General Studies Request Form

Consult the General Studies Request Overview and FAQ for more information and quick answers.

New permanent numbered courses must be submitted to the workflow in Kuali CM before a General Studies request is submitted here. The General Studies Council will not review requests ahead of a new course proposal being reviewed by the Senate.

Proposal Contact Information

Submitter Name	Submitter Email	Submitter Phone Number
Nicola Plowes	annapur-na.ganesh@mesacc.edu	480-461-7305

College/School	Department/School
Community College	Maricopa County Community College District

Submission Information

Type of submission:

New Request (Course or topic does not hold this designation)

Requested Effective Date

Spring 2024

Community College Request

Eligibility: Courses must have a current Course Equivalency Guide (CEG) evaluation. Courses evaluated as NT (non-transferable) are not eligible for General Studies.

Courses approved for General Studies require mandatory review every five years.

Subject (CC)	Number (CC)	Units/Credit Hours (CC)
BIO	116	4

Course Title (CC)

Introduction to Animal Behavior

Course Description (CC)

Scientific study of animal behavior for non-majors. Includes experimental exploration of current hypotheses for genetic and environmental influences, communication, reproductive strategies, habitat selection, and sociality.

Is this a crosslisted course?

No

This course currently transfers to ASU as:

Department Elective (DEC)

Enter the subject/prefix:

BIO Dept Elective

Is this a multi-section course?

Yes

Is it governed by a common syllabus?

Yes

General Studies

Requested Designation

SG - Natural Sciences - General

SG: Natural Sciences - General and SQ: Natural Sciences - Quantitative

Rationale and Objectives

Public scientific literacy, critical for sound decisions on scientifically infused issues such as climate change, includes understanding of basic science concepts, such as the fundamental behavior of matter and energy. It also includes the understanding that "science" is not an encyclopedic collection of facts. Rather, it is a process of exploration that embraces curiosity, inquiry, testing, and communication, to reduce uncertainty about nature. Absent understanding of scientific concepts and of the nature of science, science and pseudoscience are difficult to distinguish, and normal scientific disagreements may be misinterpreted as ideological or political disputes. The goal of the natural sciences (SQ/SG) requirement, including the laboratory requirement, is to instill understanding of basic science content and of the nature of science in every ASU graduate.

[Revised April 2014]

Note: "SG" and "SQ" requirements cannot be met by courses:
1. Presenting a qualitative survey of a discipline.
2. Focusing on the impact of science on social, economic, or environmental issues.
3. Focusing on a specific or limiting but in-depth theme suitable for upper-division majors.

For all Natural Science "SG" and "SQ" core area courses, the following are critical criteria and must be met:

"SG" and "SQ" Criteria 1
Course emphasizes the mastery of basic scientific principles and concepts.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

The course focuses on foundational concepts: natural selection, genetic inheritance, physiological mechanisms.
Students analyze and evaluate different hypotheses and experimental designs. There are hands-on lab practicals that reinforce the understanding of the scientific process.

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

This can be found in lectures such as:
L1 Scientific Method
L 1.2 Natural Selection
L2.1 Evolution and phylogeny
L2.2 Genes and Behavior
L12.1 The nervous system
L13.1 Hormones

"SG" and "SQ" Criteria 2
Addresses knowledge of scientific method.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

The scientific method is specifically addressed in week 1 lectures and in the second lab.

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

Lectures that address the scientific method explicitly include:
L1 Scientific Method The application of the scientific method is found in all other lectures.
Lab: Scientific Method and hypothesis testing
See competency #2: Analyze data collected in the study of animal behavior using the scientific method, quantitative reasoning, and critical thinking. (I, II, III, IV, V, VI, VII, VIII, IX)

"SG" and "SQ" Criteria 3
Includes coverage of the methods of scientific inquiry that characterize the particular discipline.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

In the labs, students will be repeatedly involved in application of scientific inquiry to animal behavior.

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

For example: Lab 2 is focused on the scientific method and hypothesis testing, including the use of statistics for rejecting a null hypothesis

"SG" and "SQ" Criteria 4
Addresses potential for uncertainty in scientific inquiry.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

In the course, students will explore entire case studies that demonstrate the difficulties of researching in natural environments and challenges to measuring complex behaviors.
Students will learn how researchers mitigate uncertainty through replication, critical thinking, and the use of multiple lines of evidence.

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

E.g. Lab 3 Elephant communication
Lab 5: foraging behavior (students will set up their own experiments in nature, with multiple replicates)

"SG" and "SQ" Criteria 5
Illustrates the usefulness of mathematics in scientific description and reasoning.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

Students will use mathematics to evaluate data and test hypotheses, they will use mathematical models to explore relationships

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

For example:
Kin selection theory depends on the calculations of relatedness between individuals, and is part of an analytic equation (Hamilton's rule) that determines when an organism will perform an altruistic behavior.
Course competency #2. Analyze data collected in the study of animal behavior using the scientific method, quantitative reasoning, and critical thinking. (I, II, III, IV, V, VI, VII, VIII, IX)

"SG" and "SQ" Criteria 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.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

There are 14 labs (see syllabus) each of which focuses on a deep dive of a concept from the course competencies.

