

Biology: Pre-Optometry Concentration

Bismarck State College (AS) and University of Mary

Freshman:	Fall		UMary Equivalent
BIOL 150/150L	General Biology 1 and Lab (Math/Sci/Tech)	3/1	BIO 103/L
CHEM 121/121L	General Chemistry I/Lab (Math/Sci/Tech)	4/1	CHE 111/L
POLS 115	American Government (Soc Sci)	3	POL 101
ENGL 110	College Comp I (Comm)	3	ENG 111
BSC	Enrichment Elective	2	Elective
	Fall Credits	17	
	Spring		
ENGL 120	College Comp II (Comm)	3	ENG 121
ANT 170 or SOC 110 or SOC 115 or HIST 211 or HIST 212	Intro. to Cultural Anthropology or Intro. to Sociology or Social Problems or World Civ. I or World Civ. II (Soc Sci or Arts & Humanities; Diversity)	3	Core Elective
COMM 110	Fundamentals of Public Speaking (Comm)	3	COM 110
BIOL 151/151L	General Biology II/Lab (Math/Sci/Tech)	3/1	BIO 106/L
CHEM 122/122L	General Chemistry II/Lab (Math/Sci/Tech)	4/1	CHE 112/L
	Spring Credits	18	
	Total Freshman Credits	35	
Sophomore:	Fall		
PHIL 210	Ethics (Arts & Humanities)	3	PHI 208
BIO 220/220L	Anatomy and Physiology I/Lab (Math/Sci/Tech)	3/1	BIO 207/L
CHEM 241/241L	Organic Chemistry I/Lab	4/1	CHE 217/L
Elective	Elective Course	3	Elective
	Fall Credits	15	
	Spring		
Elective	Elective Course (Soc Sci if short of 6 credits)	3	Elective
BIO 221/221L	Anatomy and Physiology II/Lab	3/1	BIO 208/L
RELS	RELS course (Arts & Humanities)	3	THE Elective
MAT 165	Calculus 1 (Math/Sci/Tech)	3	MAT 209
	Spring Credits	13	
	Total Sophomore Credits	28	
	Total BSC Credits	63	(62→UMary)
Junior:	Fall		
HUM 322	Transfer Seminar	1	
BIO 311	Genetics	4	
PHY 203	Physics	4	
BIO 309 or 314	Microbiology or Histology	4	
PSY 201	General Psychology	3	
	Fall Credits	16	
	Spring		
PHY 304	Intermediate Physics	4	
CHE 318	Organic Chemistry II	4	
BIO 421 or BIO 318	Advanced Physiology or Immunology	4	
MAT Elective	MAT 204, 206, or 210	4	
	Spring Credits	16	
	Total Junior Credits	32	

Senior:	Fall		
BIO 309 or 314	Microbiology or Histology	4	
BIO 4XX	BIO Elective Environmental area	4	
Elective	Elective	3	
Elective	Elective	3	
Elective	Elective	3	
	Fall Credits	17	
	Spring		
BIO 450	Evolution and the Integration of Knowledge	3	
CHE 310	Biochemistry	4	
BIO 421 or BIO 318	Advanced Physiology or Immunology	4	
BIO 354	Botany	4	
HUM 499	Senior Competences Assessment	0	
	Spring Credits	15	
	Total Senior Credits	32	
	Total UMary Credits	64	
	Total Bachelor's Degree Credits	125	

Specific admission requirements vary by optometry school. For this reason, it is essential that students contact the schools they are interested in attending early in their academic programs, and periodically thereafter, to be sure they include all required courses in their programs of study.

Note: Because some biology courses (e.g. Microbiology) are offered every other year, it is important for students to consider the rotation of courses in planning their programs of study to ensure they take these courses in the appropriate year.

Biology Electives: Students must take five biology electives selected from three major areas of study. Of the five, at least one course must be taken from each of the three areas. These electives are in addition to the required biology courses.

Organismal & Systematics Area

BIO 207	Human Anatomy and Physiology I	(Bio 207 & 208 together count as 1 elective)
BIO 208	Human Anatomy and Physiology II	
BIO 312	Parasitology	
BIO 330	Zoology	
BIO 421	Advanced Physiology	
BIO 339	Mammalogy	
BIO 333	Ornithology	

Cell and Molecular Area

BIO 309	Microbiology
BIO 310	Cell and Molecular Biology
BIO 314	Histology
BIO 318	Immunology and Serology
BIO 319 and 320	Hematology and Hematology Lab
BIO 417	Developmental Biology

Environmental Area

BIO 326	Environmental Biology
BIO 415	Conservation Biology
BIO 422	Principles of Ecology
BIO 423	Animal Behavior
BIO 433	Range Management
BIO 432	Wildlife Management