



THE UNIVERSITY OF HONG KONG
DEPARTMENT OF
COMPUTER SCIENCE

COMP4801 / FITE4801

Projects for BEng(CS) and BAsSc(FinTech)

2023-24

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Overview

The Capstone Project

- ▶ 12-credit mandatory capstone experience
 - ▶ COMP4801 Final Year Project for BEng(CS)
 - ▶ FITE4801 for BASc(FinTech)
- ▶ To be completed individually or as a group of 2-4 students
- ▶ Objectives:
 - ▶ Students to **demonstrate their abilities** in applying the academic knowledge and techniques acquired in their undergraduate courses to **research or software development** in a professional manner.
 - ▶ Specific to **FinTech** students: the application of technology to **finance discipline**.

Student as Owner

- ▶ Emphasize on the **students' ownership** of the Project
 - ▶ The role of project supervisors would shift more towards project advisors
- ▶ You are expected to take a proactive approach throughout the Project, e.g., in:
 - ▶ formulating a project idea
 - ▶ leading the development of the project
 - ▶ establishing a close working relationship with your supervisor

Assessment

- ▶ Each project will be assessed by a panel of examiners consisting of the supervisor, a second examiner and a moderator.
- ▶ The assessment is based on project deliverables comprising detailed project plan, webpage, interim report, first presentation, final report, final presentation and project exhibition (with 3-min video).
- ▶ Group project will be assessed as individual with clear declaration of contribution of all members and by Peer Evaluation (Free Riders will be discovered and fairly assessed).
- ▶ The submission deadlines of all project deliverables will be announced on Moodle.

Assessment Weighting

Deliverables	Supervisor	2nd Examiner	
Detailed Project Plan	12	8	
Project Webpage	2	2	
First Presentation	10	14	
Interim Report	22	22	
Final Presentation	14	14	
Final Report	40	40	
Total	100	100	
Weighted Total	60%	30%	10% for project exhibition and 3-min video by judges

Each assessment task has specific deadlines, which will be announced on Moodle before the 1st semester commences.

Peer Assessment

- ▶ Based on [WebPA](#) of Univ. of Loughborough
- ▶ Each member in the team will give a score to all members including himself/herself from 1-5.

1. Poor = not enough contribution to make any impact to the project
 2. Less than average = less than the fair share expected
 3. Average = good contribution as expected
 4. Very good = more than the average of other team members
 5. Excellent = outstanding contribution, key to the completion of the project
- ▶ The Peer Assessment (PA) score is used on **30% weighting of the overall marks** before calculating the final moderated marks, i.e., 70% of the original marks by examiners will be without any PA moderation.

[A Worked Example of the Scoring Algorithm](#)

Virtual Project Budget

- ▶ Each group will be allocated a virtual project budget of HK\$1,000 x number of project group members.
 - ▶ e.g., a budget of HK\$ 4,000 will be allocated to a project with 4 students.
- ▶ The budget may be used for purchasing reference book and equipment, etc. All purchased materials remain the property of the university and must be returned after use.
- ▶ Details of the virtual project budget system and reimbursement procedures are available on Moodle. Students should closely observe the reimbursement procedures and deadlines; **late claims will not be entertained.**

Timeline

Today's Focus

Project allocation

May – August 2023

- ▷ Grouping
- ▷ Topic Formulation
- ▷ **Proposal Submission**
- ▷ Project/Supervisor Matching

Project development

September 2023 – April 2024

- ▷ Project Plan
- ▷ Project Webpage
- ▷ Interim & Final Reports
- ▷ Presentations
- ▷ Project Exhibition

** Check the **project guidelines** and the detailed deadlines & requirements which are available on Moodle.

Guidance Materials


- ▶ The **Project Guidelines** help you understand the overall arrangements of the COMP4801 / FITE4801 Project.
- ▶ Detailed instructions and deadlines for all milestones and other resources are available on Moodle.
- ▶ **Moodle page** for project allocation stage (run till the end of summer only):
 - ▶ <https://moodle.hku.hk/user/index.php?id=103807>
- ▶ Email fypadmin@cs.hku.hk if you have any questions.

Project Allocation

- What you need to do (starting from now)
- How you can prepare for it

Project Proposal Submission

Deadline: June 30

- ▶  The proposal is an indication of your intent to pursue the Project in 2022-23.
You will risk failing to enroll in COMP4801 / FITE4801 if you fail to submit a proposal by the deadline.
- ▶ Each group is required to submit a proposal which includes:
 - ▶ Project title
 - ▶ Project description (no more than 250 words)
 - ▶ Project area of interest
 - ▶ Grouping information (e.g., student ID, name, programme)
 - ▶ Proposed supervisors (0 to 3, also indicate if prior consent of supervision from a teacher has been obtained)

**** The submission system will be open in early June.** Detailed instructions will be available on Moodle.

What you need to do

- ▶ Form a group
- ▶ Identify a project topic
- ▶ Identify potential supervisor(s) and area of interest
- ▶ Prepare a short project description
- ▶ Submit the proposal **by June 30**

Grouping

- ▶ Form a group of 1 – 4 students
 - ▶ In general, larger group size is more suitable for app/system development projects and individual work is more suitable for research-oriented topic.
- ▶ CS & FinTech students can form group to work on the same project, however, the project topic has to be related to the application of technology to finance discipline
- ▶ You can make use of the Moodle forum to find groupmates of similar interest (<https://moodle.hku.hk/mod/forum/view.php?id=2952197>)

Identify a Project Topic

What is a good FYP project topic?

