香 港 大 學
THE UNIVERSITY OF HONG KONG

The semester and year that the course is expected to be offered as a CI-Badged Course

Communication-intensive Course (CI Course) Certification Form

Course Code	Course Title	Course Coordinator	Expected Offering Year & Semester	Badging Type	
CIVL3103	Construction Project Management	Dr. LEUNG Chun Yu Cliff	Sem 1 & 2, 2023-24	☑	**New Course**
				☐	**Renewal**

Communication 'Literacies' - In which literacy areas do students on the course develop and demonstrate communication-related *knowledge* (understanding of communication as it relates to human interaction), *skills* (skills in communicating effectively with others, using language and/or other means) and *attributes* (the attributes of effective communicators)? Please select at least two and put a tick (✓) in the boxes.

	***Oral literacy*:** The ability to communicate through spoken texts that are constructed with the appropriate content, structure and language features, fit for their intended professional purpose and audience.
✓	***Written literacy***: The ability to communicate through written texts that are constructed with the appropriate content, structure and language features, fit for their intended professional purpose and audience.
✓	***Visual literacy***: The ability to communicate in speech and writing through appropriate visual modes (e.g., diagrams, graphs, charts) and/or visual media (e.g., posters, 3-D printed objects, stage performances).
	Digital literacy: The ability to use appropriate information and communication technologies to find, evaluate, create, and communicate information in speech and writing (e.g., wikis, websites, virtual reality projects).

Ensure that each selected literacy is explicitly taught and assessed in the course.

Course Learning Outcomes – Please list the course learning outcome(s) that relate explicitly to students' learning of communication-related knowledge, skills and attributes. The following are examples from four different courses:

Students will be able to…

Oral literacy: *Apply the basic principle of solution-focused interviewing and counselling and demonstrate interviewing and counse*

Writte*ientific literature review on a key regional geological issue and present the findin**nd an engaging, comprehensive online written format.*

Oral/written literacy: *Generate and refine designs into detailed engineering specifications and be able to effectively communicate and defend the project status and technical material in both oral and written forms.*

Oral/written/digital literacy: *Create design documentation, technical design documents, art 'bibles' and other pertinent technical documents and present these through a formal pitch presentation and website.*

Copy and paste from your course outline and modifying to clearly show communication literacies.

CLO6. Design effective solutions for construction development projects by adopting the latest construction practices and technologies learned in the course, and be able to convey such solutions in the form of reports and visual aids (e.g. engineering drawings and posters).

= written literacy
= visual literacy

Assessment component – Please list the communicati*on-related course learning outcomes on the course. Please indicate*ormance on the assessment(s).

Please only include the CIC related assessments. Indicate the percentage in brackets *and include a brief description of each CIC related assessment.*

Assignments A and C include tasks that allow written a*

For assessment of **written literacy:**

Assignment	Tasks in the assignment that assess written literacy
Assignment A	Preparation of a written design report (worth 25%)
Assignment C	Preparation of a technical memorandum (worth 5%)

See below for visual literacy.

For assessment of **visual literacy**:

Assignment	Tasks in the assignment that assess visual literacy
Assignment A	Preparation of a poster (worth 10%)

The tasks listed above are worth a total of 40% of the final grade, which is the minimum requirement for a CIC course.

Please refer to sample CiC Syllabus Statements to complete this section. After badging approval, this section will appear in your course syllabus and read by students.

What communication knowledge and skills will students learn in this course?

Students will learn written and visual communication skills in this course. Further elaboration is below.

Written communication skills – students will learn how to convey their engineering design, the results from their analyses, and the solutions that they formulated through a professional design report and technical memorandum. The importance of the logical flow of content, formatting to professional standards, and use of tables and figures for rationalizing design options will be emphasized.

Visual communication skills – students will learn how to develop captivating posters to convey their idea in a concise manner that could be understood by the general public. This skill would be useful to students as posters are often used in real-life works projects and public consultations as a means of communication with the general public.

How will students learn these? Describe (1) the teaching and le ation knowledge and skills, (2) practice activities in your course and (

The answers to these questions will appear in the CiC Badge. The CiC Badge must be included in the course outline to inform students that they are taking a CiC Course.

Students are required to complete assignments that involve the p memorandum, and posters to convey their engineering design and solution in this course. These assignments allow students to practice and develop their written and visual communication skills. Students will have the opportunity to submit a draft report, memorandum, and a poster for feedbacks before the submission of the final version.

Prior to the release of those assignments aforementioned above, tutorials on the preparation of a technical report and memorandum will be provided. In these tutorials, students will learn:

- the content and structure expected in a technical engineering report and memorandum;
- how to use tables and figures effectively to present design options and to support design rationale;
- how to properly format a report / memorandum to professional standards; and
- how to present and arrange critical information on a poster that captivates readers (may need to seek support from an expert in CIC team)

Exemplars from published papers will be provided and discussed during the tutorials.

