



الجامعة الإسلامية العالمية ماليزيا

**KULLIYAH OF SCIENCE,  
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA  
BACHELOR OF BIOTECHNOLOGY (HONOURS)  
STUDY PLAN  
(BATCH 261 ONWARDS)**

**PROGRAMME STRUCTURE SEMESTER I, 2026/2027**

In order to obtain the degree of Bachelor of Biotechnology from IIUM, a student must successfully complete 127 Credit Hours (CH) of course work consisting of the University, Kulliyyah and Department requirements, as shown below:

| No    | Type of Courses |                                    | Credit Hour<br>(CH) | Percentage<br>(%) |
|-------|-----------------|------------------------------------|---------------------|-------------------|
| 1     | Compulsory      | University Required Courses        | 18                  | 14.2              |
| 2     |                 | Kulliyyah Required Courses         | 5                   | 3.9               |
| 3     |                 | Kulliyyah Required Courses (SULAM) | 2                   | 1.6               |
| 4     | Core            | Core Courses                       | 67                  | 52.7              |
| 5     |                 | Final Year Project                 | 8                   | 6.3               |
| 6     |                 | Internship                         | 12                  | 9.5               |
| 7     | Elective        | Elective (Core)                    | 12                  | 9.5               |
| 8     |                 | Elective (Free)                    | 3                   | 2.4               |
| TOTAL |                 |                                    | 127                 | 100               |

**UNIVERSITY REQUIRED COURSES**

Every student must complete all university required courses (18 CH in total), which consists of MPU-U1 (Appreciating philosophy, values and history) 6 CH, MPU-U2 (Mastering human skills) 6 CH, MPU-U3 (Broadening knowledge) 4 CH, and MPU-U4 (Developing practical, community-oriented skills) 2CH. (Table 1)

**KULLIYAH REQUIRED COURSES**

Students are required to complete the Kulliyyah courses of 7 CH in total; which are Philosophy of Science (3 CH) and Science for Service Learning and Community Engagement (2 CH), and Islam and Scientific Knowledge (2CH) (Table 2).

**DEPARTMENTAL CORE COURSES**

Students are required to complete (67 CH) of core courses. (Table 3). These courses provide the necessary foundation in Biological sciences subjects and Biotechnology.

**FINAL YEAR PROJECT & INTERNSHIP**

In Final year project I and II student will select a project of 8 CH in total which involve hands-on or practical experience in any given Biotechnology topic. The compulsory Internship carries a total of 12 CH. Each student must choose his/her place of internship, which could be in the areas involving management, industry, research, education or in a specialized laboratory work. Students may also have their training in medical science laboratories in hospitals or other medical institutions

