

Subject Description Form

Subject Code	BME5156
Subject Title	Dissertation
Credit Value	9
Level	5
Responsible staff & Department/School	Dr Youhua TAN (BME, Dissertation Coordinator)
Pre-requisite / Co-requisite/ Exclusion	<p>Student must successfully complete at least 9 credits of subjects; and Student must attain a GPA of 3.20 or above</p> <p>*Special notes to students: Consent of Project Supervisor and endorsement of Dissertation Coordinator should be obtained BEFORE subject registration.</p>
Objectives	To develop analytical and research skills to incorporate evidence-based practice in the industry of healthcare
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a. demonstrate an understanding of relevant literature in the topic area selected; b. pursue an in-depth examination of a selected topic area of interest in health care, and relevant to the student's own work situation; c. demonstrate an ability to set the topic in its wider context, to sustain argument, and to present conclusions related to practice implications in health care practices in Hong Kong; d. make integrative linkages between theoretical concepts and practical/clinical experience; e. develop critical thinking and analytic evaluation skills through planning and implementing a research project, and evaluating the outcome in a systematic way and to a professional standard; f. develop and deepen their interest and awareness in on-going research in health care areas of their own interest by sensitizing themselves to their dual role as researchers and health care practitioners.
Contribution to Programme Outcomes (Refer to Part I Section 2)	<p>Programme Learning Outcome (a): Acquire and apply advanced levels of knowledge and skills in BME professions (Teach, Practice, and Measure)</p> <p>Programme Learning Outcome (b): Apply critical analysis and problem-solving skills for situations relating to their professional practice. (Teach, Practice, and Measure)</p> <p>Programme Learning Outcome (d): Develop analytical and research skills that will help them incorporate evidence-based practice in the delivery of healthcare services and industry (Teach, Practice, and Measure)</p> <p>Programme Learning Outcome (e): Demonstrate their abilities to continuously develop themselves in their professional practice (Teach, Practice, and Measure)</p>
Subject Synopsis/ Indicative Syllabus	There is no set syllabus for the dissertation. The student may select, plan and conduct a research project relating to any area in health care, subject to the availability of supervisors and their research interests and background. The research area should be in line with the student's overall design of his/her chosen programme of study and choice of subjects.

Teaching/Learning Methodology	<p>A topic for research will be mutually agreed upon between the student and the supervisor. The student will read widely on the scientific issues and, in specific areas, also in depth under the guidance of the supervisor. Students may be arranged into small groups and share their information in presentations.</p>						
Assessment Methods in Alignment with Intended Learning Outcomes	Teaching/learning methodology		Intended subject learning outcomes				
		a	b	c	d	e	f
	1. Guided study	√	√	√	√	√	√
	2. Presentations	√	√	√	√	√	√
Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed					
		a	b	c	d	e	f
1. Progress	20 %	√	√				√
2. Report	50 %			√	√	√	
3. Oral presentation	30 %			√	√	√	
Total	100 %						
<p>The assessment panel will jointly allocate a grade guided by the above weightings which may vary depending on the nature of the project. Individual awards may modify key items and the recommended weightings according to the needs of each award.</p>							
<p>The dissertation must reflect sufficient evidence of independent work to justify the award at the Master's level, and, preferably be job and profession related. It must be a topic related to the programme area of study in which the student is enrolled. As there is no single universal definition of what constitutes a Master's dissertation, the Dissertation Assessment Panel has the responsibility to decide whether the dissertation reaches the necessary level.</p>							
<p>The dissertation must satisfy the Dissertation Assessment Panel in the following:</p> <ul style="list-style-type: none"> • adequate knowledge of the chosen research topic; • understanding of the issues and developments in the research topic; • mastery of research procedures and design, techniques of data collection; • mastery of appropriate analytical procedures and appropriate interpretation; and • evidence of scientific validity. 							
Student Study Effort Expected	Class contact:						
	<ul style="list-style-type: none"> ▪ Tutorials 	19.5 Hrs.					
	<ul style="list-style-type: none"> ▪ Progress presentations & seminars 	3.5Hrs.					
	Other student study effort:						
	<ul style="list-style-type: none"> ▪ Literature review, research design, data collection, data analysis, preparation of proposal presentation and report 	328 Hrs.					
	Total student study effort						

Reading List and References	<ul style="list-style-type: none">▪ White, Susan E. Basic & clinical biostatistics, McGraw-Hill ; 2020▪ Mieczyslaw Pokorski. Trends in biomedical research, Cham : Springer ; 2020
Date of Last Major Revision	5 May 2021
Date of Last Minor Revision	20 June 2022

Guidelines for Dissertation

(i) Preparatory stage:

Dissertation Coordinator will arrange a Dissertation seminar at the beginning of each semester for students registered for the Dissertation. Students will be briefed on the structure and general operational guidelines of the dissertation. A list of staff research interests and possible topics will be distributed to the students. Students are encouraged to approach possible supervisors for advice prior to submitting a brief initial proposal (200 words) of their intended area of research. Based on the initial proposal, suitable supervisor(s) will be assigned as soon as possible.

(ii) Approval of the topic by the supervisor(s):

After the supervisor(s) is assigned, the student should contact his supervisor(s) as soon as possible to finalize the topic and scope of the research project.

