香港城市大學
City University of Hong Kong

CIR-MAJ

Curriculum Information Record for a Major/Degree

Department of Biomedical Sciences
Effective from Semester A 2023-24
For Students Admitted in Semester A 2020/21 / Changed to the Major with Catalogue Term Semester A 2021/22

The information provided on this form is the official record of the major/degree. It will be used for City University's database, various City University publications (including websites) and documentation for students and others as required.

In specifying the curriculum for a major/degree, "catalogue term" is used to determine the set of curriculum requirements that a student is following. By mapping the student record and the version of curriculum rules applicable, the graduation requirements of individual students will be evaluated accordingly. The catalogue terms of curriculum requirements that students will follow are summarized below (BUS/04/A5R):

Requirements	Catalogue Term
a) Common Requirements • Gateway Education • University Language • College/School requirement	The same as student's admission term
b) Major	
• For normative 4-year degree students who will join the majors allocation exercise	Effective term of the declared major
• For advanced standing students and 4-year degree students who already have a major at the time of admission	The same as student's admission term
• For students who have changed major	Effective term of the changed major
c) Stream	Follow the effective term of the associated major

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Part I Major/Degree Overview

Major (in English) : Biological Sciences
(in Chinese) : 生物科學

Degree (in English) : Bachelor of Science
(in Chinese) : 理學士

Award Title[#] (in English) : Bachelor of Science in Biological Sciences
(in Chinese) : 理學士(生物科學)

 # Please make reference to the "Guidelines on Award Titles" approved by the Senate when proposing new award titles or changes to existing award titles (Senate/86/A5R).

1. Normal and Maximum Period of Study

	Normative 4-year Degree	**Advanced Standing I** (Note 1)	**Advanced Standing II (Senior-year Entry)** (Note 2)
Normal period of study	4 years	3 years	2 years
Maximum period of study	8 years	6 years	5 years

Note 1: For students with recognised Advanced Level Examination or equivalent qualifications.
Note 2: For Associate Degree/Higher Diploma graduates admitted to the senior year.

2. Minimum Number of Credit Units Required for the Award and Maximum Number of Credit Units Permitted

Degree Requirements	Normative 4-year Degree	Advanced Standing I	Advanced Standing II (Senior-year Entry)
Gateway Education requirement *	30 credit units	21 credit units	12 credit units
College/School requirement *	Not Applicable	Not Applicable	Not Applicable
Major requirement	72 credit units (Core: 62 Elective: 10)	69 credit units (Core: 62 Elective: 7)	46 credit units (Core: 45 Elective: 1)
Free electives / Minor (if applicable)	18 credit units	0 credit units	2 credit units
Minimum number of credit units required for the award	**120 credit units**	**90 credit units**	**60 credit units**
Maximum number of credit units permitted	**144 credit units**	**114 credit units**	**84 credit units**

** For details, please refer to the Curriculum Information Record for Common Requirements.*

3. Aims of Major

The Biological Sciences major aims to nurture students to embark on scientific research, educational, professional or technical career after graduation. We provide a rigorous, broad-spectrum curriculum combined with specialization in major fields of biology such as cancer biology, nanobiotechnology, regenerative medicine, microbiology and neurobiology. The programme presents an in-depth study of biomedical and life sciences, with courses ranging from bioinformatics to biochemistry, genetics, cellular & molecular biology and immunology. With the two tailor-made practical courses as well as opportunities in research rotations and projects, students will gain a thorough understanding of how science is done with advanced technologies including omics & genome editing and state-of-the-art equipment in our research laboratories. It also nurtures students who are interested in pursuing postgraduate research training and undertaking a broad range of science-based careers.

4. Intended Learning Outcomes of Major (MILOs)

(Please state what the student is expected to be able to do on completion of the major according to a given standard of performance.)

