

1.) DATE: 2/26/2014	2.) COMMUNITY COLLEGE: Select college...
3.) COURSE PROPOSED: Prefix: BIO Number: 109 Title: NATURAL HISTORY OF THE SOUTHWEST Credits: 4	
CROSS LISTED WITH: Prefix: Number: ; Prefix: Number: ; Prefix: Number: ; Prefix: Number: ; Prefix: Number: ; Prefix: Number: ;	
4.) COMMUNITY COLLEGE INITIATOR: ASU Transfer Systems Development PHONE: 7-2424 FAX:	
ELIGIBILITY: Courses must have a current Course Equivalency Guide (CEG) evaluation. Courses evaluated as NT (non-transferable are not eligible for the General Studies Program.	
MANDATORY REVIEW: <input type="checkbox"/> The above specified course is undergoing Mandatory Review for the following Core or Awareness Area (only one area is permitted; if a course meets more than one Core or Awareness Area, please submit a separate Mandatory Review Cover Form for each Area). POLICY: The General Studies Council (GSC-T) Policies and Procedures requires the review of previously approved community college courses every five years, to verify that they continue to meet the requirements of Core or Awareness Areas already assigned to these courses. This review is also necessary as the General Studies program evolves.	
AREA(S) PROPOSED COURSE WILL SERVE: A course may be proposed for more than one core or awareness area. Although a course may satisfy a core area requirement and an awareness area requirement concurrently, a course may not be used to satisfy requirements in two core or awareness areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirements and the major program of study.	
5.) PLEASE SELECT EITHER A CORE AREA OR AN AWARENESS AREA: Core Areas: Natural Sciences (SG) Awareness Areas: Select awareness area...	
6.) On a separate sheet, please provide a description of how the course meets the specific criteria in the area for which the course is being proposed.	
7.) DOCUMENTATION REQUIRED <input checked="" type="checkbox"/> Course Description <input checked="" type="checkbox"/> Course Syllabus <input checked="" type="checkbox"/> Criteria Checklist for the area <input checked="" type="checkbox"/> Table of Contents from the textbook required and/or list of required readings/books <input checked="" type="checkbox"/> Description of how course meets criteria as stated in item 6.	
8.) THIS COURSE CURRENTLY TRANSFERS TO ASU AS: <input type="checkbox"/> DEC prefix <input checked="" type="checkbox"/> Elective Current General Studies designation(s): NONE Effective date: 2014 Fall Course Equivalency Guide Is this a multi-section course? <input type="checkbox"/> yes <input type="checkbox"/> no Is it governed by a common syllabus? <input type="checkbox"/> yes <input type="checkbox"/> no	
Chair/Director:	Chair/Director Signature:

AGSC Action: Date action taken: Approved Disapproved

Effective Date:

Arizona State University Criteria Checklist for

NATURAL SCIENCES [SQ/SG]

Rationale and Objectives

In a relatively short time in the history of civilized societies, humankind moved from what was essentially an agrarian population into an industrial age, which in recent years has been profoundly shaped by such scientific and technological advances as genetic engineering, the computer, and space exploration. Our history of irrepressible ingenuity makes a compelling case for a future that will be even more profoundly influenced by science and technology. It is imperative that we react expeditiously and effectively to the problems and the promise that these advances create. We must ensure that technological change is directed to the benefit of society and that it will promote human dignity and values. Success in achieving this goal will depend upon the insight and knowledge of political and public opinion leaders, and the scientific enlightenment of educated citizens. To a significant degree, the ability of these individuals to understand the nature of the issues and the alternative courses of action will be determined by the quality of science presented at the nation's institutions of higher learning.

The recommendation of at least one laboratory course that includes a substantial introduction to the fundamental behavior of matter and energy in physical or biological systems derives from a number of considerations. First, all physical and biological phenomena have at their roots the fundamental principles governing the behavior of matter and energy. These principles have been shown over a period of time to be a value in reliably predicting and rationalizing a broad range of phenomena. Unless the lines to these roots are established, our understanding of the broader range of the sciences, and other fields upon which these sciences impinge, will be impaired. Second, because these fundamental principles have been experimentally established beyond reasonable doubt, the essentials of the scientific method can be clearly and coherently revealed by their study. Third, the study of the behavior of matter and energy illustrates the usefulness of mathematics in precisely describing and rationalizing certain physical phenomena, and the expressiveness of mathematical equation.

