HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Department of Civil and Environmental Engineering

CIVL 4910/4920 Civil and Environmental Engineering Final Year Project/Thesis 2021/22

IMPORTANT NOTICE

Important Dates

Event	Date
Submission of First Interim Report	12 noon – 30 December 2021 (Thur)
Submission of Second Interim Report	12 noon – 7 April 2022 (Thur)
Submission of Examination Copy of Final Report	12 noon – 5 May 2022 (Thur)
Oral Presentation	30 May 2022 (Mon) or 31 May 2022 (Tue)
Submission of Final Report	12 noon – 9 June 2022 (Thur)

Report Submission Requirements

1. Students are required to submit individual reports (First and Second Interim Reports, Examination Copy of Final Report and Final Report) even if you have a group project/thesis;

2. For First Interim Report, Second Interim Report and Examination Copy of Final Report, students should submit:

   (1) one soft copy online to the Department FYP/FYT Management System, and
   (2) one soft copy to the Canvas FYP/FYT course website;

3. For Final Report, students should submit:
   (1) one soft copy (in pdf format) online to the Department FYP/FYT Management System, and
   (2) one bound hard copy of the report to the Department Administrative Office

4. All reports should be submitted on or before the dates specified in the above table.

1. THE PROJECT/THESIS

The final year project/thesis is a synthesis of what you have learnt in the civil engineering/civil and environmental engineering program.

You are expected to spend a minimum of one day per week during the fall semester and one and a half days per week during the spring semester working on the project/thesis. This is, however, a minimum; you are advised to spend much more time on the project/thesis than indicated here.

2. AIMS

This program requirement gives you a chance to undertake a project/thesis on your own, produce a self-contained piece of work, and write it up for others to assess and use. In writing up the report, you will need to obtain advice, information and assistance from others, for example your project/thesis supervisor, technical officers responsible for laboratories, and computing staff.

Project/thesis work is a good introduction to work in industry and/or research. It is also an important indicator of how well you can use what you have learnt throughout your courses. The successful completion of the project/thesis plays an important part in the final grading of degree.

3. CHOICE OF TOPIC

Each student will be given a Topic Selection Form to fill in their preferences for projects/theses. Students should spend adequate time to study the outline of each topic and may approach the appropriate project/thesis supervisors for clarification when necessary. The project/thesis selection is normally conducted in May and the Department will use email/notice to inform students of the selection procedure and the schedule for submitting the completed Topic Selection Form.

4. PROJECT/THESIS ALLOCATION

Project/thesis allocation is primarily based on the CGA of the students as at the end of fall semester or winter semester of the third year of study. If it happens that a faculty member would like to pre-select two students, the faculty may indicate to the Undergraduate Studies Committee their preferences ahead of time. No pre-selection will be accepted once the topics are announced to all students.

Once the decision is made, it is final. No reallocation will be allowed and unless under very special circumstances, students will be strictly prohibited from changing project/thesis supervisor.

5. MONITORING PROJECT/THESIS PROGRESS

In order to effectively monitor the progress of the final year project/thesis, all students are required to submit the **four** reports electronically and to the Departmental Administrative Office according to the submission schedule.

5.1 First Interim Report

It is expected that the research problem has been formulated (even if changes are to come in the future) and concrete goals/objectives have been set. The student should have completed or be close to completing any required learning materials and have a clear idea of what the project/thesis is about, what needs to be done, and how best to proceed and achieve goals. In other words, there should be a solid plan of action/schedule of tasks (even if modifications are expected). However, because topics, types and nature of work vary from project/thesis to project/thesis, individual supervisors have complete discretion as to what is required to have been completed at this stage and what is expected in the First Interim Report.

Submission Requirements
(1) One soft copy online to the Department FYP/FYT Management System, and
(2) One soft copy to the Canvas FYP/FYT course website

Submission Deadline: 12 noon – 30 December 2021 (Thur)

Note: A well-written First Interim Report will benefit the student as most job interviews will be conducted in February and March and employers may ask questions regarding the final year project/thesis.