Upon successful completion of this major, students should be able to:

No.	*MILOs*	*Discovery-enriched curriculum related learning outcomes (please tick where appropriate)*		
		A1	*A2*	*A3*
1.	Explain biological phenomena from the molecular to cellular basis of life.	√	√	
2.	Explain biological phenomena based on lectures and observations in the laboratory.	√	√	
3.	Design experiment and evaluate experimental data to test hypotheses, and to create innovative and practical solutions.	√	√	√
4.	Demonstrate good time management and problem- solving skills, and effectively communicate scientific ideas in both written and oral formats.	√	√	
5.	Demonstrate the ability to read, understand, and critically review scientific information	√	√	
6.	Accomplish laboratory-based or problem-based tasks independently.		√	√
7.	Apply the broad-based foundation and latest advances in the knowledge of biological sciences to real world problems.	√	√	
8.	Develop strategies for acquisition, application and synthesis of knowledge in the biological sciences.	√	√	
9.	Apply biological knowledge to address bioethical issues and to understand the role of science in society and the ethical conduct of science.	√	√	

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 accomplishments of discovery/innovation/creativity through producing/constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Part II Major Requirement

(The catalogue term of the major requirement that students will follow will be the effective term of the declared/allocated major.

For normative 4-year degree students who will join the majors allocation exercise, the catalogue term of major requirement will be one year after admission.

For advanced standing students and 4-year degree students who already have a major at the time of admission, the catalogue term of major requirement will be the same as their admission term.)

1. Core Courses (62 credit units)

Course Code	Course Title	Level	Credit Units	Remarks
BMS1901	Calculus For Life Sciences	B1	3	Waived for students admitted with Advanced Standing II
CHEM2013	Microbiology	B2	3	Waived for students admitted withAdvanced Standing II
BMS2202	Diversity of Life and Evolution	B2	3	Waived for students admitted with Advanced Standing II
BMS2204	Diversity of Life and Microbiology Laboratory	B2	2	Waived for students admitted with Advanced Standing II
CHEM2071	Biological Chemistry	B2	4	Waived for students admitted with Advanced Standing II
BMS2203	Laboratory Course for Cell Biology and Biochemistry	B2	2	Waived for students admitted with Advanced Standing II This course is equivalent to BMS2205 Essential Techniques in Biomedical Sciences.
BMS2901	Introductory Biostatistics and Data Analysis	B2	3	
BMS2004	Biochemistry	B2	3	
BMS2201	Molecular Biology of the Cell	B2	3	This course is equivalent to BMS2206 Cell Biology.
BMS3203	Genetics	B3	4	
CHEM3017	Molecular Biology	B3	4	This course is equivalent to BMS3204 Molecular Biology.
CHEM3068	General Ecology	B3	4	
BMS3202	Animal Physiology	B3	4	
BMS3301	Bioinformatics	B3	3	
BMS4008	Clinical Immunology	B4	3	
BMS4206	Final Year Project in Biomedical Research	B4	8	
BMS4301	Cancer Biology	B4	3	
BMS4303	Neuroscience	B4	3	

2. Electives

Normative 4-year Degree: 10 credit units

Advanced Standing I: 7 credit units

Advanced Standing II: 1 credit unit

Course Code	Course Title	Level	Credit Units	Remarks
BMS1701A	Biomedical Research – Rotation Project I (Theme A)	B1	1	
BMS1701B	Biomedical Research – Rotation Project I (Theme B)	B1	1	
BMS1701C	Biomedical Research – Rotation Project I (Theme C)	B1	1	
BMS2002	Pathophysiology	B2	3	
BMS2003B	Clinical Chemistry	B2	2	
BMS2005	Human Physiology	B2	3	
BMS2007	Human Anatomy	B2	3	
BMS2008B	Hematology I	B2	2	
BMS2301A	Biomedical Research – Rotation Project II (Theme A)	B2	1	
BMS2301B	Biomedical Research – Rotation Project II (Theme B)	B2	1	
BMS2301C	Biomedical Research – Rotation Project II (Theme C)	B2	1	
BMS3002B	Cellular Pathology	B3	2	
BMS3003B	Advanced Clinical Chemistry	B3	2	
BMS3006B	Transfusion Science and Technology	B3	2	
BMS3007	Ethics and Practice in Medical Laboratory	B3	3	
BMS3011B	Hematology II	B3	2	
BMS3101	Cell Transport and Signalling	B3	3	
BMS4001	Medical Informatics and Laboratory Management	B4	3	
BMS4003B	Clinical Biochemistry and Molecular Diagnostics	B4	2	
BMS4004B	Advanced Celluar Pathology	B4	2	
BMS4005B	Medical Virology	B4	2	
BMS4007	Pharmacology and Toxicology	B4	3	
BMS4102	Technology for Regenerative Medicine	B4	3	
CHEM4078	Aquatic Ecology	B4	4	

Part III Admission Requirements for Entry to the Major, if any

(Admission requirements here refers to specific requirements for students already admitted to the College/School/Department with an undeclared major. Academic units can state the prerequisites required for admission to the major.)