10/1989

REV: 1/1991, 3/1991, 1/2000, 10/2008

Proposer: Please complete the following sections and attach appropriate documentation.

ASU--[SQ] CRITERIA			
I. - FOR ALL <i>QUANTITATIVE</i> [SQ] NATURAL SCIENCES CORE AREA COURSES, THE FOLLOWING ARE CRITICAL CRITERIA AND MUST BE MET:			
YES	NO		Identify Documentation Submitted
<input type="checkbox"/>	<input type="checkbox"/>	A. Course emphasizes the mastery of basic scientific principles and concepts.	
<input type="checkbox"/>	<input type="checkbox"/>	B. Addresses knowledge of scientific method.	
<input type="checkbox"/>	<input type="checkbox"/>	C. Includes coverage of the methods of scientific inquiry that characterize the particular discipline.	
<input type="checkbox"/>	<input type="checkbox"/>	D. Addresses potential for uncertainty in scientific inquiry.	
<input type="checkbox"/>	<input type="checkbox"/>	E. Illustrates the usefulness of mathematics in scientific description and reasoning.	
<input type="checkbox"/>	<input type="checkbox"/>	F. Includes weekly laboratory and/or field sessions that provide hands-on exposure to scientific phenomena and methodology in the discipline, and enhance the learning of course material.	
<input type="checkbox"/>	<input type="checkbox"/>	G. Students submit written reports of laboratory experiments for constructive evaluation by the instructor.	
<input type="checkbox"/>	<input type="checkbox"/>	H. Course is general or introductory in nature, ordinarily at lower-division level; not a course with great depth or specificity.	
II. - AT LEAST ONE OF THE FOLLOWING ADDITIONAL CRITERIA MUST BE MET WITHIN THE CONTEXT OF THE COURSE:			
<input type="checkbox"/>	<input type="checkbox"/>	A. Stresses understanding of the nature of basic scientific issues.	
<input type="checkbox"/>	<input type="checkbox"/>	B. Develops appreciation of the scope and reality of limitations in scientific capabilities.	
<input type="checkbox"/>	<input type="checkbox"/>	C. Discusses costs (time, human, financial) and risks of scientific inquiry.	
NOTE: CRITERIA FOR [SG] COURSES BEGIN ON PAGE 4.			

III. - [SQ] COURSES MUST ALSO MEET THESE ADDITIONAL CRITERIA:			
YES	NO		Identify Documentation Submitted
<input type="checkbox"/>	<input type="checkbox"/>	A. Provides a substantial, quantitative introduction to fundamental principles governing behavior of matter and energy, in physical or biological systems.	
		B. Includes a college-level treatment of some of the following topics (check all that apply below):	
<input type="checkbox"/>	<input type="checkbox"/>	a. Atomic and molecular structure	
<input type="checkbox"/>	<input type="checkbox"/>	b. Electrical processes	
<input type="checkbox"/>	<input type="checkbox"/>	c. Chemical processes	
<input type="checkbox"/>	<input type="checkbox"/>	d. Elementary thermodynamics	
<input type="checkbox"/>	<input type="checkbox"/>	e. Electromagnetics	
<input type="checkbox"/>	<input type="checkbox"/>	f. Dynamics and mechanics	
[SQ] REQUIREMENTS CANNOT BE MET BY COURSES:			
<ul style="list-style-type: none"> • Presenting a qualitative survey of a discipline. • Focusing on the impact of science on social, economic, or environmental issues. • Focusing on a specific or limiting but in-depth theme suitable for upper-division majors. 			

Proposer: Please complete the following section and attach appropriate documentation.