5.2 Second Interim Report

This report carries on from where the first interim report has left off: A summary of progress, initial/interim results, partial discussions, analyses, interpretations and evaluations are the expected minimum. By now, at least 80% of work should have been completed; only minor procedural touch-ups or modifications should be in order from here on. Time should be spent on producing, revising and polishing any discussions, analyses and evaluations.

Submission Requirements
Students should submit:
(1) One soft copy online to the Department FYP/FYT Management System, and
(2) One soft copy to the Canvas FYP/FYT course website

Submission Deadline: 12 noon – 7 April 2022 (Thur)

5.3 Examination Copy of Final Report

A full project/thesis report is to be submitted individually. Students are encouraged to complete their Examination Copy of Final Report well ahead of 5 May 2022, so that their supervisor can go through it and give feedback. The Final Year Project/Thesis **will be graded mainly on the Examination Copy of Final Report.** In addition, top Final Year Projects/Theses may be selected based on the Examination Copy of Final Report and displayed in a poster session, and awards may be given.

Submission Requirements

Students should submit:
(1) One soft copy online to the Department FYP/FYT Management System, and
(2) One soft copy to the Canvas FYP/FYT course website

Submission Deadline: 12 noon – 5 May 2022 (Thur)

5.4   **Final Report**
The Final Report incorporates all revisions considering comments received during the project/thesis presentation.

Submission Requirements
Students should submit:
(1) One hard copy to the Department Administrative Office, and
(2) One soft copy online to the Department FYP/FYT Management System.

Note: Students may be required to submit more hard copies if their project/thesis has been sponsored by the government or the industry.

Submission Deadline: 12 noon – 9 June 2022 (Thur)

Note: A final grade will only be released upon receipt of the Final Report.

6. SCHEDULING YOUR PROJECT/THESIS

It is important to work effectively with your project/thesis supervisor. Different supervisors and different students can arrive at different but effective working arrangements, but it is generally recommended to have regular meetings, especially at an early stage when it is important to check that what you are doing is indeed what is required.

If you wish to contact your supervisor outside a regular meeting time and you fail to make contact, call again; sending an email or just leaving a note on his/her office door may work too. Consultations are often much more effective if they are prearranged.

If equipment is to be constructed or if testing is to be done, please contact the appropriate laboratory personnel to arrange a suitable schedule. Laboratory time is always very limited, so you should plan your experiments well and conduct them efficiently. You may find further project/thesis work to do (e.g. computer programming, literature survey or preliminary writing up) during the preparation of specimens and/or equipment.

You should keep careful notes and write up as you go. To note at a later time that you had a reference on an item and now you don't know/remember what it was is frustrating. Regular note taking and correctly recording all details of references and work can save a great deal of time and simplify the final write-up.

Producing the final report is itself a major task and **you should allow plenty of time for the process**. It must be remembered that the resulting document forms the primary basis for the final project/thesis assessment. It goes without saying that you should be consulting your supervisor regularly as you produce the report.

The writing-up process often helps clarify the significance of your work and may well suggest some additional investigations you would like to pursue (e.g. a short test run to check an unusual result). This is another reason why it should not be rushed. **It is important to have your examination copy ready well before the submission date**; you should, however, discuss it with your supervisor before finalizing it.

Turning in your final report requires considerable organization. Typing, producing figures, printing, binding, even uploading and sending **all take longer than you think**, not to mention computers, printers, photocopiers and connection to the Internet can all break down, and they often do. Allow at least a week to proofread (every word and symbol). This is normal and you are expected to include reasonable contingency allowances for possible problems of this kind when planning your report production.

The Examination Copy of Final Report must be submitted by **12 noon, 5 May 2022**.

Those depending on computers or apparatus should aim to have their research work finished before the end of week 8, Spring Semester. Avoid being caught in the heavily loaded second half of the semester.

7.   **SUBMISSION**

It is very important to submit all reports on time. To be fair to those students who do so, those who submit late without prior permission from the Undergraduate Studies Committee will receive a penalty of **1% deduction per each day late** from the total mark.