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

Students will learn graphing, spreadsheet analysis, basic statistical analysis, report writing, and presentations. They will learn scientific methods involved in animal behavior research, such as hypothesis testing, and setting up apparatus. They will perform field experiments, analyze pre collected data, and use computer simulation models.
Course Competency #1: Perform laboratory activities using relevant equipment and supplies to observe animal behavior. (I, II, III, IV, V, VI, VII, VIII, IX)

"SG" and "SQ" Criteria 7
Students submit written reports of laboratory experiments for constructive evaluation by the instructor.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

All labs require online submissions, there are several labs that students will submit standard style lab reports
(intro/materials+methods/results/discussion)

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

Two labs will be submitted with formal lab report style:
Lab 1 Ethogram
Lab 5 Foraging behavior
Other labs will develop components of lab report e.g. summarizing results, discussing literature in relation to results (See syllabus)

"SG" and "SQ" Criteria 8
Course is general or introductory in nature, ordinarily at lower-division level; not a course with great depth or specificity.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

Topics will be presented at an introductory level, with no prior knowledge required.

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

See outline on syllabus, and choice of introductory textbook

"SG" and "SQ" Criteria 9

At least one of these additional criteria must be met within the context of the course:

A. Stresses understanding of the nature of basic scientific issues.

B. Develops appreciation of the scope and reality of limitations in scientific capabilities.

C. Discusses costs (time, human, financial) and risks of scientific inquiry.

"SG" and "SQ" Criteria 9A Information
Stresses understanding of the nature of basic scientific issues.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

This course:
*emphasizes the importance of empirical evidence
*demonstrates the role of hypothesis testing in the acquisition of knowledge
*discusses the importance of replication and peer review, which are critical components of scientific issues.

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

An example includes:
Lab 5: Foraging biology in the field. Students will design and run a simple experiment outdoors. They will apply the scientific method and write out hypotheses, collect and analyze data, and perform multiple replicates.

"SG" and "SQ" Criteria 9B Information
Develops appreciation of the scope and reality of limitations in scientific capabilities.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

By teaching students how to design, conduct, and analyze experiments properly, this course can help them understand the limitations of scientific capabilities. For instance, students will discuss how experimental design can influence the results of studies and how small sample sizes can impact the validity of findings.
In addition, the examination of historical and current controversies, such as the nature v nurture debate, will help students develop an appreciation of the reality of limitations in scientific capabilities.

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

Examples include:
Lab 1: Ethograms: has students design a simple behavior experiment based on scientific principles
Lab 13: students will explore how bias and limitations frame how and what researchers focus on.

"SG" and "SQ" Criteria 9C Information
Discusses costs (time, human, financial) and risks of scientific inquiry.

Identify the submitted documentation that provides evidence.

Syllabus, Competencies, see descriptions below

How does this course meet the spirit of this criteria?

In addition to an introduction of the concept of “Cost benefit” analysis in territoriality, students will also have a lab where they explore what kinds of costs are incurred, and strategies to mitigate those costs.

Provide detailed evidence of how this course meets this criteria (i.e. where in the syllabus or other course materials).

Example includes:
Lab 8 specifically addresses exploration of ethical considerations, cost-benefit analysis and risk assessment.

Attach a sample syllabus for this course or topic, including the list of any required readings.

BIO 116 Syllabus.pdf

Attach the table of contents from any required textbook(s).

BIO116 Text bookTOC-Nordell Animal behavior.pdf

Attach any other materials that would be relevant or helpful in the review of this request.

Bio 116 Course Competencies.pdf

Admin Only

Form Submission - Proposer

Submitted for Approval | Proposer

Annapurna Ganesh - October 10, 2023 at 10:37 PM (America/Phoenix)

Department Approval

Approved

Annapurna Ganesh - October 10, 2023 at 10:41 PM (America/Phoenix)

Provost's Office Review

Approved

Kaitlyn Dorson - October 11, 2023 at 1:11 PM (America/Phoenix)

April Randall

Natural Sciences Committee Review

Acknowledgement Requested

Chao Wang

Pierre Herckes

Steve Semken - October 20, 2023 at 9:07 AM (America/Phoenix)

We recommend resubmission and revision for BIO 116. The resubmission should include at least a few complete examples of lab exercises and more detailed explanation of the quantitative aspects of the course.

General Studies Council Meeting

Waiting for Approval

Kaitlyn Dorson

April Randall

Proposer Notification

Notification

Annapurna Ganesh

CC Notification

Notification

Jessica Burns
Bryan Tinlin
Michele Devine