ASU--[SG] CRITERIA			
I. - FOR ALL GENERAL [SG] NATURAL SCIENCES CORE AREA COURSES, THE FOLLOWING ARE CRITICAL CRITERIA AND MUST BE MET:			
YES	NO		Identify Documentation Submitted
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Course emphasizes the mastery of basic scientific principles and concepts.	Course syllabus and outline
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Addresses knowledge of scientific method.	Course syllabus and outline
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Includes coverage of the methods of scientific inquiry that characterize the particular discipline.	Course syllabus and outline
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Addresses potential for uncertainty in scientific inquiry.	Course syllabus and outline
<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. Illustrates the usefulness of mathematics in scientific description and reasoning.	Course syllabus and outline
<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. Includes weekly laboratory and/or field sessions that provide hands-on exposure to scientific phenomena and methodology in the discipline, and enhance the learning of course material.	Course syllabus and outline
<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. Students submit written reports of laboratory experiments for constructive evaluation by the instructor.	Course syllabus and outline
<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. Course is general or introductory in nature, ordinarily at lower-division level; not a course with great depth or specificity.	Course syllabus and outline
II. - AT LEAST ONE OF THE ADDITIONAL CRITERIA THAT MUST BE MET WITHIN THE CONTEXT OF THE COURSE:			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	A. Stresses understanding of the nature of basic scientific issues.	Course syllabus and outline
<input checked="" type="checkbox"/>	<input type="checkbox"/>	B. Develops appreciation of the scope and reality of limitations in scientific capabilities.	Course syllabus and outline
<input type="checkbox"/>	<input checked="" type="checkbox"/>	C. Discusses costs (time, human, financial) and risks of scientific inquiry.	

[SG] REQUIREMENTS CANNOT BE MET BY COURSES:	
	<ul style="list-style-type: none">• Presenting a qualitative survey of a discipline.
	<ul style="list-style-type: none">• Focusing on the impact of science on social, economic, or environmental issues.
	<ul style="list-style-type: none">• Focusing on a specific or limiting but in-depth theme suitable for upper-division majors.

Course Prefix	Number	Title	Designation
BIO	109	NATURAL HISTORY OF THE SOUTHWEST	SG

Explain in detail which student activities correspond to the **specific** designation criteria. Please use the following organizer to explain how the criteria are being met.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
I a-d: Course emphasizes mastery of basic scientific principles, addresses knowledge of scientific method, includes coverage of method of scientific inquiry, addresses potential for uncertainty in scientific inquiry.	This course describes and applies geological principles to interpret the physical setting of the Southwest and applies meteorological and biological principles to describe the formation of the major communities of the Southwest.	Modules I and II of course syllabus and outline.
I e-h: Illustrates usefulness of mathematics in scientific description and reasoning. Includes weekly laboratory and/or field sessions; submits written reports of laboratory experiments. Course is intro level.	Course analyzes major desert adaptations, the process of natural selection, indentifying common plants and animals, including their distribution, adaptation, behavior and ecology.	Modules III, IV and V of course syllabus and outline.
II a and b: Stresses understanding of the nature of basic scientific issues; develops appreciation of the scope and reality of limitations in scientific capabilities.	Course integrates basic biological principles and specific natural history information into understanding common plants and animals of the Southwest. Skills developed for life-long learning of natural history and conducting scientific research.	Modules I and V of course syllabus and outline.

Course Content Form

PIMA COMMUNITY COLLEGE

Start Term: 200920

BIO 109IN Natural History of the Southwest

Initiator: Brad Fiero

CEU/Credit 4.0

Campus: West

Lecture 3.0

Date: 08/29/2008

Lab Periods: 3.0

Prerequisite(s):

Corequisite(s):

Recommendation:

Classification: Transfer

Description:

Study of the common plants and animals of the Southwest. Includes their identification, adaptations, behavior, and ecology. Also includes physical geography and geological principles of the region.

Information: IN is the integrated version of the course with the lecture and lab taught simultaneously.

