BS Molecular & Cellular (Fall 2018 & Later)

Minimum 120 credits required for Bachelor's degree

Foundational Core (30-32 Credits)		**Grade**
FYXX 125[1]	First Year Seminar	
CTL 125	Critical Thinking	
MA 140	Precalculus	
Choose 1 course from each area *		
[2]Science		
Literature		
History		
Arts/Design/Comm		
Philosophy		
Theology/Relig		
Social Science		

Human Journey Seminars: Great Books in CIT (6 Credits)		
CIT 201	Human Journey CIT I	
CIT 202	Human Journey CIT II	

Liberal Arts Explorations (LAE) (9 Credits)

Humanistic Inquiry (3 Credits)	
Social and Global Awareness (3 Credits)	
Scientific Literacy (3 Credits)	

* See list of courses. Courses must be in the same theme.

[1](Requires Grade C or higher)

[2]Science/Natural Science courses includes approved Math and Computer Science courses. Students are required to take at least one course in Biology, Chemistry, or Physics in the Foundational or Liberal Arts Exploraton Core.

CS and MA courses may be used as a Science/Natural Science in either the Foundational Core **or** as a theme requirement in the TI LAE Core but not in both categories.

Note: MA 006 and ESL courses **will not** count towards the 120 credit graduation requirement.

Approved Study Abroad courses may be used to satisfy requirements for the foundational core or a Liberal Arts Exploration.

Required Curriculum for Degree in Major

39 credits required

Biology Core		**Grade**
BI 111	Concepts in Biology I	
BI 112	Concepts in Biology II	
BI 113	Concepts in Biology I Laboratory	
BI 114	Concepts in Biology II Laboratory	
BI 201	Genetics & Evolution: Org. to Pop.	
BI 202	Ecology: Pop. to Eco.	
BI 203	Genetics & Evolution: Org. to Pop. Laboratory	
BI 204	Ecology: Pop. to Eco. Laboratory	
BI 399	Senior Seminar	
Molecular and Cellular Core		
BI 355 or BI 320	Molecular Biology or Applied Molecular Genetics	
BI 311	Cell Biology	
BI 390 or BI 360	Supervised Research (3 credits) or Internship (3 credits)	
Minimum 3 courses (2XX or 3XX, 1 with lab) at least two of which are in the Molecular/Cellular areas of Biology (see catalog for list)		
200/300		
200/300		
200/300+Lab		

Required Supporting Courses		**Grade**
CH 151	General Chemistry I	
CH 152	General Chemistry II	
CH 153	General Chemistry Laboratory I	
CH 154	General Chemistry Laboratory II	
CH 221/223	Organic Chemistry II with Lab	
CH 222/224	Organic Chemistry I with Lab	
CH341/343	Biochemistry I with lab	
MA ___	Statistics (131/132/133)	
PY ___	Physics 100 level with Lab	
MA ___	PreCalc, Calculus I	

Free Electives (to total 120 credits)		**Grade**

SACRED HEART UNIVERSITY
COLLEGE OF ARTS & SCIENCES
BS Molecular & Cellular Biology (Fall 2018 & Later)

The Molecular and Cellular Biology concentration in the Biology major combines a rigorous grounding in the foundational principles of biological science at all scales of organization from molecules to ecosystems with significant coursework in cell/molecular biology. The program is ideal for students preparing for graduate or professional training in the biomedical sciences (e.g., college/university-level education and research, doctors, dentists, veterinarians, technology transfer, technical writing) or employment in the pharmaceutical and biotechnology industries (e.g., staff scientists in research and development, quality control, management). A capable faculty and small class size foster student-faculty relationships which benefit the intellectual development of students. As part of this concentration, students are given the opportunity to explore research problems with faculty or participate in internship programs with local

Students majoring in Molecular and Cellular Biology concentration are required to complete 39 credits in Biology: 18 credits in the Biology core, 11 credits in the Molecular and Cellular core and 10 credits in cellular and molecular electives. Twenty-seven credits are required in the supporting areas of Chemistry, Mathematics, and Physics.

SUGGESTED FOUR YEAR SEQUENCE OF STUDY:

YEAR 1	SEMESTER I (18 cr)	YEAR 1	SEMESTER 2 (14cr)
FYXX 125 or	First Year Seminar	FYXX 125 or	First Year Seminar or
CTL 125	Critical Thinking	CTL 125	Critical Thinking
BI 111/BI 113	Concepts in Biologyl with Laboratory	BI112/BI114	Concepts in Biology II with Laboratory
CH 151/153	General Chemistry I with Laboratory	CH 152/154	General Chemistry II with Laboratory
MA140/151	PreCalculus, Calculus	MA __	Statistics (131/132/133)
	Elective (Foundational Core)		

YEAR 2	SEMESTER 3 (17 cr)	YEAR 2	SEMESTER 4 (17 cr)
BI202/204	Ecology: Pop. to Eco. with Laboratory	BI201/203	Genetics & Evolution: Org. to Pop. with Laboratory
CH 221/223	Organic Chemistry I with Lab	CH 222/224	Organic Chemistry II with Lab
CIT 201	Human Journey CIT I	CIT 202	Human Journey CIT II
	Elective (Foundational Core)		Elective (Foundational Core)
	Elective (Foundational Core)		Elective (Foundational Core)

YEAR 3	SEMESTER 5 (14 cr)	YEAR 3	SEMESTER 6 (14 cr)
BI 355	Molecular Biology	BI 311/313	Cell Biology with Lab
CH 341/343	Biochemistry I with Lab		LAE Elective
	LAE Elective		LAE Elective
	Elective (Foundational Core)		Elective (Free)
		BI 398	Senior Seminar Prep

YEAR 4	SEMESTER 7 (16 cr)	YEAR 4	SEMESTER 8 (14 cr)
BI ___	Elective (Biology)	BI ___	Elective (Biology)
BI 390	Supervised Research	BI ___	Elective (Biology)
PY 1XX	Physics With Lab	BI 399	Senior Seminar
	Elective (Free)		Elective (Free)
	Elective (Free)		Elective (Free)

Note: Foundational Core should be completed by the end of the Junior Year
Note: LAE Core should be completed by the end of the 1st semester of the Senior Year.
Note: Students must average 15 or more credits/semester to graduate on an 8 semester schedule.