(iii) Approval of the dissertation proposal by the Dissertation Coordinator:

- In consultation with the dissertation supervisor(s), the student works out a dissertation proposal (Form BME5156a)* which must show evidence of sound background knowledge and state in specific terms:
 - a. literature review, definition of the theoretical concepts to be used, and the basis for the research problem with reference to other such research;
 - b. specific aims and objectives;
 - c. methodology of the study, i.e. the ways in which data are to be collected, analyzed and reported;
 - d. a list of reference;
 - e. a research action schedule.
- The student should refer to the *Dissertation Handbook* for the procedures and format of submission of the dissertation proposal for approval by the Dissertation Coordinator.
- Once a dissertation proposal is approved, the student shall proceed at once to carry out the work. The maximum number of dissertation proposals which a student may submit is two.
- Students should be aware that approval to commence a dissertation is by no means automatic. There may be cases where a student is not permitted to proceed with a dissertation and such students will be required to leave the Programme on completion of the requirements for a Postgraduate Diploma award.

(iv) Approval of the completed draft dissertation report by the supervisor(s):

- The student must monitor his/her own progress throughout the preparation of the dissertation. He/she should seek advice from his/her supervisor(s) whenever necessary. A progress report (Form BME5156b) should be submitted to the Programme Leader via his/her academic supervisor at least once every semester to ensure smooth progress of the dissertation.
- The student will give one or two presentations on the progress of the research project before the viva examination, if required by the supervisor.
- These presentations have multi-purposes and are designed to:
 - a. help the student to work within the normal time-frame allowed for the dissertation;
 - b. help the student to fine tune the project. Through the discussions during the presentation, drawing on research experience from other dissertation supervisors and other students who may have experience in the subject area, the student may gain further insight into the project;
 - c. help the student to develop presentation and communication skills in preparation for the oral examination of the dissertation.
- The student should submit:
 - a. the drafts of the major sections of the report to the dissertation supervisor(s) for advice and comments as they are prepared.
 - b. the completed report to the dissertation supervisor(s) for approval.
 - c. the Dissertation Submission Form (Form BME5156c)* with Section I completed.

(v) Completion and submission of the formal Dissertation Report to the Dissertation Assessment Panel:

- The dissertation supervisor(s) will assess the continuous effort and performance of the student during the preparation, implementation of the research project and on the progress report presentations.
- The dissertation supervisor will send copies of the approved report to the members of the Dissertation Assessment Panel, and make arrangements with the Dissertation Assessment Panel and the student for the oral examination.

(vi) Oral Examination

- The Dissertation Assessment Panel will hold a *viva voce* examination for approximately forty-five minutes. The student will be required to make a presentation of the research project which lasts for around twenty minutes.
- The assessment for the oral examination will take into consideration
 - a. the student's knowledge and understanding of the research problem, analysis and interpretation of the research finding;
 - b. the student's ability to answer queries;
 - c. the student's presentation and communication skills.

(vii) Dissertation Report

- Each Dissertation Assessment Panel member assesses the report independently and after conducting the oral examination, the Dissertation Assessment Panel members will jointly allocate a **Grade**.
- In assessing the report, the panel members will adopt the following assessment guidelines. The dissertation is expected to show evidence of:
 - a. an ordered, critical and reasoned exposition of knowledge gained through the student's independent effort;
 - b. extensive critical literature review and gathering of relevant information;
 - c. an ability to make critical use of published work and source materials and relate to students' area of research in health care;
 - d. critical examination and appropriate application of theory and concepts to practical/clinical work;
 - e. competence in independent work or experimentation;
 - f. an understanding of appropriate research techniques;
 - g. an appreciation of the relationship of the selected topic to the wider field of knowledge in health care;
 - h. a certain degree of original investigation or the testing of ideas.
 - i. being worthy, in part, of publication.
 - j. achieving a high level of written presentation of the report (written in fluent, succinct English, suitably illustrated and appropriately organized and referenced).

(viii) Final Dissertation Report

On receiving the supervisor(s)' report on the outcome of dissertation assessment, the student should submit the final dissertation report to the Academic Supervisor (within one month after the oral presentation is held).

MSc in Biomedical Engineering

Application for Registration of Dissertation (BME5156)

Part I (to be completed by student)

Student Name: _____

Student Number: _____

Please tick the appropriate boxes below and give response whenever this is required.

- I have successfully completed at least 9 credits of subjects; and,
- I have attained a GPA of 3.20 or above.

- My proposed area(s) of research (Please identify 2 to 3 areas):

I have discussed my proposed area of research with _____
(Name of academic staff)

I have not yet discussed my potential area of research with any academic staff.

Other comments/requests:

Signature of student: _____ Date: _____

Part II (to be signed by dissertation supervisor and Dissertation Coordinator)

I agree to supervise dissertation study of the student.

Name of dissertation supervisor: _____

Signature of dissertation supervisor: _____ Date: _____

I approve registration of the subject (BME5156) for the student.

Dissertation Coordinator: Dr Youhua TAN

Signature of Dissertation Coordinator: _____ Date: _____

This form should be submitted to BME General Office in person or by fax at 2334 2429 for subject registration after endorsed by the proposed supervisor and approved by the Dissertation Coordinator.