Performance Objectives:

Upon successful completion of the course, the student will be able to:

1. Apply basic geological principles to interpret the physical setting of the Southwest.
2. Apply meteorological and biological principles to describe the formation of the major biotic communities in the Southwest.
3. Describe major desert adaptations and the process of natural selection.
4. Identify common plants and animals of the Southwest.
5. Integrate basic biological principles and specific natural history information and distinguish the common plants and animals of the Southwest.
6. Demonstrate skills necessary for life-long learning of natural history including conducting scientific research.

Course Outline:

- I. Science
- II. Physical Geography of the Southwest
 - A. Formation
 1. Geological principles
 2. Geological history of the southwest
 - B. Climate
- III. Biotic Communities of the Southwest
 - A. The four deserts
 - B. Other biotic communities
- IV. Desert Adaptations
 - A. Natural selection as a mechanism
 - B. Plants
 - C. Animals

- V. Common Plants and Animals
 - A. Interrelationships
 - B. Identification and natural history
 - 1. Plants
 - 2. Invertebrates
 - 3. Fish, amphibians, reptiles
 - 4. Birds
 - 5. Mammals

BIO 109 NATURAL HISTORY OF THE SOUTHWEST

Spring 2013; CRN 20942 (TTh 8:40-11:20 am)

SYLLABUS (subject to change)

Instructor: Dr. Brad Fiero

Office: Tortolita E-214; Phone: 206-6897; E-mail: bfiero@pima.edu

Office Hours: TTh 11:30 am – 2:00 pm. Also by appointment.

Dept. Office: Tortolita E-255; Phone: 206-6031

Texts: Natural History of the Southwest Lecture Outlines and Lab Manual by Brad Fiero

Optional Texts: A Natural History of the Sonoran Desert by Arizona-Sonora Desert Museum

Home Page Website: <http://wc.pima.edu/~bfiero/> [remainder of syllabus is found here]

MyPima: contains additional course material.

Description: Study of the common plants and animals of the Southwest. Includes their distribution, adaptation, behavior and ecology. Also includes physical geography and geological principles of the region.

Course Objectives: Upon completion of the course, the student will be able to do the following:

1. Apply basic geological principles to interpret the physical setting of the Southwest.
2. Apply meteorological and biological principles to describe the formation of the major biotic communities in the Southwest.
3. Describe major desert adaptations and the process of natural selection.
4. Identify common plants and animals of the Southwest.
5. Integrate basic biological principles and specific natural history information into an understanding of the common plants and animals of the Southwest.
6. Demonstrate skills necessary for life-long learning of natural history including conducting scientific research.

Grading System: Based on percentage of total accumulated points from both lecture and lab.

Evaluation:	Points:	Percentage:
Quizzes	400 pts (16 @ 25 pts)	40%
Identification Tests	200 pts (4 @ 50 pts)	20%
Labs	200 pts (see schedule)	20%
Project	140 pts (see schedule)	14%
Mini-Lecture	60 pts (see schedule)	6%
Final Exam and Final ID Test*	See below*	
Make-up/Extra-credit (optional)	Bonus 30 pts	Bonus 3%
Total Points:	1000 pts	100%

* Final Exam grade replaces the grade received on your lowest 4 quizzes (if it is to your benefit), and the Final ID Test replaces the grade received on your lowest ID Test (if it is to your benefit).

Final Grade:	A = 90 - 100%	900 - 1000 points
	B = 80 - 89%	800 - 899 points
	C = 70 - 79%	700 - 799 points
	D = 60 - 69%	600 - 699 points
	F = Below 60%	000 - 599 points

POLICIES

Attendance Policy: You are expected to arrive to class on time and actively participate each class period. Tardies and absences usually result in lost points. Quizzes are given out at the beginning of class time and must be completed in the time allotted (usually 10-20 minutes but may be more or less). Field trips and other class activities begin at the start of class and may be missed if you do not arrive to class on time. Complete attendance is mandatory during all student presentations; otherwise presentation points will be forfeited. Because of insurance limitations, non-registered visitors are not allowed at class sessions or on field trips.

Make-up Policy: Quizzes cannot be made up (except through the Final Exam score replacing the lowest 4 quiz grades). Late assignments (ID tests and labs) that can be made up will be accepted but will be penalized 25%. If you are going to miss class, then in some cases, quizzes, labs, and assignments may be turned in early with no loss in credit.

