

Bachelor of Science**• Bioinformatics**

Year I		Credits
<i>Compulsory Major</i>		
CISC1001	Programming Science	3
HSCI1002	Introduction to Biological Sciences	3
HSCI1003	General and Clinical Biochemistry	3
<i>Languages and Skills*</i>		
CISC1000	Information Technology Fundamentals and Practices	3
EELC1001	Interactive English I	3
EELC1002	Interactive English II	3
<i>Community and Peer Education</i>		
CPED1000	Residential College Experiential Learning	1
CPED1001	Physical Education I	0.5
CPED1002	Physical Education II	0.5
<i>General Education</i>		
GEGA1000	Macao and Chinese Civilization (Area of Global Awareness)	3
GELH1000	Chinese Language and Culture (Area of Literature & Humanities)	3
GESB1000	Ethics, Values, Law and Society (Area of Society & Behaviour)	3
GEST1004	Quantitative Reasoning for Science and Technology (Area of Science & Technology)	3
Total Credits:		32

Year II	Credits
<i>Compulsory Major</i>	
CISC1002 Discrete Structures	3
CISC2003 Object Oriented Programming and Data Structures	3
CISC2006 Algorithm Design and Analysis	3
HSCI2000 Cell and Molecular Biology	3
HSCI2004 Genetics and Epigenetics	3
MATH1001 Linear Algebra I	3
<i>Required Elective</i>	
1 Required Elective Course	3
<i>Languages and Skills*</i>	
EELC1003 Academic English	3
1 Languages and Skill Course selected from the following:	3
CHLL1000 University Chinese or	
PORT1000 Portuguese Language I - Introductory Portuguese	
<i>Community and Peer Education</i>	
CPED1003 Communication Skills and Leadership	1
<i>General Education</i>	
1 course from area of Global Awareness	3
<i>Free Elective</i>	3
Total Credits:	34

Year III	Credits
<i>Compulsory Major</i>	
CISC3000 Introduction to Database Systems	3
HSCI3003 Biostatistics and Experimental Design	3
HSCI3004 Genomics and Bioinformatics	3
HSCI3006 Advanced Bioinformatics	3
<i>Required Elective</i>	
3 Required Elective Courses	9
<i>General Education</i>	
1 course from area of Society and Behaviour	3
1 course from area of Science and Technology	3
<i>Free Elective</i>	3
Total Credits:	30

Year IV	Credits
<i>Compulsory Major</i>	
HSCI4000 Graduation Project I	3
HSCI4005 Graduation Project II	3
<i>Required Elective</i>	
3 Required Elective Courses	9
<i>General Education</i>	
1 course from area of Literature and Humanities	3
<i>Free Elective</i>	6
Total Credits:	24

List of Required Elective Courses:

CISC1004	Introduction to Computer Science	3
CISC1006	Probability and Statistics	3
CISC2002	Numerical Methods and Computation	3
CISC3003	Web Programming	3
CISC3005	Advanced Database Systems	3
CISC3011	Digital Image Processing	3
CISC3012	Artificial Intelligence	3
CISC3014	Information Retrieval and Web Search	3
CISC3015	Data and Information Visualization	3
CISC3018	Cloud Computing and Big Data Systems	3
CISC3023	Machine Learning	3
CISC3024	Pattern Recognition	3
HSCI3005	Genetics, Genomic and Bioinformatics Lab	1.5
HSCI4001	Cancer Biology and Therapy	3
HSCI4002	Stem Cell Biology and Regenerative Medicine	3
HSCI4006	Public Health	3
HSCI4007	Translational Medicine	3

*Students who test out of some or all of the Languages and Skills course(s) are required to make up the credits by taking additional Free Elective(s). Please visit the Registry's webpage (<https://reg.um.edu.mo/current-students/curriculum-model/ug-curriculum-model/languages-and-skills/>) for more details about the test out criteria.