Permission to submit any of the four reports late is only granted under exceptional circumstances for reasons beyond the student's control (e.g. prolonged well documented sickness or major workshop/laboratory delays where the student has programmed his work very early). **This permission can only be granted by the Undergraduate Studies Committee, not by your project/thesis supervisor.**

8.   **ORAL PRESENTATION**

Towards the end of spring semester, you will be required to make a presentation on your project/thesis to a panel and other students. This is a formal opportunity to report to your project/thesis supervisor, second reader and peers on your project/thesis.

A fixed time will be scheduled for each project/thesis as follows:

	Presentation	Question & Answer
1 student per project/thesis	12 min	8 min
2 students per project/thesis	20 min	15 min
3 students per project/thesis	28 min	22 min
4 students per project/thesis	35 min	30 min

Remember by now you should be an expert in your subject and you should present the material in a manner which can be understood by all at your presentation. Go at a steady pace and practice the right emphasis and timing. Practice will give you confidence and remove some of your nervousness.

9. **ASSESSMENT**

Assessment will be based on project/thesis reports and oral presentation. The deliverables and presentation are evaluated by your project/thesis supervisor, panel members and the communication tutor in four areas. (Appropriate rubrics will be used for all assessments.)

(i) Motivation and Task Management (PO10): weighted 20%
(ii) Knowledge Acquisition, Critical Thinking and Analysis (PO3/4, PO5, PO8): weighted 40%
(iii) Communication – Report (PO9): weighted 25%
(iv) Communication – Presentation (PO9): weighted 15%

The assessment will be governed by the rubrics as shown at the end of this document.

Areas of Assessment	Supervisor	Second Reader	Chairperson	Communication Tutor	Weighting
1. Motivation and Task Management (PO10)		____	____	____	0.20
2. Knowledge Acquisition, Critical Thinking and Analysis (PO3/4, PO5, PO8)			____	____	0.40
3. Communication —Report (PO9)			____		0.25
4. Communication — Presentation (PO9)				____	0.15

10. **IMPORTANCE OF WRITTEN DOCUMENT**

A poorly written report will earn you a low grade regardless of its technical content or merit, as it is very difficult for the reader to appreciate the technical aspect of your project/thesis if the report fails to convey that aspect because its writing is poor. You are encouraged to seek help from the communication tutor especially in the Fall semester and early in the Spring semester. It is too late to seek help just before the final submission. To get an idea of what your reader will look for when grading your reports, please read the attached *Specifications and Guideline for Production and Submission of Reports* very carefully.

SPECIFICATIONS AND GUIDELINE FOR PRODUCTION AND SUBMISSION OF REPORTS

I.   Specifications

(i)   Paper must be A4 size (210 x 297 mm).

(ii)   Reports must be typed, 1.5-spacing, single-sided.

(iii)   For the Final Report, margins must not be less than 25mm at the left edge, 20mm at the right edge before binding, 25mm at the upper edge, and 20mm at the lower edge. Interim reports need not be bound.

(iv)   Final Reports must be bound with an approved cover. Suitable covers can be obtained from the Departmental General Office. The collection date will be notified by email.

(v)   Reports must include a **cover page** with

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on it, and the following must be shown:

>   Title of Report
>   Name of Author
>   Bachelor of Engineering (Civil Engineering/Civil and Environmental Engineering)
>   Date of Submission (month and year)
>   Project/Thesis Supervisor(s)

All sheets must be numbered (using word processor, <u>not hand written</u>). The main body of the report must be numbered consecutively from beginning to end. Other sections (for example Abstract, Table of Contents, List of Figures, List of Symbols and Appendices) must have their own logical numbering system.

(vi)   Formulae should be properly formatted and numbered within each Chapter.

(vii)   Tables, graphs, diagrams and photographs should be <u>inserted at the end of each chapter and properly labeled</u>. References should be placed right after the chapter of conclusions.

(viii) Computer programs and prints of engineering drawings should be bound into the report.

(ix)   **The author of the report is responsible for proof-reading the typescript and having corrections made as necessary**.

II.   Guideline

(i)   In preparing your report ask yourself, would another person be able to understand my work from the description given.

(ii)   The level of background information included in the report should be such that it can be understood by graduating students. Do not assume that everybody is a specialist in your field.