What does a good communicator look like in this course? – Please list the expected communication-related attributes you want your students to have after taking your course (e.g. confidence, openness to diverse perspectives and ways of learning, ability to respond to constructive criticism from peers and the teacher, developing interpersonal skills to collaborate with others to achieve a common goal, collaboration with peers, providing constructive feedback to peers, following the conventions of a genre, and having personal and academic integrity).

Students should have gained confidence and have the ability in preparing a structured engineering report that allows critical design information, analysis results, design rationale, and the finalized design to be logically presented.
Students should also have gained the ability in using visual aids to translate abstract design information that could be understood by a layperson.

Please attach the following documents with this certification form (tick included items):

	Please tick below
Course Syllabus (track changes version)	✓
Course Schedule (please highlight the CIC components i.e. where and when in the course the students will acquire the specific knowledge, and develop the specific skills required of a good communicator)	✓
Assessment Tasks/Instructions and Rubrics	✓

Submit all documents to the CIC committee (cics@hku.hk).

Faculty of Engineering
The University of Hong Kong

CIVL3103 CONSTRUCTION PROJECT MANAGEMENT

Course Outline

Course code:	CIVL3103
Course title:	Construction Project Management
Offered by (department):	Department of Civil Engineering
Level:	3
Credit units:	6
Pre-requisite course code:	Nil
Co-requisite course code:	Nil
Learning hours:	Lecture (39 hours)
Student quota:	Nil
Course type:	Elective
Offer in academic year:	Both semesters
Assessment (%):	Written examination (50%) Continuous Assessment (50%) Practical work (0%)

This document contains information for the course CIVL3103 CONSTRUCTION PROJECT MANAGEMENT.

Its intention is for students undertaking the course to be well informed in terms of its learning expectations and also to help make their learning journey an enjoyable one.

Information presented in this document was correct at the time of printing.

Course Description and Aims

This course conveys knowledge of the fundamentals of construction project management, including core principles and their basic applications, which can be further built upon during career development. Topics span both the management of civil engineering designs and the management of construction projects. The course imparts important basics of the planning and control of time and money, and links these to achieving better value for stakeholders, including quality and life cycle considerations.

The course is designed to enable civil engineering undergraduates to appreciate and assimilate key principles and good practices for the effective, efficient and ethical management of construction projects. It also aims to equip young civil engineers with the basic knowledge that will enable them to perform well and contribute meaningfully in multi-disciplinary project teams that may include financial and legal professionals, apart from those from other core construction industry disciplines

Teaching Staff

Contact details for the course co-ordinator and course teachers are shown below:

Course Co-ordinator	
Name (Department: Specialty)	**Contact Details**
Dr. C.C.Y. Leung (Civil Engineering: Construction Engineering and Management)	E-mail: cyleung 2@hku.hk Phone: 2859 2674 Office: Haking Wong Building, Room 5-21
Course Teachers	
Name (Department: Specialty)	**Contact Details**
Dr. C.C.Y. Leung	E-mail: cyleung 2@hku.hk Phone: 2859 2674 Office: Haking Wong Building, Room 5-21

Learning Outcomes and Alignment with HKIE Abilities for Engineering Graduates

By the end of this course, students should be able to demonstrate a threshold level of mastery of the following learning outcomes. The appropriate HKIE abilities associated with each of the learning outcomes are also presented.

Course Learning Outcomes	**Relevant HKIE Abilities for Engineering Graduates (Equivalent to Programme Learning Outcomes)**
1. Describe the fundamentals of construction project management, including the roles of key project participants in setting and achieving project priorities.	PO(d) an ability to function on multi-disciplinary teams; PO(f) an ability to understand professional and ethical responsibility; PO(g) an ability to communicate effectively.
2. Understand and apply knowledge of some fundamental elements of civil engineering contracts, together with associated professional and ethical responsibilities, as needed for contract administration.	PO(d) an ability to function on multi-disciplinary teams; PO(f) an ability to understand professional and ethical responsibility.
3. Identify and discuss some important principles and practices in targeting appropriate civil engineering design solutions; including in strategic/ conceptual design and cost planning during design; as well as in value management and life cycle analyses.	PO(a) an ability to apply knowledge of mathematics, science, and engineering appropriate to the degree discipline; PO(e) an ability to identify, formulate and solve engineering problems; PO(g) an ability to communicate effectively; PO(h) an ability to understand the impact of engineering solutions in a global and societal context, especially the importance of health, safety and environmental considerations to both workers and the general public; PO(i) an ability to stay abreast of contemporary issues.
4. Prepare construction programmes, and use network programmes in resource scheduling, time-cost trade-offs, etc., as well as understand and apply basic techniques to	PO(a) an ability to apply knowledge of mathematics, science, and engineering appropriate to the degree discipline; PO(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice appropriate to the degree discipline.

