

# Maricopa Community Colleges: Advising Guide

## Biotechnology (Biology) 2009-2010 Catalog Year

### Associate in Science to Bachelor in Science (Biotechnology)

The Biotechnology advising guide is designed for students who plan to transfer to baccalaureate granting colleges and universities. In general, the components of the advising guide will meet requirements for the Biology major, at Northern Arizona University (NAU), a within a Bachelor's of Science (B.S.) degree. Additionally, students will be able complete NAU's undergraduate Certificate in Biotechnology.

The course selection is intended to prepare students to meet university admission requirements, but does not in itself guarantee admission to a university or to programs with pre-professional or selective admissions processes.

The courses listed on this advising guide will satisfy the requirements for a MCCCDC AGEC-S and Associate in Science (A.S.) degree. In addition, all MCCCDC general graduation requirements and academic policies within the catalog apply to this advising guide and 60-64 credits (numbered 100 and above) are required and must be completed with a grade of "C" or higher.

Students are responsible for completing specific program requirements for the major and institution to which they will transfer and should work closely with an advisor on course selection. Students should also work with their NAU Biology Advisor to ensure appropriate degree progress is noted for their completed course work.

Arizona General Education Curriculum (AGEC-S)		38-42 credits		
Area	Course Subject/Number	Course Title	Credit Hours	Notes
	<i>First Year Composition</i> ENG 101/102 [FYC] OR ENG 107/108 [FYC]	First Year Composition	6	
	<i>Literacy &amp; Critical Inquiry</i> Select a course that satisfies [L] and [SB] OR Select a course that satisfies [L] and [HU] requirements simultaneously		0-3	The following courses are recommended: CRE101 (Critical Reading) <u>or</u> COM225 (Public Speaking).
	<i>Mathematical Studies</i> MAT220 OR MAT221 [MA]	Calculus w/Analytic Geometry I	4-5	Or students may select any course for which MAT220 or MAT221 is a pre-requisite.
	<i>Natural Sciences</i> CHM 151/LL [SQ] AND CHM 152/LL [SQ]	General Chemistry I/ Laboratory AND General Chemistry II/Lab	8	
	<i>Social &amp; Behavioral Sciences</i> Select a course that satisfies [L] and [SB] AND Select a course that satisfies [C], [H], or [G] and [SB] requirements simultaneously		6	In order to fulfill additional degree requirements simultaneously, students are encouraged to select: COM100, 110, <u>or</u> 230.
	<i>Humanities &amp; Fine Arts</i> Select a course that satisfies [L] and [HU] AND Select a course that satisfies [C], [H], or [G] and [HU] requirements simultaneously		6	Students are encouraged to select course work from more than one discipline.
	<i>Subject Options</i> BIO 181 [SQ]	General Biology (Majors) I	4	
	BIO 220	Biology of Microorganisms	4	
Arizona General Education Curriculum (AGEC-S)		[...continued]		
	<i>Awareness</i> Cultural Diversity in the U.S. [C] AND Global Awareness [G] OR Historical Awareness [H]		0	It is not necessary for students to complete additional credits to complete the Awareness areas because courses can satisfy a Core Area (e.g., SB or HU) and one or more awareness areas simultaneously. Therefore, no additional semester credits are required to satisfy the Awareness areas.

MCCCD Additional Requirements			0-6 credits
Students must satisfy Oral Communication and Critical Reading areas. It is not necessary for students to exceed the 38 credits to satisfy the MCCCD Additional Requirements.			
Area Course Subject/Number	Course Title	Credit Hours	Notes
<i>Oral Communication</i> COM 100 [SB], COM 110 [SB], COM 225 [L] <b>OR</b> COM 230 [SB]		0-3	If students select a communication course that satisfies both the Oral Communication area and an area within the Core, then the Oral Communication requirement has been satisfied and additional electives may be taken.
<i>Critical Reading</i> CRE101 OR Equivalent as indicated by assessment	Critical and Evaluative Reading I (Title change effective spring 2010 is: <b>College Critical Reading</b> )	0-3	If students demonstrate proficiency through assessment, the Critical Reading requirement has been satisfied and additional electives may be taken.

Lower Division Preparation for Biology Major - FOUNDATIONS			17 credits
Course Subject/Number	Course Title	Credit Hours	Notes
BIO 240	General Genetics	4	
BIO 244	General Genetics Laboratory	1	
CHM 260/LL	Fundamental Biochemistry / Laboratory	4	
CHM 235/LL	General Organic Chemistry I / Laboratory	4	
CHM 236/LL	General Organic Chemistry IIA /Laboratory	4	

Lower Division Preparation for Biology Major (with Biotechnology certificate) RESTRICTED ELECTIVES			15 credits
Course Subject/Number	Course Title	Credit Hours	Notes
BIO 212AA	Biotechnology I	5	These courses fulfill NAU course requirements for Cell and Molecular Biology (BIO 344), Molecular Techniques (BIO 349L), and Molecular Genetics (BIO 350).
BIO 212AB	Biotechnology II	5	
BIO 212AC	Biotechnology III	5	

### Course Equivalency Guide (CEG)

The Course Equivalency Guide (CEG) shows how courses transfer from Arizona public and tribal institutions to Arizona State University, Northern Arizona University and the University of Arizona. Be aware that the transferability of a course does not indicate how the course will apply to meet requirements for specific bachelor's degrees. Students must select courses for general electives that are acceptable as an equivalent course, departmental elective credit or general elective credit at all Arizona public universities according to the Course Equivalence Guide (CEG) in effect the term the course is taken: [https://az.transfer.org/cgi-bin/WebObjects/Admin\\_CEG](https://az.transfer.org/cgi-bin/WebObjects/Admin_CEG)