(iii)   Distinguish important aspects of the report from mere details. Remember that some readers of the report (other than the examiners) may not have time to read it in detail and the main points should become apparent on a quick reading.

(iv)   **Do not assume that a thick report is necessarily good**. A brief, concise report is more difficult to write than a verbose one.

(v)   The report should include a clear statement of aim(s) and objectives, and later the conclusions drawn from the work.

(vi)   There should be a clear delineation of the contribution of the report, in comparison with the state of the art before the report was undertaken. A clear statement of the contribution of the student, supervisor and any others should be made.

(vii)   Diagram captions should be reasonably self-explanatory and describe the diagram and the main conclusions to be drawn from it. It should be possible to get a sense of the work by quickly scanning through the diagrams and the conclusions.

(viii)   Any computer programs written by the student, with clear comments included in the listings, explaining the function of the program, should appear in the Appendices.

(ix)   Other computer programs used should have their source and identity specified in the report.

(x)   All references should be fully listed in a consistent manner and referred to at least once in the text. A separate bibliography of relevant literature is also useful.

(xi)   Photographs should be used when appropriate.

(xii)   If appropriate, a list of symbols and a glossary of special words should appear at the beginning of the report, immediately prior to the introduction.

(xiii)   **Diagrams taken from other sources must be acknowledged and documented.**

(xiv)   Mathematical proofs or derivations of equations which are simply reproductions of derivations from the literature should not be included. A few major steps in the derivation can be stated in order to permit a proper understanding of the logical basis of the equation or proof, but not a detailed step derivation. Note that this refers only to derivations reproduced from the literature, not the student's own work.

(xv) Details of routine or well-known experimental measurement techniques should not be included, although a summary may be given in the main body of the report. Where extensive details are considered necessary, they may be included in the appendices.

Department of Civil and Environmental Engineering

HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Department of Civil and Environmental Engineering

CIVL 4910/4920 Final Year Project/Thesis Assessment Report

Student Name _____ Student ID Number _____

Project/thesis Title

_____

Assessment Panel

Chairperson: _____

Supervisor: _____

Second Reader: _____ Communication Tutor: _____

Assessment (please attach rubrics)

Areas of Assessment	Supervisor	Second Reader	Chairperson	Communication Tutor	Average	Weight	Weighted Score
1. Motivation and Task Management (PO10)		——	——	——		0.20	
2. Knowledge Acquisition, Critical Thinking and Analysis (PO3/4, PO5, PO8)			——	——		0.40	
3. Communication — Report (PO9)			——			0.25*	
4. Communication — Presentation (PO9)				——		0.15	
					Total Weighted Score		

Final Letter Grade# _____

Chairperson's comment on the grade:

_____

_____

Please provide justification if the letter grade deviates significantly from the converting table:

_____

_____

Letter Grade Converting Table

Weighted Score	[4.00, 3.60]	(3.60, 3.20]	(3.20, 2.80]	(2.80, 2.40]	(2.40, 2.00]	(2.00, 1.60]
Letter Grade	A+	A	A-	B+	B	B-
Weighted Score	(1.60, 1.30]	(1.30, 1.00]	(1.00, 0.70]	(0.70, 0.50]	(0.50, 0.00]	
Letter Grade	C+	C	C-	D	F	

Signature of Chairperson _____ Date_____

Note: *
10%, 5% and 10% of the total score will be given by Supervisor, Second Reader and Communication Tutor respectively.
Weights for First Interim report, Second Interim Report and Examination Copy of Final Report are 1:1:2.

