

## Curriculum for BSc in Molecular Biomedical Sciences

### Major Program Requirements

#### Core courses

|        |           |  |           |
|--------|-----------|--|-----------|
|        | BIOL 104  | Cell Biology                             | [3-0-0:3] |
|        | BIOL 124  | Cell Biology Laboratory                  | [0-2-3:3] |
|        | BIOL 206  | Microbiology                             | [3-0-0:3] |
|        | BIOL 211  | General Genetics                         | [3-1-0:4] |
|        | BIOL 226  | Microbiology Laboratory                  | [0-2-3:3] |
|        | BIOL 251  | Molecular Genetics Research Project I    | [0-0-6:2] |
| or (1) | BICH 200A | Research in Modern Biochemistry          | [0-0-6:2] |
|        | BIOL 252  | Molecular Genetics Research Project II   | [0-0-6:2] |
| or (1) | BICH 200B | Research in Modern Biochemistry          | [0-0-6:2] |
|        | BICH 121  | Introduction to Biochemistry             | [3-0-0:3] |
|        | BICH 122  | Intermediary Metabolism                  | [3-0-0:3] |
|        | BICH 172  | Introductory Biochemical Laboratory      | [0-0-6:2] |
|        | BICH 182  | Biochemical Laboratory Techniques        | [1-0-0:1] |
|        | BICH 201  | Molecular and Cellular Biochemistry I    | [3-0-0:3] |
| (2)    | BICH 211  | Biochemistry of Nucleic Acid             | [0-0-6:2] |
| (2)    | BICH 221  | Principles of Recombinant DNA Technology | [1-0-0:1] |
| (3)    | BISC 397  | Biomedical Sciences Research Project I   | [0-0-9:3] |
| (3)    | BISC 398  | Biomedical Sciences Research Project II  | [0-0-9:3] |
|        | CHEM 101  | Fundamentals of Organic Chemistry        | [3-0-0:3] |
|        | CHEM 131  | Inorganic Chemistry I                    | [3-1-0:4] |
|        | CHEM 141  | Analytical Chemistry                     | [3-0-0:3] |

#### Required courses

|     |      |                      |             |
|-----|------|----------------------|-------------|
| (4) | PHYS | Physics Elective     | [4 credits] |
| (5) | MATH | Mathematics Elective | [3 credits] |

#### Elective courses

| Elective types |      | Minimum<br>no. of courses                     | Minimum<br>total credits |    |
|----------------|------|---|--------------------------|----|
| (6a)           | BISC | Biological Science Elective                   | 5                        | 15 |
| (6b)           | BISC | Biomedical Science/<br>Biotechnology Elective | 1                        | 3  |
|                | FREE | Free Elective                                 | 2                        | 6  |

### General Education Requirements

Electives must be selected from amongst those general education courses that are listed under the section "Designated General Education Courses for Undergraduate Students" of the online Course Catalog at <http://publish.ust.hk/calendar>.

| Elective types |   | Minimum<br>no. of courses | Minimum<br>total credits |
|----------------|---|---------------------------|--------------------------|
| (7)            | GEE(ENGG) Engineering General<br>Education Elective                   | 1                         | 6                        |
|                | GEE(SB&M) Business and Management<br>General Education Elective       | 1                         |                          |
| (8)            | GEE(H&SS) Humanities and Social Science<br>General Education Elective | 4                         | 12                       |

### Required Courses in English Communication

|      |             |  |           |
|------|-------------|--|-----------|
| (9)  | LANG 108    | English for Science Students                   | [0-2-0:2] |
|      | or LANG 102 | Styles of English for Science Students         | [0-2-0:2] |
| (10) | LANG 208    | English Communication for Science Students I   | [0-2-0:1] |
|      | or LANG 202 | Styles of English for Science Students II      | [0-2-0:1] |
|      | LANG 209    | English Communication for Science Students II  | [0-2-0:1] |
|      | or LANG 203 | Styles of English for Science Students III     | [0-2-0:1] |
|      | LANG 308    | English Communication for Science Students III | [0-2-0:1] |