Course Learning Outcomes	Relevant HKIE Abilities for Engineering Graduates (Equivalent to Programme Learning Outcomes)
assess and improve construction productivit	
5. Understa techniques e.g. in earned value analysis and variance analysis, as well as in cash flow forecasting and optimisation.	(a) an ability to apply knowledge of mathematics, science, and gineering appropriate to the degree discipline; PO(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice appropriate to the degree discipline.
6. Design effective solutions for construction development projects by adopting the latest construction practices and technologies learned in the course, and be able to convey such solutions in the form of reports and visual aids (e.g., engineering drawings and posters).	PO(a) an ability to apply knowledge of mathematics, science, and engineering appropriate to the degree discipline; PO(e) an ability to identify, formulate and solve engineering problems; PO(g) an ability to communicate effectively; PO(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice appropriate to the degree discipline. PO(i) an ability to stay abreast of contemporary issues.

CiC related CLOs, these must match with CIC Certification form P.1

Course Teaching and Learning Activities and Alignment with Learning Outcomes

The course content and its alignment with the course learning outcomes and assessment tasks are described below.

Course Content	Responsible Lecturer	Course Learning Outcomes
The Management of Construction Projects	Dr. C.C.Y. Leung	1, 2
Contract Administration and Management - Principles	Dr. C.C.Y. Leung	1, 2
Contract Administration and Management – Case studies	Dr. C.C.Y. Leung	1, 2
Programming, Network Analysis, and Critical Paths	Dr. C.C.Y. Leung	4
Resource Scheduling and Time-cost trade-offs	Dr. C.C.Y. Leung	4, 5
Sustainability in Construction Projects	Dr. C.C.Y. Leung	2, 1
Sustainability Assessment - Life Cycle Costing and Analysis	Dr. C.C.Y. Leung	3, 1
Value Management and Lean Construction	Dr. C.C.Y. Leung	3, 1
Productivity and Innovation	Dr. C.C.Y. Leung	4, 5
Prefabrication and off-site construction	Dr. C.C.Y. Leung	3, 4
Building Information Modeling and Visualization	Dr. C.C.Y. Leung	3
Management of Engineering Design – Integrated Project Delivery	Dr. C.C.Y. Leung	3, 1
Cash Flow Management	Dr. C.C.Y. Leung	4, 5
Financial Planning and Control	Dr. C.C.Y. Leung	4, 5

Guidelines on Grading and Standards of Assessment

HKU has adopted standards-based assessment. The general course grade descriptors aim to provide descriptions on the normal expectations of student achieving particular grades.

Course Grade	Description
A	Exceptionally good performance demonstrating a superior understanding of the subject matter, a foundation of extensive knowledge, a skillful use of concepts and/or materials, and ability to analyze and evaluate problems.
B	Good performance demonstrating capacity to use the appropriate concepts, a good understanding of the subject matter, and an ability to handle the problems and materials encountered in the course.
C	Adequate performance demonstrating an adequate understanding of the subject matter, an ability to handle relatively simple problems, and adequate preparation for moving on to more advanced work in the field.

Course Grade	Description
D	Minimally acceptable performance demonstrating at least partial familiarity with the subject matter and some capacity to deal with relatively simple problems, but also demonstrating deficiencies serious enough to make it inadvisable to proceed further in the field without additional work.
F	Unacceptable performance demonstrating unfamiliarity with the subject matter, and lack of capacity to deal with relatively simple problems, and also demonstrating deficiencies serious enough to make it advisable to retake the course.

Course Assessment Tasks and Alignment with Learning Outcomes

Assessment tasks in this course are described below, which include weighting, assessment type, and alignment with course learning outcomes.

Weighting of continuous assessment and written examination

Assessment Type	Percentage of Total Assessment (%)	Description
Continuous Assessment	50 %	Coursework assignments
Written Examination	50 %	3-hour written examination
Practical Work	Nil	NA

Course and Assessment Policy

Late Submission / Missed quiz
Based on Department guidelines (as per general note to students) on mark deductions for late submissions of Coursework Assignments

Academic Conduct
The University Regulations on academic misconduct will be strictly enforced. Students are strongly recommended to refer to http://www.hku.hk/student/plagiarism/ for further details. In addition, students should familiarise themselves with http://lib.hku.hk/turnitin/.