**TABLE 1: UNIVERSITY REQUIRED COURSES (18 CH)**

|             |                                             |             | MALAYSIAN |       | INTERNATIONAL |       |
|-------------|---------------------------------------------|-------------|-----------|-------|---------------|-------|
| Course Code | Course Name                                 | Credit hour | Muslim    | Other | Muslim        | Other |
| SEMESTER 1  |                                             |             |           |       |               |       |
| MPUG 3122   | Falsafah dan Cabaran Semasa                 | 2           | 2         | 2     |               |       |
| UNGS 3122   | Philosophy and Contemporary Challenges      | 2           |           |       | 2             | 2     |
| MPUG 3112   | Aspirasi Negara Bangsa                      | 2           | 2         | 2     |               |       |
| MPUG 3142   | Malaysian Citra                             | 2           |           |       | 2             | 2     |
| LEED 1201   | Academic English for Sustainability         | 2           | 2         | 2     | 2             | 2     |
| CCUB 1000   | Usrah                                       | 1           | 1         | 1     | 1             | 1     |
| CCSS 3000   | Skill                                       | 1           | 1         | 1     | 1             | 1     |
| TOTAL       |                                             |             | 8         | 8     | 8             | 8     |
| SEMESTER 2  |                                             |             |           |       |               |       |
| TQTD 1002   | Tilawah Al-Qur'an 1                         | 0.5         | 0.5       |       | 0.5           |       |
| LQAD 1113   | Arabic for Understanding Ibadah I           | 1           | 1         |       | 1             |       |
| LQAD 1131   | Arabic for Effective Communication I        | 1           |           | 1     |               | 1     |
| LMBD 3204   | Bahasa Melayu Kerjaya (Sains & Teknologi)   | 2           | 2         | 2     |               |       |
| MPUG 3162   | Bahasa Melayu Komunikasi (Nusantara)        | 2           |           |       | 2             | 2     |
| MPUG 3152   | Bahasa Melayu Komunikasi                    | 2           |           |       |               |       |
| CCLF 2000   | Leadership and Family Management            | 1           | 1         | 1     | 1             | 1     |
| TOTAL       |                                             |             | 4.5       | 4     | 4.5           | 4     |
| SEMESTER 3  |                                             |             |           |       |               |       |
| UNGS 1213   | Tawhidic Epistemology and Islamic Worldview | 2           | 2         | 2     | 2             | 2     |
| MPUG 3132   | Integrity and Anti-Corruption               | 2           | 2         | 2     | 2             | 2     |
| TQTD 2002   | Tilawah Al-Qur'an 2                         | 0.5         | 0.5       |       | 0.5           |       |
| LQAD 2123   | Arabic for Understanding Ibadah II          | 1           | 1         |       | 1             |       |
| LQAD 2232   | Arabic for Effective Communication II       | 2           |           | 2     |               | 2     |
| TOTAL       |                                             |             | 5.5       | 6     | 5.5           | 6     |
| GRAND TOTAL |                                             |             | 18        | 18    | 18            | 18    |

*Note: Students from CFS may apply for exemption for any courses taken during CFS, IIUM*

**TABLE 2: KULLIYAH REQUIRED COURSES (7 CH)**

| Course Code  | Course Title                                          | Credit Hours |
|--------------|-------------------------------------------------------|--------------|
| BKOS 1201    | Science for Service Learning and Community Engagement | 2            |
| BKOS 1303    | Philosophy of Science                                 | 3            |
| BKOS 1202    | Islam and Scientific Knowledge                        | 2            |
| <b>TOTAL</b> |                                                       | <b>7</b>     |

**TABLE 3: GENERAL CORE COURSES (67 CH)**

| Course code  | Title                                                | Credit Hours   | Pre-requisite |
|--------------|------------------------------------------------------|----------------|---------------|
| BSBT 1311    | General Chemistry                                    | 3              |               |
| BSBT 1212    | Calculus for Biology                                 | 2              |               |
| BSBT 1313    | Fundamentals of Microbiology                         | 3              |               |
| BSBT 1321    | Principles of Biochemistry                           | 3              |               |
| BSBT 1322    | Cell Biology                                         | 3              |               |
| BSBT 1323    | Principles of Cell and Tissue Culture                | 3              |               |
| BSBT 1324    | Molecular Biology                                    | 3              |               |
| BSBT 2311    | Recombinant DNA Technology                           | 3              |               |
| BSBT 2312    | Genetics                                             | 3              |               |
| BSBT 2313    | Enzymology                                           | 3              |               |
| BSBT 2315    | Chemistry & Biochemistry of Natural Product          | 3              |               |
| BSBT 2221    | Regulation and Ethics in Biotechnology               | 2              |               |
| BSBT 2222    | Bioentrepreneurship                                  | 2              |               |
| BSBT 2323    | Fermentation Technology                              | 3              |               |
| BSBT 2324    | Bioinformatics                                       | 3              |               |
| BSBT 2325    | Biodiversity & Conservation                          | 3              |               |
| BSBT 2327    | Biostatistics                                        | 3              |               |
| BSBT 3212    | Research Methodology and Scientific Communication    | 2              |               |
| BSBT 3312    | Protein Biotechnology                                | 3              |               |
| BSBT 3313    | Instrumentation in Biotechnology Research            | 3              |               |
| BSBT 3314    | Bioprocess Design and Optimisation                   | 3              |               |
| BSBT 3316    | Immunology and Immunotechnology                      | 3              |               |
| BSBT 3222    | Final Year Project I                                 | 2              |               |
| BSBT 3221    | Concept of Halal and Haram in Food and Biotechnology | 2              |               |
| BSBT 4311    | Bionanotechnology                                    | 3              |               |
| BSBT 4612    | Final Year Project II                                | 6              | *             |
| BSBT 4122    | Internship                                           | 12             |               |
| <b>TOTAL</b> |                                                      | <b>67 + 20</b> |               |