- ▶ Of your very own interest
- ▶ Computing technology related (FinTech related for FITE4801)
 - ▶ any challenging problem(s) to solve?
 - ▶ any important application?
 - ▶ what would be your main contribution?
- ▶ Feasible (after your preliminary research at this stage)
 - ▶ can it be completed within the project timeline?
 - ▶ what skillsets are required? does it match those of the teammates?
 - ▶ are the supporting data or tools available?
 - ▶ any idea of how the project can be tackled? (methodologies)

Note: Students engaging in URFP can choose to continue working on the same topic as your FYP. You will still need to submit a proposal. Please consult your URFP supervisor.

Identify a Project Topic

Resources

- ▶ **Teacher profiles** for FYP - Check for inspirations and see if you have common interest
 - ▶ You can reach out to teachers for more information and advice.
- ▶ **Past FYP topics** - <https://www.cs.hku.hk/programmes/final-year-projects>
- ▶ Join the **FYP poster exhibition** on **May 3**
 - ▶ 12pm – 4pm, Foyer, G/F Composite Building (outside Starbucks Coffee) & Haking Wong Podium (outside Canteen)

Identify Potential Supervisor(s)

- ▶ Check the [Teacher profiles](#) and the CS homepage for potential supervisors who have common interest with your project topic.
- ▶ It is optional that you contact the teachers and obtain their consent to supervise your project.
- ▶ During proposal submission, you may specify 0-3 potential supervisors. Also indicate if you have obtained any prior consent of supervision.
- ▶ Note that under normal situations, a group will be assigned with the agreed supervisor. The Project Coordinator may, however, assign a group to another supervisor in some circumstances.

Identify Area of Interest

- ▶ You will need to specify at least 3-5 areas of interest for the project.
- ▶ Think about keywords that best reflect what your project is about
 - ▶ E.g., gamification, machine learning, NLP, VR, blockchain
- ▶ If you have some potential supervisors in mind, look at their slides and web pages to see the keywords regarding their research/project interest.
- ▶ These AOs are also used to facilitate project/supervisor matching.

Prepare a Short Project Description

- ▶ An informative **project title** is very important.
 - ▶ **Primary Objectives**: what applications or problems will be solved (e.g., personal fitness trainer, indoor route suggestion)
 - ▶ **Major Methodology** [optional] (e.g., machine learning? VR?)
 - ▶ **Main Deliverable** [optional] (e.g., an algorithm? an app? a web-based platform?)
- ▶ Some good examples:
 - ▶ Speeding Up Examination of Heart Diseases through the use of 3D Echocardiography and Machine Learning
 - ▶ Data-driven ESG scoring with NLP

Prepare a Short Project Description

You will need to submit a short proposal description of no more than 250 words which tells clearly:

- ▷ **Background:** the motivation of this project
- ▷ **Objectives:** what problems will be solved
- ▷ **Methodologies:** what methods / technologies will be involved
- ▷ **Deliverables:** what will be developed / delivered

Prepare a Short Proposal Description

A Good Example

Blockchain Technology is rapidly growing. Because of its high security and transparency provisions, one can witness a wide range of applications in supply chain management systems, healthcare, payments, business, IoT, voting systems, etc. using blockchain behind the scenes. Various governments provide cloud-based digital locker services for the citizens storing the public document on a centralized server. But due to its centralized nature, this type of service is weak against information breaches and Denial of Service (DoS) attacks. Therefore, **the protection of data of sensitive nature requires utmost attention.**

To promote and address such data security concerns, we would like to **propose a Decentralized Digital Locker application using Blockchain to store personal documents with high availability.** The proposed solution also verifies documents with ease, confidentiality, access control, data privacy, authenticity, and maintaining the integrity of documents. An important application of such identity document-holding projects can be managing and maintaining the voting process. The immutable aspect of blockchain can make the Voting process more secure, transparent, and reliable. **The deliverables shall include mobile and a web application, a blockchain network, alongside a cloud-based database management system.**

Project Allocation

- ▶ A supervisor will be assigned to your project by the Project Coordinator
 - ▶ Allocation will consider supervisor choices, teacher expertise & workload, etc.
 - ▶ Note that your project may not be assigned the teacher who agreed to supervise your project.
 - ▶ Don't worry if you do not have a chance to talk to any teacher before proposal submission. Your project will still be assigned a supervisor.
- ▶ Allocation results will be released in early August.
- ▶ Project students will then be automatically enrolled to COMP4801 or FITE4801.

What's next after project allocation?

- ▶ First deliverable: Due Week 4 of First Semester (i.e., early October)

Before submitting project plan:

- ▶ Contact Supervisor
- ▶ Confirm scope and deliverables

Can I change my project?

You may

- ▶ change the enrolled project to another project with the agreement of all concerned parties.
- ▶ change the group members with the agreement of all concerned parties.

Submit the Change Enrolled Project Form, provided by the Department,
within two weeks after the project is allocated.

Moodle Page for Project Allocation

(<https://moodle.hku.hk/user/index.php?id=103807>)

- ▶ All announcement for FYP project allocation will be made via Moodle.
- ▶ Year 3 students are automatically added to the Moodle page
- ▶ If you do not plan to take the FYP in 2023-24, send an email to fypadmin@cs.hku.hk with title “Not taking Next Year FYP”, and we will remove you from the Moodle.
- ▶ If you plan to take the FYP in 2023-24 and cannot access the Moodle page, send an email to fypadmin@cs.hku.hk with title “Want to take Next Year FYP”, and your Name, Student ID, and curriculum of study as content, so that we can add you to the Moodle page.

Act Now

- ▷ Look for project partners
- ▷ Identify project topic
- ▷ **Submit project proposal by June 30**
 - ▶ mark your calendar!
- ▷ Check Moodle announcements and information from time to time.
 - ▶ Make sure you also receive email notifications from Moodle.

Q&A