Means / Processes for Student Feedback on Course

SETL
Students are asked to complete this evaluation (Student Evaluation of Teaching and Learning) of their learning experiences at the conclusion of the course. Questionnaire items relate to the overall evaluation of the course as well as an evaluation of teaching.

Other means of student feedback

Date: Mar 30, 2023 Completed by: Dr. C.C.Y. Leung

Learning Resources

Required text / References
Suggested references:

General Textbooks
1. Modern Construction Management - F. Harris and R. McCaffer
2. Project Management for Construction - C. Hendrickson and T. Au

Other References (for specific topics)
1. Management Information Systems - T. Lucey; Construction Project Administration - E.R. Fisk
2. Management Principles and Practice - G.A. Cole; Hong Kong Contracts - C. Chui and D. Roebuck

3. Site Supervision - R.H. Clarke; Construction Contracting - R.H. Clough and G.A. Sears
4. http://www.hkcic.org/ + HKSAR Govt & overseas web-sites; http://www.civcal.hku.hk; http://www.hku.hk/cicid/ etc.
5. Relevant Journals and Magazines: on Construction Engineering and Management, Construction Management and Economics, Construction Procurement, Management in Engineering, BEPAM: www.emeraldinsight.com/bepam.htm etc. Also HKIE "Engineer" etc. e.g. http://www.hkengineer.org.hk/program/home/homepage.php?page=about HKIE

Course website

All lecture notes, problems and other course material will be posted on Moodle. Students are advised to regularly consult the Moodle site for this course.

Clear discription on how CiC Components will be taught

CIVL3103 - Course Schedule

Week	Course Topic	CIC Related Teaching Activities	Course Assignment Issued	Course Assignment Due
1	Value management and lean construction – Part 1			
2	Value management and lean construction – Part 2			
3	Productivity	Tutorial on how to prepare professional engineering design report (In this tutorial, students will learn: the expected content and structure in a technical engineering report; how to use tables and figures effectively; how to properly format the report to professional standards)	Students learn and practice written literacy in class	
4	Prefabrication and off-site construction	Tutorial on how to prepare captivating poster for design showcasing (In this tutorial, students will learn how to present and arrange critical information on a poster that captivates readers)	**ISSUED**: Assignment A* – Modular Integrated Construction (Tasks: **design report** + **poster**) Students learn and practice visual literacy in class	
5	Management of construction project			
6	Programming, network analysis and critical paths	Students receive feedback on written and visual literacy in class		
7	Reading Week			**DUE:** Assignment A – draft design report + draft poster
8	Time-cost optimization and resource scheduling – Part 1		**ISSUED**: Assignment B** – Critical Path Analysis and Time Cost Optimization (Tasks: calculations)	
9	Time-cost optimization and resource scheduling – Part 2	Feedbacks on the draft report and poster submitted for Assignment A are to be provided to students and problems common to most students will be discussed in class.		
10	Cash flow management – Part 1	Tutorial on how to prepare technical memorandum for reporting analysis findings (In this tutorial, students will learn: the expected content and structure in a technical memorandum; how to properly format the memorandum to professional standards)	**ISSUED**: Assignment C* – Cash Flow Analysis (Tasks: calculations + **technical memorandum**)	**DUE:** Assignment A – final design report + final poster
11	Cash flow management – Part 2			**DUE:** Assignment B
12	Financial planning and control			**DUE:** Assignment C – calculations + draft technical memorandum

Students given opportunity to submit draft.

13	Sustainability in construction projects	Feedbacks on the draft technical memorandum submitted for Assignment C are to be provided to students and problems common to most students will be discussed in class.		
14	Contract administration			**DUE:** Assignment C – final technical memorandum

Notes:
*Assignment A and C are CIC related assignment
**Assignment B is not CIC related assignment
= tasks related to teaching / development of written literacy
= tasks related to teaching / development of visual literacy

The University of Hong Kong
Department of Civil Engineering

CIVL3103 Construction Project Management

Coursework Assignment A – Modular Integrated Construction

Issued on: XX/XX/XXXX

Due date: XX/XX/XXXX

Note: Both (a) plagiarism and (b) late submission will be penalised.