**Study Plan**

**YEAR 1**

**Study Level: Semester 1**

**Academic**

**Session: Semester 1, 2026/2027**

| Course Code  | Course Name                            | LOCAL  |       | International |       |
|--------------|----------------------------------------|--------|-------|---------------|-------|
|              |                                        | Muslim | Other | Muslim        | Other |
| BSBT 1311    | General Chemistry                      | 3      | 3     | 3             | 3     |
| BSBT 1212    | Calculus for Biology                   | 2      | 2     | 2             | 2     |
| BSBT 1313    | Fundamentals of Microbiology           | 3      | 3     | 3             | 3     |
| MPUG 3122    | Falsafah dan Cabaran Semasa            | 2      | 2     |               |       |
| UNGS 3122    | Philosophy and Contemporary Challenges |        |       | 2             | 2     |
| LEED 1201    | Academic English for Sustainability    | 2      | 2     | 2             | 2     |
| CCUB 1000    | Usrah                                  | 1      | 1     | 1             | 1     |
| CCSS 3000    | Skill                                  | 1      | 1     | 1             | 1     |
| MPUG 3132    | Integrity and Anti-Corruption          | 2      | 2     | 2             | 2     |
| MPUG 3112    | Aspirasi Negara Bangsa                 | 2      | 2     |               |       |
| MPUG 3142    | Malaysian Citra                        |        |       | 2             | 2     |
| <b>TOTAL</b> |                                        | 18     | 18    | 18            | 18    |

**Study Level: Semester 2**

**Academic**

**Session: Semester 2, 2026/2027**

| Course Code  | Course Name                                           | LOCAL  |       | International |       |
|--------------|-------------------------------------------------------|--------|-------|---------------|-------|
|              |                                                       | Muslim | Other | Muslim        | Other |
| BSBT 1321    | Principles of Biochemistry                            | 3      | 3     | 3             | 3     |
| BSBT 1322    | Cell Biology                                          | 3      | 3     | 3             | 3     |
| BSBT 1323    | Principles of Cell and Tissue Culture                 | 3      | 3     | 3             | 3     |
| BSBT 1324    | Molecular Biology                                     | 3      | 3     | 3             | 3     |
| TQTD 1002    | Tilawah Al-Qur'an 1                                   | 0.5    |       | 0.5           |       |
| LQAD 1113    | Arabic for Understanding Ibadah I                     | 1      |       | 1             |       |
| LQAD 1131    | Arabic for Effective Communication I                  |        | 1     |               | 1     |
| LMBD 3204    | Bahasa Melayu Kerjaya (Sains & Teknologi)             | 2      | 2     |               |       |
| MPUG 3162    | Bahasa Melayu Komunikasi (Nusantara)                  |        |       | 2             | 2     |
| MPUG 3152    | Bahasa Melayu Komunikasi                              |        |       |               |       |
| CCLF 2000    | Leadership and Family Management                      | 1      | 1     | 1             | 1     |
| BKOS 1201    | Science for Service Learning and Community Engagement | 2      | 2     | 2             | 2     |
| <b>TOTAL</b> |                                                       | 18.5   | 18    | 18.5          | 18    |

**YEAR 2****Study Level: Semester 3****Academic****Session: Semester 1, 2027/2028**

| Course Code  | Course Name                                 | LOCAL  |       | International |       |
|--------------|---------------------------------------------|--------|-------|---------------|-------|
|              |                                             | Muslim | Other | Muslim        | Other |
| BSBT 2311    | Recombinant DNA Technology                  | 3      | 3     | 3             | 3     |
| BSBT 2312    | Genetics                                    | 3      | 3     | 3             | 3     |
| BSBT 2313    | Enzymology                                  | 3      | 3     | 3             | 3     |
| BSBT 2315    | Chemistry & Biochemistry of Natural Product | 3      | 3     | 3             | 3     |
| UNGS 1213    | Tawhidic Epistemology and Islamic Worldview | 2      | 2     | 2             | 2     |
| TQTD 2002    | Tilawah Al-Qur'an 2                         | 0.5    |       | 0.5           |       |
| LQAD 2123    | Arabic for Understanding Ibadah II          | 1      |       | 1             |       |
| LQAD 2232    | Arabic for Effective Communication II       |        | 2     |               | 2     |
| <b>TOTAL</b> |                                             | 15.5   | 16    | 15.5          | 16    |