Rebuttal System: If you think you were graded unfairly (or erroneously) on an assignment or quiz, please turn in a written explanation (rebuttal) with your graded assignment/quiz to me within two weeks. I will write a response and return it to you. An appointment can be set up if you disagree with the resolution.

Scholastic Ethic: You are expected to abide by the College's Student Code of Conduct (<http://www.pima.edu/studenterv/studentcode/index.shtml>). Breaches in scholastic ethic (e.g. cheating and plagiarism [see <http://wc.pima.edu/~bfiero/plagrsm.htm>]) will be dealt with severely. If you cheat or plagiarize, you will get a zero on the quiz/assignment and, per College procedures, a letter will be sent the Vice President of Student Development and others where further action may occur (including suspension or expulsion from the College).

Be Courteous: Every student is expected to contribute to a positive, distraction-free learning environment. No use of cell phones, laptops, or other electronics in class except with instructor permission (points may be lost for infractions). No talking while the instructor or another student is talking to the class. In general, please be respectful of other students and the educational process.

Withdrawal (W): Students who fail to attend the first class or fail to attend 3 consecutive classes without notifying the instructor may be withdrawn. If you decide you cannot continue in class, then officially withdraw by the official deadline. If you wish to receive a grade of "W" after the withdrawal date, please request this in writing to the instructor; however, granting a grade of "W" after the withdrawal deadline is up to the discretion of the instructor.

Incomplete (I): Given only when a student has missed 20% or less of the course material for a reason acceptable to the instructor. Eligibility for an incomplete requires earned grades that average "C" or above at the time of request.

Posting of Grades: Grades will be posted anonymously using a "secret code" supplied by the student. In addition, grades may be sent by email. If you do not wish your grades to be posted or emailed, please inform the instructor.

Americans with Disabilities Act: Pima Community College is committed to providing accommodations for qualified individuals with disabilities in a timely and effective manner. To request a reasonable accommodation, students must be registered with the campus Disabled Student Resources (DSR) office. Accommodations will be made based on eligibility determined by Disabled Student Resources. Services can be requested at any time during the semester. Requesting services well in advance will help to ensure that resources are available when needed. Please contact a DSR office at 206-6688 or DSRhelp@pima.edu.

Mandatory Reporting Statement. Pima Community College complies with Arizona State Statutes pertaining to immediate reporting of abuse of a minor. Abuse is defined as sexual, physical, or neglect, and a minor is defined as a person under age 18 (ARS 13-3620). Students who disclose abuse of a minor, either personally experienced as a minor any time in the past or present, or that of another minor, to any College employee legally requires that employee to file an immediate report to PCC DPS. (PCC SPG-1505/BB).

LABS: Please note that most labs will be held outside where proper clothing is necessary (e.g. walking shoes, hat, etc.). Field trips take place within class time barring unforeseen circumstances (caution: we leave promptly).

PROJECT: Information is online at http://wc.pima.edu/~bfiero/bio109/project/109_project.htm

Bio 109 Grade Tracking Sheet

Grading Rubrics online at: <http://wc.pima.edu/~bfiero/bio109/rubrics.htm>

Quizzes = 400 pts (16 @ 25 pts each) = 40% of final grade

Quiz 1 _____	Quiz 9 _____	Quiz 17 _____ (replaces lowest quiz)
Quiz 2 _____	Quiz 10 _____	
Quiz 3 _____	Quiz 11 _____	(Quizzes 1-16 after replaced with 17) Total Quizzes _____
Quiz 4 _____	Quiz 12 _____	
Quiz 5 _____	Quiz 13 _____	Sum of lowest 4 quizzes _____
Quiz 6 _____	Quiz 14 _____	Final Exam _____
Quiz 7 _____	Quiz 15 _____	Final Exam -- sum of lowest 4 quizzes = Final Adds _____
Quiz 8 _____	Quiz 16 _____	