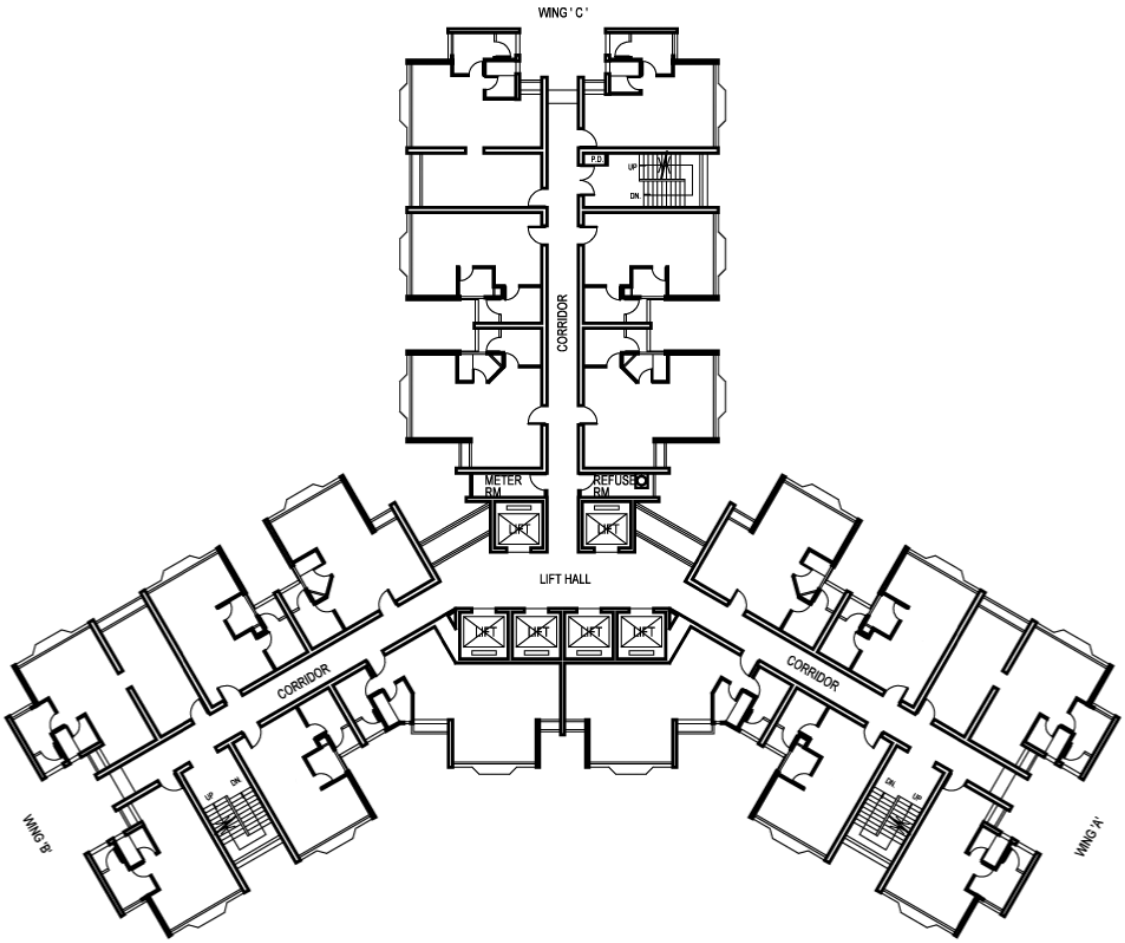
SUBMISSION REQUIREMENTS

- All the content (including the handwritten part, if any) for submission should be integrated into **one PDF file**.
- The Cover Page must include the **(a) Course No. and Name**; **(b) Coursework Assignment Name**; and **(c) Student Name and UID**.
- All references used should be listed at the end of the submission. It is also recommended to cite specific references in the text at the locations where you draw material from them.

PROBLEM

The Chief Executive's 2022 Policy Address set targets to increase the overall production and cap the waiting time for Public Rental Housing (PRH). As one of the high-productivity construction methods, Modular Integrated Construction (MiC) method was recommended and promoted in the Hong Kong construction industry.

A main contractor has recently been awarded by a public sector client a Design and Build contract for a 26-storey PRH in a built urban area of Hong Kong. This building includes one storey below a transfer podium to be cast in situ and 25 storeys of residential units to be constructed using the MiC method, and the layout plan for a typical floor is shown below. The building is expected for occupancy from 1 January 2025.



TASKS

(I) Design Report

Assuming you are the engineer of the awarded main contractor, prepare a design report that addresses the following:

(a) Recommend one specific system of modular construction with detailed descriptions for delivering this building.

Tips:

- A complete system comprises both modularised and non-modularised areas, especially for high-rises.
- Graphical illustrations of a reasonable modularised typical floor plan are encouraged for the description.
- The specific system for modularised areas should come from a brand of real-life MiC system, and MiC modules can be manufactured with concrete, steel, timber, or composite materials.

(b) Provide justifications for your recommendation of the specific modular building system.

Tips:

- The justification could cover but not limited to the following aspects: structural stability, construction speed, construction cost, logistics, skills requirement, quality of product, etc.
- The arguments should be provided within the context of the provided project case.
- You may consider tabulating the key information in addition to narratives.