**Study Level: Semester 4****Academic****Session: Semester 2, 2027/2028**

| Course Code  | Course Name                            | LOCAL  |       | International |       |
|--------------|----------------------------------------|--------|-------|---------------|-------|
|              |                                        | Muslim | Other | Muslim        | Other |
| BSBT 2221    | Regulation and Ethics in Biotechnology | 2      | 2     | 2             | 2     |
| BSBT 2222    | Bioentrepreneurship                    | 2      | 2     | 2             | 2     |
| BSBT 2323    | Fermentation Technology                | 3      | 3     | 3             | 3     |
| BSBT 2324    | Bioinformatics                         | 3      | 3     | 3             | 3     |
| BSBT 2325    | Biodiversity & Conservation            | 3      | 3     | 3             | 3     |
| BSBT 2327    | Biostatistics                          | 3      | 3     | 3             | 3     |
| <b>TOTAL</b> |                                        | 16     | 16    | 16            | 16    |

**YEAR 3****Study Level: Semester 5****Academic****Session: Semester 1, 2028/2029**

| Course Code  | Course Name                                       | LOCAL     |           | International |           |
|--------------|---------------------------------------------------|-----------|-----------|---------------|-----------|
|              |                                                   | Muslim    | Other     | Muslim        | Other     |
| BSBT 3212    | Research Methodology and Scientific Communication | 2         | 2         | 2             | 2         |
| BSBT 3312    | Protein Biotechnology                             | 3         | 3         | 3             | 3         |
| BSBT 3313    | Instrumentation in Biotechnology Research         | 3         | 3         | 3             | 3         |
| BSBT 3314    | Bioprocess Design and Optimisation                | 3         | 3         | 3             | 3         |
| BSBT 3316    | Immunology and Immunotechnology                   | 3         | 3         | 3             | 3         |
| BKOS 1303    | Philosophy of Science                             | 3         | 3         | 3             | 3         |
| <b>TOTAL</b> |                                                   | <b>17</b> | <b>17</b> | <b>17</b>     | <b>17</b> |

**Study Level: Semester 6****Academic****Session: Semester 2, 2028/2029**

| Course Code                        | Course Name                                          | LOCAL     |           | International |           |
|------------------------------------|------------------------------------------------------|-----------|-----------|---------------|-----------|
|                                    |                                                      | Muslim    | Other     | Muslim        | Other     |
| BSBT 3222                          | Final Year Project I                                 | 2         | 2         | 2             | 2         |
| BSBT 3221                          | Concept of Halal and Haram in Food and Biotechnology | 2         | 2         | 2             | 2         |
| BKOS 1202                          | Islam and Scientific Knowledge                       | 2         | 2         | 2             | 2         |
| XXXX *                             | FREE ELECTIVE                                        | 3         | 3         | 3             | 3         |
| <b>FOOD BIOTECHNOLOGY</b>          |                                                      |           |           |               |           |
| BSBT 3323                          | Food Chemistry                                       | 3         | 3         | 3             | 3         |
| BSBT 3324                          | Food Analysis and Toxicological Methods              | 3         | 3         | 3             | 3         |
| <b>ENVIRONMENTAL BIOTECHNOLOGY</b> |                                                      |           |           |               |           |
| BSBT 3325                          | Applied Environmental Biotechnology                  | 3         | 3         | 3             | 3         |
| BSBT 3326                          | Bioremediation and Environmental Monitoring          | 3         | 3         | 3             | 3         |
| <b>MEDICAL BIOTECHNOLOGY</b>       |                                                      |           |           |               |           |
| BSBT 3327                          | Experimental Model in Medical Biotechnology          | 3         | 3         | 3             | 3         |
| BSBT 3328                          | Computer Aided Drug Design                           | 3         | 3         | 3             | 3         |
| <b>TOTAL</b>                       |                                                      | <b>15</b> | <b>15</b> | <b>15</b>     | <b>15</b> |

Note\* The free elective is the courses from other program. See Annex 1.

