SBM5107 Capstone Project

Introduction

Students should carry out a *Capstone Project* on an individual basis in their final semester study. Each project is supervised by an academic staff, and assessed via written reports and presentations. The assessment will be conducted jointly by the supervisor (first examiner) and a moderator (second examiner). If needed, the FYP Coordinators will also provide advice and/or assistance.

Module Aims

This module aims to provide a major capstone project for students to develop the ability and skills for BIM project planning, execution and implementation. It also provides an opportunity for students to develop and consolidate comprehensive professional knowledge and strategic skills on BIM technology innovation and its holistic application. Students will apply the knowledge that they have learnt previously to work independently under realistic working environment related to BIM projects.

Students have to undertake critical analysis to formulate solutions for problems in different scenarios and apply professional knowledge and practices of BIM. As most of the BIM problems are complex and inter-disciplinary in nature, students should make significant use of the problem-solving skills in a range of technical, professional and management functions. They will be required to exercise appropriate judgment and innovation in the planning, design, technical and management functions related to BIM project planning and implementation.

Module Learning Outcomes

On completion of this Module, students are expected to be able to:

1. integrate and apply professional knowledge and skills in BIM project planning, execution and implementation;
2. demonstrate the ability to work independently on practical realization of BIM project tasks and critical analysis of BIM technology solutions;
3. apply problem-solving skills, judgement and innovation in a range of technical, professional and management functions for BIM projects; and
4. develop BIM applications and solutions for lifecycle planning and management of building, construction and infrastructure projects.

Module Outline

The module requires students to work independently and in a self-motivated manner on a major capstone project related to BIM applications. The topic of the project may consist of design development, solution evaluation or analytical investigation and should integrate the technical and professional knowledge of BIM that the students have learnt from other modules. Students are encouraged to suggest their own topics for the project; they may discuss with the academic staff and/or people in the industry to identify the gap and formulate suitable ideas for the project study.

This module allows students to apply and integrate the knowledge and skills learnt previously to solve authentic problems that may be encountered in the industry. The project measures students' ability to create and design, showcase coordination or collaboration work among disciplines or implement solutions and ideas with respect to the requirements of the project statement.

The project must be a substantial work related to the practical BIM projects in any of the relevant construction areas: interior design, architecture, buildings services, structures, quantity surveying, and facility management. It may be an innovative BIM modelling, system or process, or an improvement to the existing BIM model(s), workflow or system. It may include some form of BIM developmental work, evaluation of workable designs and implementation of project ideas. Students are expected to develop and evaluate solutions, present recommendations and findings systematically in a written report and in oral presentations.

The project will be managed and coordinated by experienced academic staff and each student will be supervised by a project advisor. A logical and systematic development process for the major project will be set up for the students to observe. The project development process is shown below.

(a) Project formulation: Information research and literature study; selection of study area and formulation of the project study topic; discussion with project advisor; development of a project plan and work schedule.
(b) Project implementation: Determine study or research methods; design project implementation plan; perform investigation work and analysis; critically appraise the findings; prepare for interim review and reporting; monitoring of progress.
(c) Project conclusion and reporting: Produce a formal written report detailing the work and findings; evaluate the results and develop the discussions and conclusions; prepare for oral presentations and recommendations from the study.

Student Participation

Students are required to consult their project advisors on a regular basis and should spend on average one day per week throughout the project period. They should take the initiative to evaluate and solve the problems during the project development. In addition to the continuous guidance provided by the advisors, students are required to participate in the following learning/teaching activities to enhance the learning outcomes.

- A briefing session on the arrangement, formality and assessments of the module.
- A project proposal seminar for students to learn how to plan and prepare the proposal of the project.
- A report writing seminar for students to learn how to prepare a written report and make oral presentations in a professional manner.
- An interim review presentation for students to report the progress and receive feedbacks.
- A final presentation for students to present their key findings and conclude the project study.

Project Selection

At the start of the project, there are two important tasks that the students must accomplish (though not necessarily in this order):

- Find a project advisor
- Select a project topic

To assist the students in selecting a topic, there is a set of project information. This contains a list of research areas and a number of project suggestions made by supervisors. These are only suggestions of suitable topics and there is no requirement that students must select one of them. In fact, students are strongly encouraged to formulate their own ideas for a project. The suggestions are provided as a guide to give students ideas and help them understand the scale of the project they should be attempting.
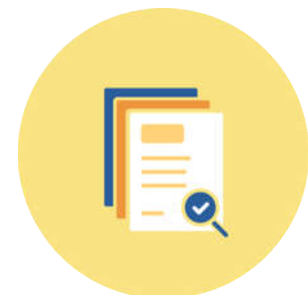
They should use the project information to view the list of potential supervisors, request a particular project that the project advisors have suggested, or to suggest their own project to a supervisor of their choice. If a student has difficulties of finding a project advisor or topic, then he/she should contact the project coordinators to seek for help on finding a supervisor and developing a project idea.

Project Advisor

Project advisor is an academic staff to whom student can turn for strategic advice and guidance. The expectation is that the project advisor will meet with the student every other week to discuss project progress. Initially, they will assess whether the project ideas are suitable, and can help the student improve them where needed. Another crucial role that project advisor fulfil is to read and comment on draft versions of the reports that the student intends to submit.

The way in which project supervisions are organised will vary depending on project advisor. They will arrange for meetings of approximately 30 minutes a fortnight for each student. Discussions may also be organised by email.

Assessment Components

Assessment will be criteria-based and will enable students to demonstrate their achievement of both the programme and module learning outcomes.

The percentage contributions of the different assessment items to the overall module assessment are shown below. The approximate period of submission is indicated as well.

- Project Proposal (10%):- Week 01-03
- Interim Report (20%):- Week 04-07
- Final Report (50%):- Week 08-14
- Oral Presentation (20%):- Week 12-14

The marking scheme and assessment rubrics for this module can be found on the course website.

http://ibse.hk/SBM5107/SBM5107_Capstone_Project_Marking_Scheme.pdf

http://ibse.hk/SBM5107/SBM5107_Capstone_Project_Assessment_Rubrics.pdf

Project Coordinators:

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Useful Resources

Resources page of SBM5107: http://ibse.hk/SBM5107/resources.htm

Resources on the following research skills can be found on the above website.

- Project formulation, proposal, planning & management
- Reading skills
- Literature review
- Referencing
- Report writing
- Oral presentations
- Library resources and search