Nil

Part IV Accreditation by Professional / Statutory Bodies

Nil

Part V Additional Information

Nil

Part VI Curriculum Map

(The curriculum map shows the mapping between courses and the MILOs. It should cover all courses designed specifically for the major.)

Course			MILOs									DEC		
Code	**Title**	**Credi**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**A**	**A**	**A**
Core Courses														
BMS1901	Calculus For Life Sciences	3				✓	✓	✓			✓	✓	✓	✓
CHEM2013	Microbiology	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BMS2202	Diversity of Life and Evolution	3	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
BMS2204	Diversity of Life and Microbiology Laboratory	2	✓	✓	✓			✓	✓	✓	✓		✓	
CHEM2071	Biological Chemistry	4	✓		✓			✓	✓	✓		✓	✓	
BMS2203	Laboratory Course for Cell Biology and Biochemistry	2	✓		✓	✓	✓	✓	✓	✓	✓		✓	
BMS2901	Introductory Biostatistics and Data Analysis	3				✓	✓	✓			✓	✓	✓	✓
BMS2004	Biochemistry	3	✓		✓	✓		✓	✓	✓	✓	✓	✓	
BMS2201	Molecular Biology of the Cell	3	✓		✓	✓		✓	✓	✓		✓	✓	
BMS3203	Genetics	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CHEM3017	Molecular Biology	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CHEM3068	General Ecology	4	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
BMS3202	Animal Physiology	4	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
BMS3301	Bioinformatics	3				✓	✓	✓	✓	✓	✓	✓	✓	
BMS4008	Clinical Immunology	3	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓
BMS4206	Final Year Project in Biomedical Research	8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BMS4301	Cancer Biology	3	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	
BMS4303	Neuroscience	3	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	
Electives														
BMS1701A	Biomedical Research – Rotation Project I (Theme A)	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BMS1701B	Biomedical Research – Rotation Project I (Theme B)	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BMS1701C	Biomedical Research – Rotation Project I (Theme C)	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BMS2002	Pathophysiology	3		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
BMS2003B	Clinical Chemistry	2		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
BMS2007	Human Anatomy	3	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓
BMS2005	Human Physiology	3		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
BMS2008B	Hematology I	2	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
BMS2301A	Biomedical Research – Rotation Project II (Theme A)	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BMS2301B	Biomedical Research – Rotation Project II (Theme B)	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BMS2301C	Biomedical Research – Rotation Project II (Theme C)	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

BMS3002B	Cellular Pathology	2	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
BMS3003B	Advanced Clinical Chemistry	2		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
BMS3006B	Transfusion Science and Technology	2		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
BMS3007	Ethics and Practice in Medical Laboratory	3			✓	✓	✓	✓	✓		✓	✓	✓	
BMS3011B	Hematology II	2	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
BMS3101	Cell Transport and Signalling	3	✓			✓	✓		✓		✓	✓	✓	✓
BMS4001	Medical Informatics and Laboratory Management	3				✓	✓		✓		✓	✓	✓	✓
BMS4003B	Clinical Biochemistry and Molecular Diagnostics	2	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓
BMS4004B	Advanced Celluar Pathology	2	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓
BMS4005B	Medical Virology	2		✓		✓	✓		✓	✓	✓	✓	✓	✓
BMS4007	Pharmacology and Toxicology	3		✓		✓	✓		✓	✓	✓	✓	✓	✓
BMS4102	Technology for Regenerative Medicine	3	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
CHEM4078	Aquatic Ecology	4	✓	✓	✓		✓	✓	✓	✓		✓	✓	

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.

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Demonstrate accomplishments of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.