Identification (ID) Tests = 200 pts (4 @ 50 pts each) = 20% of final grade

Plant ID Test	_____	
Bird ID Test	_____	
Arthropod/Fish/Amphibian ID Test	_____	
Reptile/Mammal ID Test	_____	
Final ID Test (replaces lowest ID Test)	_____	Total ID Tests _____

Laboratories = 200 pts. = 20% of final grade

Plant Field Trip (20)	_____	
Plant Community Study (25)	_____	
Bird Field Trip (20)	_____	
Bird Census (25)	_____	
ASDM Field Trip (20)	_____	
Owl Pellets Lab (25)	_____	
Wildflower/Pollinator Lab (25)	_____	
Geological Detective (20)	_____	
Geology Field Trip (20)	_____	Total Lab Grade _____

Project = 140 pts = 14% of final grade

Research Question (10)	_____	
Proposal (30)	_____	
Data Collection (30)	_____	
Data (raw and summarized) (30)	_____	
PowerPoint/Presentation (40)	_____	Total Project _____

Mini-Lecture = 60 pts. = 6% of final grade

Literature Sources (10)	_____	
PowerPoint (20)	_____	
Presentation (30)	_____	Total Mini-Lecture _____

Natural History Event (Extra Credit) = 30 pts = +3% to final grade

Total Points = 1000 pts	_____	Grand Total _____
-------------------------	-------	-------------------

Grade Percent = Grand Total _____ / 1000 points possible = _____ X 100 = _____ %

FINAL GRADE:

A	=	90 - 100%	=	900 - 1000 points
B	=	80 - 89%	=	800 - 899 points
C	=	70 - 79%	=	700 - 799 points
D	=	60 - 69%	=	600 - 699 points
F	=	Below 60%	=	000 - 599 points

**BIO 109: NATURAL HISTORY OF THE SOUTHWEST
SPRING 2013 (20942) TTh TENTATIVE SCHEDULE**

<u>DATE</u>	<u>ACTIVITIES</u>	<u>DUE DATES</u>
Jan 15	Introduction	
Jan 17	Venomous Animals	
Jan 22	Science	Project Intro
Jan 24	Classification	
Jan 29	Plants 1	Research Question (10)
Jan 31	Plants 2	
Feb 5	<i>Plant Field Trip (20)</i>	Proposal Checklist Research Proposal (30)
Feb 7	<i>Plant Community Study (25)</i>	
Feb 12	Desert Climate 1	Plant ID Test (50) Data Collection (15)
Feb 14	Desert Climate 2	
Feb 19	Adaptation	Data Collection (15)
Feb 21	HOLIDAY	
Feb 26	Desert Adaptation	Data Analysis Data Due (30)
Feb 28	<i>Wildflower/Pollinator Relationships (25)</i>	
Mar 5	Birds	Prepare PowerPoint Submit PowerPoint by 8 am.
Mar 7	Project Presentations (40)	
Mar 12/14	SPRING BREAK	
Mar 19	Mating Systems	Mini-Lecture Topic Due
Mar 21	<i>Bird Field Trip (20)</i>	
Mar 26	Insects and Other Arthropods	Bird ID Test (60)
Mar 28	<i>Bird Census of Pima Grounds (25)</i>	
Apr 2	Fish, Amphibians, Reptiles	Mini-Lecture Sources Due (10)
Apr 4	<i>ASDM Field Trip (20)</i> Cost may be \$5 at door	
Apr 9	Mammals	Arth/Fish/Amph ID Test (50)
Apr 11	Mammals <i>Owl Pellets (25)</i>	
Apr 16	Plate Tectonics	Natural History Event Due (+30)
Apr 18	Geology Concepts <i>Geology Detective (20)</i>	
Apr 23	Geology of the SW	Rept/Mamm ID Test (50); Last day for makeups; submit ppt
Apr 25	<i>Geology Field Trip (20)</i>	
Apr 30	Mini-Lectures (60)	
May 2	Mini-Lectures	
May 7	Review for Final Exam	
May 9	Final Exam and Final ID Test	

* Lab studies are indicated above by italics and bold. Number in parentheses following the lab indicates the lab's point value.