

BIOLOGY MAJOR FOR SECONDARY TEACHING

Updated April 2011

The major in Biology for Secondary teachers consists of a minimum of 30 credits. Candidates for certification in this major must pass the Michigan Test for Teacher Certification (MTTC) in Biology (Test #17). You must demonstrate your knowledge in the following categories:

Subarea	Approximate % of Questions on Test
1. Foundations of Scientific Inquiry	19%
2. Cellular Function	15%
3. Heredity and Evolutionary Changes	22%
4. Organization of Living Things	22%
5. Ecological Systems	22%

You may access a study guide at the MTTC testing site; the courses below have been selected so that you will be well prepared for the test.

The following chart is intended to provide you a guide for scheduling your semesters and for keeping track of your grade point average.

CORE COURSES IN BIOLOGY (12 credits)

SUBJECT/ COURSE	TITLE	CREDIT HOURS	SEMESTER	GRADE
BIO 240	Cells and Genetics	4		
BIO 260	Organismal Biology	4		
BIO 280	Ecology and Evolutionary Biology	4		

ADVANCED COURSES IN BIOLOGY (18 additional credits selected from the following advanced courses in Biology. **One of these courses MUST be from the list of flagged *Biodiversity courses.**)

SUBJECT/ COURSE	TITLE	CREDIT HOURS	SEMESTER	GRADE
BIO 221	Human Physiology – Strongly Recommended	4		
BIO 301	General Microbiology*	4		
BIO 315	Topics in Ecology	4		
BIO 320	Plant Physiology	4		
BIO 332	Comparative Anatomy of Vertebrates*	4		
BIO 340	Topics in Plant Biology	4		
BIO 343	Vascular Plant Systematics *	4		
BIO 348	Topics in Cell Biology-Lecture	3		
BIO 349	Topics in Cell Biology-Lab	1		
BIO 355	Embryology	4		
BIO 356	Advanced Genetics	3		
BIO 357	Advanced Genetics lab	1		
BIO 366	Molecular Biology	4		
BIO 370	Animal Behavior	4		
BIO 374	Biology of Insects*	4		
BIO 380	Field Studies in Biology*	1-4		
BIO 390	Independent Study of Biology	1-3		
BIO 421	Evolutionary Biology	4		
BIO 422	Invertebrate Zoology*	4		
BIO 432	Vertebrate Zoology*	4		
BIO 442	Topics in Physiology	4		
BIO 490	Independent Research	2		
BIO 495	Advanced Topics in Biology	1-4		

Required Cognate Support, not totaled in major credits (11-12 credits)

SUBJECT/ COURSE	TITLE	CREDIT HOURS	SEMESTER	GRADE
CHEM 111	General Chemistry I	3		
CHEM 113	Laboratory of General Chemistry I	1		
CHEM 114	Laboratory of General Chemistry II	1		
CHEM 121	General Chemistry II	3		
One semester of Mathematics (4 credits)				
MATH ____		4		

A SCIENCE METHODS COURSE - REQUIRED (3 credits)

(The Science methods course is considered pedagogy and will be counted with your education courses for certification.)

SUBJECT/ COURSE	TITLE	CREDIT HOURS	SEMESTER	GRADE
EDUC 331	Teaching of Science in the Secondary School (offered Fall Semester only)	2		
EDUC 332	Teaching of Science in the Secondary School Field Placement (offered Fall Semester only)	1		

This MUST be completed prior to the student teaching semester!