** This project is experiment-based (PO3)/IT-based (PO4)
(Please delete as appropriate.)

CIVL4910/4920 Final Year Project/Thesis Assessment Rubrics

Student Name: _____   Student ID: _____

Supervisor: _____   Signature: _____   Date: _____

Areas of Assessment		Poor (0)	Satisfactory (1)	Good (2)	Very Good (3)	Excellent (4)
1. Motivation and Task Management (PO10)						
Self-motivation		• No self-motivation • Unresponsive to supervisor	• Somewhat motivated • Frequent supervisor reminders	• Reasonably focused and motivated • Reminded occasionally	• Focused and motivated • Almost no reminder	• Highly motivated and proactive • No reminder
Task Management		• No plan, no task schedules • Little progress and inadequate results	• Some effort in task management • Slow progress and basic results	• Reasonable plan & task schedules • Reasonable progress and results	• Good plan & practical schedules • Almost all tasks achieved	• Effective plan and schedules • All tasks achieved/some surpassed
2. Knowledge Acquisition, Critical Thinking and Analysis						
Problem formulation, understanding of assumptions/ limitations (AL), and problem-solving (PO5)		• Shallow conception and formulation • Scarce knowledge • Poor understanding of AL	• Basic conception and formulation • Basic understanding of AL • Meaningful work initiated and achieved with limited success	• Fair conception and formulation • Reasonable understanding of AL • Meaningful work initiated and achieved with some success	• Clear conception and formulation • Good understanding of AL • Innovative work envisioned and mostly achieved.	• Clear conception and creative formulation • Innovative work envisioned and achieved
Data collection, analysis, interpretation and presentation (PO3 if experiment-based and/or PO4 if IT-based)**		• Inadequate technical skills • Trivial analysis and interpretation • Obvious/trivial outcomes	• Some technical, analytical and interpretive skills • Basic outcomes with very limited contributions	• Reasonable technical, analytical and interpretive skills • Reasonable outcomes with noticeable contributions	• Good technical, analytical and interpretive skills • Meaningful outcomes with substantial contributions	• Superb technical, analytical and interpretive skills • Very meaningful outcomes showing innovative contributions
Knowledge acquisition and application (PO8)		• Poor understanding of fundamentals • No application of basic knowledge and techniques	• Basic understanding of fundamentals • Limited application of basic knowledge and techniques	• Reasonable understanding of fundamentals and new concepts • Reasonable application of knowledge and techniques	• Good understanding of fundamentals and new concepts • Substantial application of knowledge and techniques	• Thorough grasp of fundamentals and new concepts • Concepts and techniques well integrated and creatively applied
3. Communication (PO9)						
Report	Organization	• Primitive report layout and poor logic • Difficult to understand report	• Report quite loose • Basically understandable	• Report reasonably structured • Some parts out of place	• Report thoughtfully laid out • Good logic throughout	• Report well-structured and logical • Very readable
	Content	• Missing important issues • Irrelevant work • Poor documentation of materials	• Covering some important issues • Some irrelevant work • Materials casually documented	• Covering major issues • Little irrelevant work • Materials reasonably documented	• Covering most important issues • No irrelevant work • Material properly documented	• Covering all important issues • Contents well integrated • Materials well documented
	Language accuracy	• Frequent grammatical problems • Many parts difficult to understand	• Grammatical problems tolerable • Some parts difficult to understand	• Some grammatical problems • Many parts generally readable	• Few grammatical problems • Most of report comprehensible	• Excellent writing, concise, clear and easy to understand
Presentation	Organization	• Loose structure • Many parts difficult to follow	• Somewhat identifiable sequence • Some parts difficult to follow	• Information presented logically • Sections and sequences clear	• Clear structure, content and logic • Engaging and easy to follow	• Tailored presentation, very logical, and very enjoyable
	Effectiveness	• No engagement with audience • Cannot get message across	• Some engagement with audience • Some points gotten across	• Reasonable audience engagement • Majority of points gotten across	• Interactive audience engagement • Most points gotten across	• Very interactive with audience • Messages delivered effectively
	Time management	• Noticeably exceeding/falling short of time allotted • Disorienting tempo	• Roughly meeting time, excessively rushed or too slow • Fair tempo	• Using up allotted time, slightly rushed or delayed • Reasonable tempo	• Effective use of time allotted • Good tempo and comfortable flow	• Very effective use of time allotted • Presentation very well paced and outstanding flow

	Handling of questions	• Failing/struggling to answer and/or understand rudimentary questions	• Addressing some questions • Tending to react to questions	• Answering some questions with reasonable elaboration	• Answering majority of questions with confidence and elaboration	• Answering (almost) all questions with good articulation and insights

Indication to letter grades: F/D   <   **0.70**   C   <   **1.60**   ≤   B   <   **2.80**   ≤   A