CA6120: VALUE MANAGEMENT FOR CONSTRUCTION

Effective Term
Semester B 2024/25

Part I Course Overview

Course Title
Value Management for Construction

Subject Code
CA - Civil and Architectural Engineering
Course Number
6120

Academic Unit
Architecture and Civil Engineering (CA)

College/School
College of Engineering (EG)

Course Duration
One Semester

Credit Units
3

Level
P5, P6 - Postgraduate Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
BC6120 Value Management for Construction

Exclusive Courses
Nil

Part II Course Details

Abstract

The course aims to apply systematic decision techniques in an inter-disciplinary professional context for solving the construction problems.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Solve construction problems by systematic job plan;		x		
2	Analyze functions of construction projects or components;			x	x
3	Allocate cost and worth to functions identified;			x	x
4	Stimulate wild ideas by creative techniques in developing alternatives;			x	x
5	Develop proposals for each evaluated alternatives; and				x
6	Present VM proposal appropriately.				x

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lecture	Topics related to each phase of the job plan	1, 2, 3, 4, 5	
2	Workshop	Students need to work for a project based on the knowledge learned	1, 2, 3, 4, 5, 6	
3	Presentation	Students need to present their work frequently	2, 3, 4, 5, 6	

Additional Information for LTAs

Semester Hours: 3 hours per week
Lecture/Tutorial/Laboratory Mix: Lecture (1); Tutorial (2); Laboratory (0)

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Quiz	1, 2, 3	20	
2	Assignment	1, 2, 3, 4, 5, 6	60	

Continuous Assessment (%)

80

Examination (%)

20

Examination Duration (Hours)

1

Additional Information for ATs

Coursework: 80% (20% test; 60% assignment) * For coursework assessment, a real project is conducted throughout the semester

To pass a course, a student must obtain minimum marks of 30% in both coursework and examination components, and an overall mark of at least 40%

Assessment Rubrics (AR)

Assessment Task

Quiz (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Ability to understand the job plan and analyze the function and the cost in VM concept

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Assignment (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Attitude to raise questions from the given information for the real project
Ability to adopt various VM techniques for solving practical problems
Accomplish to enhance the project value

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Examination (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion
Attitude to discover the hidden value from the scenarios
Capacity to discuss the problem solving based on VM knowledge
Ability to adopt various VM techniques for solving practical problems
Accomplish to enhance the project value

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Quiz (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Ability to understand the job plan and analyze the function and the cost in VM concept

Excellent
(A+, A, A-) High

Good
(B+, B) Significant

Marginal
(B-, C+, C) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task

Assignment (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Attitude to raise questions from the given information for the real project
Ability to adopt various VM techniques for solving practical problems
Accomplish to enhance the project value

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

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Assessment Task

Examination (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Attitude to discover the hidden value from the scenarios
Capacity to discuss the problem solving based on VM knowledge
Ability to adopt various VM techniques for solving practical problems
Accomplish to enhance the project value

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(B-, C+, C) Basic

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(F) Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

VE history
Job Plan
Functional analysis: customer/task FAST diagram, technical FAST diagram
Cost analysis: pareto's law, cost model, life-cycle cost model
Creative technique: two cardinal ground rules, brainstorming technique, Gordon technique
Evaluation: trade-off analysis, paired comparisons, evaluation matrix

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Bytheway C.W. (2007) FAST, creativity and Innovation. U.S.A.: J.Ross Publishing.
2	Dell'Isola, A. (1997) Value Engineering: Practical Applications. Kingston, Mass.: R.S. Means Company.
3	Kelly, J. (2003) Value Management of Construction Projects, Oxford: Blackwell Science
4	Kelly, J. and Male, S. (1993) Value Management in Design and Construction. U.K.: E & FN Spon
5	Park, D.E. (1985) Value Engineering Theory, Lawrence D. Miles Foundation, U.S.A.: Washington DC
6	Woodhead R., McCuish J (2002) Achieving Results - How to Create Value.London: Thomas Telford Publishing.
7	Zimmerman, L.W. and Hart, G.D (1992) Value engineering: a practical approach for owners, designers, and contractors. New York: Van Nostrand Reinhold
8	Value Management: its Place in the Construction Industry [videorecording], London: Einstein Network
9	SAVE International Conference Proceedings, USA: SAVE
10	HKIVM International Conference Proceedings, HK: HKIVM
11	The Value Manager. H.K.: Hong Kong Institute of Value Management
12	Value World, Irving, Tex, U.S.A. : Society of American Value Engineers
13	Lawrence Delos Miles Value Foundation , http://www.valuefoundation.org/
14	SAVE International "The Value Society", http://www.value-eng.org/
15	The Institute of Value Management , http://www.ivm.org.uk/
16	Value Engineering Analysis and Management Academic Community, http://www.brookes.ac.uk/other/veamac/
17	Hong Kong Institute of Value Management , http://www.hkivm.com.hk/
18	Behaviour Construction Management , http://bcm.cityu.edu.hk/