City University of Hong Kong
Course Syllabus

offered by Department of Biomedical Sciences
with effect from Semester A 2024/25

Part I   Course Overview

Course Title: Wearable Technologies and Health Science Research

Course Code: BMS5011

Course Duration: One semester

Credit Units: 3

Level: 5

Medium of Instruction: English

Medium of Assessment: English

Prerequisites:
(Course Code and Title) NIL

Precursors:
(Course Code and Title) NIL

Equivalent Courses:
(Course Code and Title) NIL

Exclusive Courses:
(Course Code and Title) NIL

Part II   Course Details

1.   Abstract

The course aims to facilitate students with different educational backgrounds to gain basic healthcare knowledge and innovative methods and techniques for wearable technology and health science research. The lecture content covers knowledge about material and engineering technologies for wearable healthcare devices, sensing and feedback technologies, health research with exposure modelling and healthcare data management. Students will deliver a presentation and submit a written essay with specific topics that are related to the wearable technology and health science research.

2.   Course Intended Learning Outcomes (CILOs)
(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Recognize the significance of healthcare data for personal health monitoring and disease management.	20		✓	✓
2.	Recognize the functions and principles of various materials and technologies that are used in wearable devices.	30	✓	✓	✓
3.	Explain and demonstrate the ability to evaluate the outcomes and concerns of the health data management.	30	✓	✓	✓
4.	Describe the concepts of wearable technology and health informatics and justify and apply them in research projects.	20	✓	✓	✓
		100%			

A1:   Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.
A2:   Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.
A3:   *Accomplishments*
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

3. Learning and Teaching Activities (LTAs)
(LTAs designed to facilitate students' achievement of the CILOs.)

LTA	Brief Description	CILO No. 1	2	3	4	Hours/week (if applicable)
Lecture	Students will engage in formal lectures to gain various principles, application and methodologies of wearable technology and health data informatics, as well as the implementation of wearable technology for personal health monitoring and disease management.	✓	✓	✓	✓	
Tutorial and group discussions	Students will give an oral presentation on a certain topic in wearable technology and health science research. They will actively engage as audience members during peers' presentations to stimulate thoughts and views.			✓	✓	

4. Assessment Tasks/Activities (ATs)
(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No. 1	2	3	Weighting	Remarks
Continuous Assessment: **100 %**					
Oral presentation	✓	✓	✓	30	
Attendance				20	
Examination	✓	✓	✓	50	essay writing
				100%	

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Applicable to students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
Oral Presentation	Ability to analyse and criticise the implementation of wearable technologies	Outstanding performance on all CILOS. Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.	Substantial performance on all CILOS. Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.	Satisfactory performance on the majority of CILOS possibly with a few weaknesses. Being able to profit from the course experience; understanding of the subject; ability to develop solutions to simple problems in the material.	Barely satisfactory performance on a number of CILOS. Sufficient familiarity with the subject matter to enable the student to progress without repeating the course	Unsatisfactory performance on a number of CILOS. Failure to meet specified assessment requirements, little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited or irrelevant use of literature.
Examination	Ability to analyse, state and apply the principles and subject matter learnt in the course					

Applicable to students admitted from Semester A 2022/23 to Summer Term 2024

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
Oral Presentation	Ability to analyse and criticise the implementation of wearable technologies	Outstanding performance on all CILOs. Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.	Substantial performance on all CILOS. Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.	Satisfactory performance on the majority of CILOS possibly with a few weaknesses. Being able to profit from the course experience; understanding of the subject; ability to develop solutions to simple problems in the material.	Unsatisfactory performance on a number of CILOS. Failure to meet specified assessment requirements, little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited or irrelevant use of literature.
Examination	Ability to analyse, state and apply the principles and subject matter learnt in the course				

Part III   Other Information (more details can be provided separately in the teaching plan)

1.   **Keyword Syllabus**
      (An indication of the key topics of the course.)
      Flexible electronics
      Stretchable electronics
      Wearable healthcare devices
      Advanced sensing technology
      TeleHealth
      Health research with exposure modelling
      Healthcare data management
      Data privacy and ethics

2.   **Reading List**
2.1 **Compulsory Readings**

      Nil

2.2 **Additional Readings**
      (Additional references for students to learn to expand their knowledge about the subject.)

      Nil