(c) Explain how using your recommended modular system will improve productivity compared to the conventional cast-in-situ method.

Tips:

- The definition of productivity you focus on here should be explained clearly first.
- The explanation should be closely related to the provided project context and cover the aspects of selecting and comparing construction methods.
- You may consider tabulating the key information for comparison.

Requirements on report format:

- The main content of the report (i.e. excluding the cover page, table of content, list of tables and figures, reference list and appendix) should be **limited to 5 pages**.
- 25 mm page margins (all sides)
- For body text, use single spacing, Times New Roman, and font size of 11

Assessment Task / Instructions

(II) Poster

The Housing Authority would like to invite you to participate in the public consultation for this project. Please prepare a poster to showcase your design for this event. The main purpose for this poster is to present the most critical findings from Section (A), (B), (C) above in a concise manner that could be well understood by the general public.

Please use Microsoft PowerPoint to design the poser with the following requirements:

Size:	A1 (594 × 841 mm)
Image resolution:	300 dpi
Main title:	recommended font size between 54 to 60 pt
Sub-heading:	recommended font size between 40 to 44 pt
Normal test:	recommended font size of at least 28 pt

WEIGHTING OF TASKS

Students will receive a grade of A/B/C/D/F for each task. The grade descriptions are provided in the assessment rubrics attached. The weighting of each task with respect to the final course grade is provided in the table below.

Tasks	Weighting
(I) Design Report	This task weighs 25% of final course grade
(II) Poster	This task weighs 10% of final course grade

Clear descriptions of expectations of performance.

ASSESSMENT RUBRICS – DESIGN REPORT

Criteria	Weighting	Grade Descriptors				
		A (80% - 100%)*	B (65% - 80%)*	C (55% - 65%)*	D (50% to 55%)*	F (<50%)*
Addressing the task – Section (A)	20%	Addressed clearly, accurately, and to the point to all the matters concerned in the section. The specified system is clearly illustrated with detailed graphical illustrations (e.g. colour coded, legends shown etc.).	Addressed clearly, accurately to most of the matters concerned in the section. The specified system is illustrated with good use of graphics.	Addressed some of the matters concerned in the section. Responses may not be to the point or relevant. The specified system is roughly illustrated on the layout plan.	Responses are largely irrelevant and could not address the matters concerned in the section. The specified system is roughly illustrated on the layout plan.	Lack of understanding of the matters concerned. Responses are largely irrelevant and inaccurate. No attempt of illustrating the specified system.
Addressing the task – Section (B)	20%	The matters concerned in the question are all critically discussed in-depth with strong supporting arguments; rationale / reasons behind the responses are fully elaborated.	The matters concerned in the question are mostly discussed in-depth with some arguments made; attempts to elaborate the rationale / reasons behind the responses are evident.	The matters concerned in the question are shallowly discussed with little arguments made; attempts to elaborate the rationale / reasons behind the responses are somewhat evident.	The matters concerned in the question are simply addressed with little discussion or elaboration of the rationale / reasons behind.	The matters concerned in the question are simply addressed without discussion and elaboration.
Addressing the task – Section (C)	20%	Addressed clearly, accurately, and to the point to all the matters concerned in the section. Explanation is convincing with excellent use of relevant, accurate, and tabulated information to support.	Addressed clearly, accurately to most of the matters concerned in the section. Explanation is mostly convincing with some tabulated information used to support.	Addressed some of the matters concerned in the section. Explanation is somewhat shallow with few tabulated results to support.	Responses are largely irrelevant and could not address the matters concerned in the section. Explanation is shallow and inaccurate with little attempt to use tabulated information to support.	Lack of understanding of the matters concerned. Little attempt to explain or to use tabulated information to support.
Organization and flow	15%	Contents are presented with a logical flow. All statements made and conclusions drawn are based on sufficient prior discussions. Sections of the report are identifiable and well written. Clear and logical outline of main content in the report.	Contents are largely presented logically. Remarks and statements were made without prior introduction or discussion of the context on occasion. Sections of the report are identifiable. Outline of the main content is largely clear with the logical flow understandable.	Contents are presented somewhat logically. Remarks and statements were made without prior introduction or discussion of the context frequently. Outline of the main content is somewhat confusing with the flow not easily understandable.	Contents are largely presented with an unorganized manner. Many remarks and statements were made without prior introduction or discussion of the context. Outline of the main content is confusing with the flow not easily understandable.	Contents are largely presented with an unorganized manner. Most remarks and statements were made without prior introduction or discussion of the context. Outline of the main content is illogical and could not be followed.
Language	15%	Writing has few to no grammatical error. The use of passive voice throughout the entire report. Contents under each section were introduced by	Writing has a number of obvious grammatical error. Contents under most sections were introduced by appropriate use of topic sentences. Occasional use of active	Writing has major grammatical error with some of the writing being difficult to understand. Contents under a few sections were introduced by appropriate use of topic	Writing has major grammatical error with some of the writings incomprehensible. Frequent use of active voice is evident.	Writing is largely incomprehensible.

