

**City University of Hong Kong  
Course Syllabus**

**offered by Department of Biomedical Sciences  
with effect from Semester A 2022/2023**

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**Part I Course Overview**

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| <b>Course Title:</b>   | <b>Frontiers in Biomedical Research</b> |
| <b>Course Code:</b>  | <b>BMS8102</b>                          |
| <b>Course Duration:</b>                                      | <b>One semester</b>                     |
| <b>Credit Units:</b>   | <b>2</b>                                |
| <b>Level:</b>  | <b>R8</b>                               |
| <b>Medium of Instruction:</b>                                | <b>English</b>                          |
| <b>Medium of Assessment:</b>                                 | <b>English</b>                          |
| <b>Prerequisites:</b><br><i>(Course Code and Title)</i>      | <b>Nil</b>                              |
| <b>Precursors:</b><br><i>(Course Code and Title)</i>         | <b>Nil</b>                              |
| <b>Equivalent Courses:</b><br><i>(Course Code and Title)</i> | <b>Nil</b>                              |
| <b>Exclusive Courses:</b><br><i>(Course Code and Title)</i>  | <b>Nil</b>                              |

## Part II Course Details

### 1. Abstract

This is an advanced course on a variety of topics in biomedical sciences, with examples including cutting edge scientific discoveries and advanced techniques for modern biomedical sciences research. Advanced seminars will be given by a group of lecturers. The topics will be announced in advance when this course is offered. It will cover a broad range of topics and serve as a useful supplement to the specialized advanced courses existing in the programme.

This course aims to enable the students to achieve the following objects:

- Identify and explain, to an appropriate extent, the real-world and technological importance/relevance of the subject matters;
- Describe the selected experimental and theoretical principles of Biomedical Sciences and its applied ramifications;
- Apply such principles to phenotypical and analytical studies in Biomedical Sciences; and
- Compare and relate the selected topics and generate conceptual links between different research fields, in order to establish a broader perspective on these foundational topics.

### 2. Course Intended Learning Outcomes (CILOs)

| No. | CILOs <sup>#</sup>   | Weighting<br>(if applicable) | Discovery-enriched curriculum related learning outcomes |    |    |
|-----|--|------------------------------|---|----|----|
|     |  |                              | A1  | A2 | A3 |
| 1.  | Carry out basic analysis of the concepts and seminal discoveries in the selected areas of modern biomedical sciences.  |                              |   | ✓  |    |
| 2.  | Select or design suitable approaches for carrying out a critical study of a research subject.  |                              |   | ✓  |    |
| 3.  | Critically evaluate experiments/processes/outcomes in the selected topics and in the literatures and effectively relate these knowledges to one's special study field. |                              |   | ✓  |    |
| 4.  | Identify the scientific and social impacts of technologies in biomedical sciences.   |                              | ✓   |    |    |
|     |  | 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 self-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. Teaching and Learning Activities (TLAs)

| TLA                  | Brief Description  | CILO No. |   |   |   | Hours/week<br>(if applicable) |
|----------------------|--|----------|---|---|---|-------------------------------|
|                      |  | 1        | 2 | 3 | 4 |                               |
| Lecture,<br>tutorial | Teaching and learning will be discovery-based relying on a combination of lectures and discussions to elucidate the approaches of modern biomedical sciences research and its technological impacts. | ✓        | ✓ | ✓ | ✓ |                               |

The TLAs provided above are indicative of the likely activities that students will undertake in this course. Final details of the individual course components, including large and small group teaching sessions, case studies, discussions and oral presentations, will be provided in the student course documents distributed at the commencement of the course.

### 4. Assessment Tasks/Activities (ATs)

| Assessment Tasks/Activities      | CILO No. |   |   |   | Weighting | Remarks |
|----------------------------------|----------|---|---|---|-----------|---------|
|                                  | 1        | 2 | 3 | 4 |           |         |
| Continuous Assessment: 100%      |          |   |   |   |           |         |
| Attendance and class discussions |          |   |   | ✓ | 20%       |         |
| Final report                     | ✓        | ✓ | ✓ | ✓ | 80%       |         |
| Examination: 0%                  |          |   |   |   |           |         |
|                                  |          |   |   |   | 100%      |         |

## 5. Assessment Rubrics

### Applicable to students admitted in Semester A 2022/23 and thereafter

| Assessment Task  | Criterion  | Excellent<br>(A+, A, A-)   | Good<br>(B+, B)   | Marginal<br>(B-, C+, C)   | Failure<br>(F)   |
|--|--|--|---|---|--|
| Assignments including critical review and analysis of particular subject | Knowledge, processes and technologies covered in class, and the implications in modern biomedical research;<br>Usage of the information and literature sources;<br>Understanding major current topics in the literature regarding the selected topics;<br>Performance in teacher-student interaction, which requires the student to critically evaluate the research topics. | 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 |

### Applicable to students admitted before Semester A 2022/23

| Assessment Task  | Criterion  | Excellent<br>(A+, A, A-)   | Good<br>(B+, B, B-)   | Fair<br>(C+, C, C-)   | Marginal<br>(D)  | Failure<br>(F)  |
|--|--|--|---|---|--|---|
| Assignments including critical review and analysis of particular subject | Knowledge, processes and technologies covered in class, and the implications in modern biomedical research;<br>Usage of the information and literature sources;<br>Understanding major current topics in the literature regarding the selected topics;<br>Performance in teacher-student interaction, which requires the student to critically evaluate the research topics. | 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 |

### **Part III Other Information**

#### **1. Keyword Syllabus**

- i) Biomedical sciences and the society
- ii) Industrial, biological and environmental importance of biomedical sciences
- iii) Biotechnology

#### **2. Reading List**

##### **2.1 Compulsory Readings**

Nil

##### **2.2 Additional Readings**

Nil