### Other Requirement

|      |          |                    |            |
|------|----------|--------------------|------------|
| (11) | HLTH 001 | Healthy Life Style | [0 credit] |
|------|----------|--------------------|------------|

#### Notes:

- (1) This course could be replaced by CHEM 254 and CHEM 256
- (2) BICH 211 and BICH 221 can be substituted by BISC 212 upon instructor's approval.
- (3) A new project research course under the supervision of faculty from BIOL/BICH/CHEM, which can be substituted by BISC/CHEM 300-level courses upon special approval by the program.
- (4) Recommended as PHYS 011 and PHYS 031; or PHYS 111; or PHYS 121.
- (5) Recommended as MATH 006/021.
- (6a) Students have to elect five Biomedical Science electives from the following courses. At least four of them should be courses at 300 or above level. They can be selected from the following courses:  
BICH 202, BICH 323, BICH 333, BICH 366,  
BIOL 108, BIOL 128, BIOL 202, BIOL 216, BIOL 222, BIOL 396,  
BISC 203, BISC 207, BISC 212, BISC 213, BISC 215, BISC 224, BISC 233, BISC 306, BISC 309, BISC 314, BISC 315, BISC 317, BISC 319, BISC 336, BISC 338, BISC 354, BISC 355, BISC 358, BISC 362, BISC 363, BISC 376, BISC 395,  
CHEM 102, CHEM 153, CHEM 154, CHEM 155, CHEM 212, CHEM 222, CHEM 232, CHEM 244, CHEM 312, CHEM 313,  
MATH 365 or additional course approved by program coordinator. Among these courses, CHEM 102 is recommended as an elective for students with preference of a stronger chemistry oriented curriculum.
- (6b) Biomedical Science and Biotechnology electives to be selected among the following courses: BISC 306, BISC 314, BISC 315, BISC 336, BISC 338, BISC 363, BISC 376.
- (7) Recommended to be COMP or CENG courses.
- (8) Of these courses, at least one course in Humanities and one in Social Science are required.
- (9) Students with Grade B or above at AS Use of English, or equivalent qualifications, are required to take LANG 102. Students not having taken AS Use of English should consult the Language Center for appropriate course allocation.
- (10) Students who took LANG 102 should take LANG 202 and LANG 203 in their second year of study.

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(11) Students are required to take and pass this course in their first year of study. Details of the course and its requirements are announced on the course website <http://sao.ust.hk/HLTH001> managed by the Student Affairs Office.

A minimum of 105 credits is required for the BSc program in Molecular Biomedical Sciences.

**Recommended Pattern of Study for BSc in Molecular Biomedical Sciences**

|          |        |   |                      |
|----------|--------|---|----------------------|
| 1st year | Fall   | C BIOL 104, BIOL 124, BICH 121, CHEM 101,<br>CHEM 131<br>R HLTH 001, LANG 108/LANG 102, PHYS                    | (Total: 20 credits)  |
|          | Spring | C BICH 122, BICH 172, BICH 182,<br>BIOL 251/BICH 200A<br>R HLTH 001, LANG 108/LANG 102, MATH<br>E GEE(H&SS)     | (Total: 16* credits) |
| 2nd year | Fall   | C BIOL 252/BICH 200B, BIOL 211, BICH 201,<br>BICH 211, BICH 221, CHEM 141<br>R LANG 208/LANG 202<br>E GEE(ENGG) | (Total: 19 credits)  |
|          | Spring | C BIOL 206, BIOL 226<br>R LANG 209/LANG 203<br>E BISC (200-level), GEE(H&SS), FREE                              | (Total: 16 credits)  |
| 3rd year | Fall   | C BISC 397<br>R LANG 308<br>E two BISC (300-level), GEE(SB&M),<br>GEE(H&SS), FREE                               | (Total: 19 credits)  |
|          | Spring | C BISC 398<br>E three BISC (300-level), GEE(H&SS)   | (Total: 15 credits)  |

\* LANG 108 and LANG 102 are two-semester courses. The course credits will be earned on completion of the courses at the end of 1st year Spring.

C = core course; R = required course; E = elective course