonstrate knowledge and understanding of the engineering management principles and economic decision-making, and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

Life-long Learning
Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Formative Feedback

Quiz feedback will be given to students for the common mistakes during lecture class.

NTU Graduate Attributes/Competency Mapping

This course intends to develop the following graduate attributes and competencies (maximum 5 most relevant)

Attributes/Competency	Level
Collaboration	Intermediate
Decision Making	Intermediate
Problem Solving	Intermediate
Transdisciplinarity	Basic
Project Management	Intermediate

Course Policy

Policy (Academic Integrity)

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values. As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the academic integrity website for more information. On the use of technological tools (such as Generative AI tools), different courses / assignments have different intended learning outcomes. Students should refer to the specific assignment instructions on their use and requirements and/or consult your instructors on how you can use these tools to help your learning. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Policy (General)

As a student of the course, you are required to abide by both the University Code of Conduct and the Student Code of Conduct. The Codes provide information on the responsibilities of all NTU students, as well as examples of misconduct and details about how students can report suspected misconduct. The university also has the Student Mental Health Policy. The Policy states the University's commitment to providing a supportive environment for the holistic development of students, including the improvement of your mental health and wellbeing.

Policy (Absenteeism)

Policy (Others, if applicable)

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