**YEAR 4****Study Level: Semester 7****Academic****Session: Semester 1, 2029/2030**

|                                    |                                               | <b>LOCAL</b>  |              | <b>International</b> |              |
|------------------------------------|-----------------------------------------------|---------------|--------------|----------------------|--------------|
| <b>Course Code</b>                 | <b>Course Name</b>                            | <b>Muslim</b> | <b>Other</b> | <b>Muslim</b>        | <b>Other</b> |
| BSBT 4311                          | Bionanotechnology                             | 3             | 3            | 3                    | 3            |
| BSBT 4612                          | Final Year Project II                         | 6             | 6            | 6                    | 6            |
| <b>FOOD BIOTECHNOLOGY</b>          |                                               |               |              |                      |              |
| BSBT 4313                          | Food Process Engineering                      | 3             | 3            | 3                    | 3            |
| BSBT 4314                          | Advances in Food Biotechnology                | 3             | 3            | 3                    | 3            |
| <b>ENVIRONMENTAL BIOTECHNOLOGY</b> |                                               |               |              |                      |              |
| BSBT 4315                          | Environmental Regulation and Waste Management | 3             | 3            | 3                    | 3            |
| BSBT 4316                          | Environmental Health and Toxicology           | 3             | 3            | 3                    | 3            |
| <b>MEDICAL BIOTECHNOLOGY</b>       |                                               |               |              |                      |              |
| BSBT 4317                          | Human Diseases and Public Health              | 3             | 3            | 3                    | 3            |
| BSBT 4318                          | Trends and Advances in Medical Biotechnology  | 3             | 3            | 3                    | 3            |
| <b>TOTAL</b>                       |                                               | <b>15</b>     | <b>15</b>    | <b>15</b>            | <b>15</b>    |

**Study Level: Semester 8****Academic****Session: Semester 2, 2029/2030**

|                    |                    | <b>LOCAL</b>  |              | <b>International</b> |              |
|--------------------|--------------------|---------------|--------------|----------------------|--------------|
| <b>Course Code</b> | <b>Course Name</b> | <b>Muslim</b> | <b>Other</b> | <b>Muslim</b>        | <b>Other</b> |
| BSBT 4122          | Internship         | 12            | 12           | 12                   | 12           |
| <b>TOTAL</b>       |                    | <b>12</b>     | <b>12</b>    | <b>12</b>            | <b>12</b>    |

## Annex 1: List of free elective courses

| Offering department | Course Code | Course Name                                   | Credit Hour |
|---------------------|-------------|-----------------------------------------------|-------------|
| CTS                 | BSMS 1300   | Essential Mathematics                         | 3 CH        |
|                     | BSMS 1303   | Number Theory                                 | 3 CH        |
|                     | BSMS 2386   | Introduction to Financial Mathematics         | 3 CH        |
|                     | BSMS 2391   | Introduction to Operations Research           | 3 CH        |
| Physics             | BSPH 1303   | Modern Physics                                | 3 CH        |
|                     | BSPH 2301   | Thermodynamics                                | 3 CH        |
|                     | BSPH 3373   | Physics of Everyday Life                      | 3 CH        |
|                     | BSPH 3368   | Environmental Physics                         | 3 CH        |
|                     | BSPH 2321   | Introduction to Programming                   | 3 CH        |
|                     | BSPH 3369   | Astronomy & Astrophysics                      | 3 CH        |
| Chemistry           | BSCH 4313   | Quality Control and Assurance                 | 3 CH        |
|                     | BSCH 4316   | Cosmetic Ingredients and Formulation          | 3 CH        |
| Marine Science      | BMST 1311   | Introduction to Marine Science and Technology | 3 CH        |
|                     | BMST 1324   | Marine Instrumentation and System             | 3 CH        |
|                     | BMST 2334   | Introduction to GIS and Remote Sensing        | 3 CH        |
|                     | BMST 2341   | Tropical Marine Ecosystem                     | 3 CH        |
|                     | BMST 3352   | Ocean Law and Policy                          | 3 CH        |