Clear assessment criteria. These skills must be taught explicitly in the course.

Clear descriptions of expectations of performance.

		appropriate use of topic sentences that allow reader to have good expectation on the content to be presented in the section.	voice is evident.	sentences. Frequent use of active voice is evident.		
Formatting and mechanics	10%	Writing has no typographical error; consistent formatting of paragraphs, fonts, tables and figures is evident. Follows all requirements for front/back matter (e.g. title page, table of contents, table of figures, reference list, appendices)	Writing has a number of obvious typographical error; formatting of paragraphs, fonts, tables and figures is largely consistent. Follows most requirements for front/back matter (e.g. title page, table of contents, table of figures, reference list, appendices)	Writing has major typographical error; formatting of paragraphs, fonts, tables and figures is somewhat consistent. Follows most requirements for front/back matter (e.g. title page, table of contents, table of figures, reference list, appendices)	Writing has major typographical error, formatting of paragraphs, fonts, tables, and figures is largely inconsistent. Little regard to the requirements for front/back matter (e.g. title page, table of contents, table of figures, reference list, appendices)	Writing has major typographical error; effort to maintain consistent formatting is clearly not evident. Front/back matters are mostly missing.

*Percentages in bracket indicate equivalent range of numerical grade

ASSESSMENT RUBRICS - POSTER

Criteria	Weighting	Grade Descriptors				
		A (80% - 100%)*	B (65% - 80%)*	C (55% - 65%)*	D (50% to 55%)*	F (<50%)*
Addressing the task	50%	Addressed clearly, accurately, and to the point to all the matters concerned. Critical findings / results / information from all Section (A), (B), and (C) were clearly presented in concise manner.	Addressed clearly, accurately to most of the matters concerned. Findings / results / information from Section (A), (B), and (C) were presented but may not be concise or critical.	Addressed some of the matters concerned. Findings / results / information from the sections were presented but may not be concise. Some critical findings / results / information are missing.	The matters concerned were mostly not addressed. Findings / results / information from some of the sections were missing. Information presented are mostly not critical.	The matters concerned were not addressed. Most of the critical findings / results / information are not presented.
Appearance and appeal	25%	Easy to read. Excellent use of contrasts (color, font, size etc.) Graphic elements are aligned and spaced appropriately and with consistent style No errors in grammar, spelling, punctuation and capitalization.	Use of contrasts (color, font, size etc.) is evident. Most of the graphic elements are aligned and spaced appropriately and with consistent style Few errors in grammar, spelling, punctuation and capitalization.	Use of contrasts (color, font, size etc.) is somewhat lacking. Obvious out of alignment for graphic elements, spacing is somewhat inappropriate. A number of errors in grammar, spelling, punctuation and capitalization.	Use of contrasts (color, font, size etc.) is lacking. Most graphic elements are not aligned and spaced inappropriately. Obvious errors in grammar, spelling, punctuation and capitalization throughout.	No use of contrasts (color, font, size etc.). Graphic elements are not aligned and spaced inappropriately. Obvious errors in grammar, spelling, punctuation and capitalization throughout. Effort to make the poster appealing is clearly not evident.
Organization	25%	Layout of poster is logical, and information are presented sequentially with good flow	Layout of poster is logical, and flow of information presented could be understood without much difficulty.	Layout of poster is somewhat logical, and flow of information presented is somewhat difficult to grasp.	Most of the contents are randomly presented on the poster.	Contents are randomly presented on the poster. Effort to organize the poster appropriately is clearly not evident.

*Percentages in bracket indicate equivalent range of numerical grade

Clear assessment criteria. These skills must be taught explicitly in the course.

- End of Assignment A -

Clear descriptions of expectations of performance.

The University of Hong Kong
Department of Civil Engineering

CIVL3103 Construction Project Management

Coursework Assignment C – Cash Flow Analysis

Issued on: XX/XX/XXXX

Due date: XX/XX/XXXX

Note: Both (a) plagiarism and (b) late submission will be penalised.

SUBMISSION REQUIREMENTS

- All the content (including the handwritten part, if any) for submission should be integrated into **one PDF file**.
- The Cover Page must include the **(a) Course No. and Name**; **(b) Coursework Assignment Name**; and **(c) Student Name and UID**.

PROBLEM

A contracting company has been awarded a construction project with total contract value of 56k. The project engineer has estimated the contract works over the 10-month project period and the intended profit margin (% of contract value) as shown in the table below.

Month	1	2	3	4	5	6	7	8	9	10
Contract value (k)	3	4	5	8	8	8	7	6	5	2
Profit (% of value)	15	15	10	10	10	10	10	10	5	5

Other terms on payments and retention are as follows:

- The client will provide no advance payment but has agreed to make monthly interim payment against certified works to the contractor **at the end of the following month**.
- Retention will be withheld at 15% level for every monthly interim payment up to a maximum of $4k. The client has agreed to release 50% of the retention, together with the last monthly interim payment, upon completion of the construction works, and the other 50% at the end of the defects liability period of the project, which is set for 6 months.
- Assuming an average payment delay of one month between the contractor's cost liability and the outward cash flow, which means that the contractor will pay all the costs **uniformly in the following month** in which they incur.

TASKS

(I) Forecast Calculations

As the project engineer of this contracting company, please perform a cash flow forecast analysis by doing the following:

a. Calculate and provide the following items for each month in a table format: contract value, cumulative contract value, retention, cumulative retention, the monthly cash inflows and outflows, the cumulative cash inflows and outflows, and the net cash flow of the project. **(40 marks)**

b. Using the results of Question a,

   (i) Draw the cash flow curves to show the cumulative cash inflows and outflows, and also the net cash flows for the project period (10 months) and the defects liability period of the project (6 months after completion). **(30 marks)**

   (ii) Provide the value of the largest negative cash flow and identify when would this value occur. **(10 marks)**

c. The company plans to finance any negative cash flow periods. Assuming the simple interest rate of 2% per month is used, calculate the total interest charge on the negative capital locked up. The interest would not be considered as additional costs. **(20 marks)**

(II) Technical Memorandum

Please prepare a brief technical memorandum to advise your manager the key findings from the cash flow forecast analysis in Task (I). The memorandum should be **limited to 3 pages**. 25 mm page margin should be provided on all sides. For the body text, use single spacing, and Times New Roman font with font size of 11.

The assessment of the technical memorandum is to be based on the rubrics attached.

WEIGHTING OF TASKS

The weighting of each task with respect to the final course grade is provided in the table below.

Tasks	Weighting
(I) Forecast calculations	This task weighs 5% of final course grade
(II) Technical memorandum	This task weighs 5% of final course grade

ASSESSMENT RUBRICS – TECHNICAL MEMORANDUM

Criteria	Weighting	Grade Descriptors				
		A (80% - 100%)*	B (65% - 80%)*	C (55% - 65%)*	D (50% to 55%)*	F (<50%)*
Addressing the task	50%	The memorandum includes all relevant key findings from the forecast in a concise manner. It allows the reader to have a clear expectation on the financial status of the project at different points in time throughout the project duration.	The memorandum includes key findings from the forecast but with a few information missing.	A number of key findings are not reported in the memorandum. The memorandum includes a lot of useless information information.	Key findings are largely missing in the memorandum. The memorandum is unconcise and contains a great deal of useless information that cannot provide a picture of the financial forecast for the project.	The memorandum is not informative; provides little or no relevant information on the financial forecast for the project.
Organization	20%	Contents are presented logically. Sections are identifiable. Key information stands out and is easily identifiable.	Contents are largely presented logically. Sections are identifiable. Key information is somewhat easily identifiable. Reader may need to read the memorandum a few times to get the key information.	The structure of the memo is somewhat evident. The reader needs to go through the memorandum repeatedly to get the key information.	The content of the memorandum is loosely structured. Sections are hard to identified. The reader needs to go through the memorandum repeatedly to get the key information.	Contents presented are unstructured.
Language	15%	Writing has few to no grammatical error.	Writing has a number of obvious grammatical error.	Writing has major grammatical error with some of the writing being difficult to understand.	Writing has major grammatical error with some of the writings incomprehensible.	Writing is largely incomprehensible.
Formatting and mechanics	15%	Writing has no typographical error; consistent formatting of paragraphs, fonts, tables and figures is evident; follows all formatting requirements.	Writing has a number of obvious typographical error; formatting of paragraphs, fonts, tables and figures is largely consistent; follows most formatting requirements.	Writing has major typographical error; formatting of paragraphs, fonts, tables and figures is somewhat consistent; a number of formatting requirements is not followed.	Writing has major typographical error; formatting of paragraphs, fonts, tables, and figures is largely inconsistent; Little regard to the formatting requirements.	Writing has major typographical error; effort to maintain consistent formatting is clearly not evident.

*Percentages in bracket indicate equivalent range of numerical grade

- End of Assignment C -