

## Administrative Master Syllabus

### Course Information

<b>Course Title</b>	General Biology II
<b>Course Prefix, Num. and Title</b>	BIOL 1407
<b>Division</b>	Life Sciences
<b>Department</b>	Biology
<b>Course Type</b>	Academic WCJC Core Course
<b>Course Catalog Description</b>	The diversity and classification of life will be studied, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Laboratory activities will reinforce these concepts.
<b>Pre-Requisites</b>	TSI ELAR (Reading and Writing) requirement met; BIOL1406 is recommended
<b>Co-Requisites</b>	Enter Co-Requisites Here.

### Semester Credit Hours

<b>Total Semester Credit Hours (SCH): Lecture Hours:</b>	4:3:2
<b>Lab/Other Hours</b>	
<b>Equated Pay Hours</b>	4.2
<b>Lab/Other Hours Breakdown: Lab Hours</b>	2
<b>Lab/Other Hours Breakdown: Clinical Hours</b>	Enter Clinical Hours Here.
<b>Lab/Other Hours Breakdown: Practicum Hours</b>	Enter Practicum Hours Here.
<b>Other Hours Breakdown</b>	List Total Lab/Other Hours Here.

### Approval Signatures

Title	Signature	Date
<b>Department Head:</b>		
<b>Division Chair:</b>		
<b>VPI:</b>		

## **Additional Course Information**

**Topical Outline:** Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

### **LECTURE TOPICAL OUTLINE**

1. Evolution
  - A. History of evolutionary thought
  - B. Darwinian revolution and natural selection
  - C. Modern evolutionary synthesis
  - D. Evidence of evolution (fossil record, geologic change, biogeography, homologous structures, convergent evolution, biochemical)
2. Origin of Species
  - A. Biological species concept
  - B. Population genetics: natural selection, genetic drift and gene flow
  - C. Prezygotic vs. postzygotic mechanisms
  - D. Allopatric vs. sympatric speciation
  - E. Speciation and extinction
3. Biological Classification
  - A. Taxonomy
  - B. Interpretation of a Phylogenetic Tree
4. Organismal Survey (consideration given to anatomy, physiology, reproduction, ecology and evolutionary trends)
  - A. Prokaryotes
  - B. Protists
  - C. Fungi
  - D. Plants
    1. Nonvascular plants, seedless vascular plants & seed plants
    2. Angiosperm anatomy & life cycle
  - E. Animals
    1. Phyla: Porifera, Cnidaria, Platyhelminthes, Nematoda, Annelida, Mollusca, Arthropoda, Echinodermata & Chordata
    2. Role of organ systems on maintaining physiology and homeostasis

### **LAB TOPICAL OUTLINE**

1. Orientation, Lab Safety & Taxonomy Review
2. Protists
3. Fungi
4. Nonvascular and Seedless Vascular Plants
5. Seed Plants
6. Angiosperm Anatomy  
(Lab practical #1)
7. Sponges, Cnidarians & Platyhelminths
8. Nematodes & Mollusks
9. Annelids & Arthropods
10. Echinoderms & Intro to Chordates
11. Craniates I
12. Craniates II  
(Lab Practical #2)

## Course Learning Outcomes:

### Learning Outcomes – Upon successful completion of this course, students will:

1. Describe modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation.
2. Describe phylogenetic relationships and classification schemes.
3. Identify the major phyla of life with an emphasis on plants and animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
4. Describe basic animal physiology and homeostasis as maintained by organ systems.
5. Compare different sexual and asexual life cycles noting their adaptive advantages.
6. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.
7. Apply scientific reasoning to investigate questions, and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
8. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
9. Communicate effectively the results of scientific investigations.

### Methods of Assessment:

Exams, quizzes, lab reports, essays, presentations, discussions (online or in-class), group activities, graph/table/chart presentations or post-tests

## Required text(s), optional text(s) and/or materials to be supplied by the student:

**Text:** Raven et al. *Biology*. McGraw-Hill. Current edition

**Lab Manual (if required):** Wharton County Junior College Department of Biology. General Biology II Lab Manual. Hayden-McNeil, LLC. Current edition.

## Suggested Course Maximum:

36 lecture; 24 lab

## List any specific or physical requirements beyond a typical classroom required to teach the course.

Laboratory classrooms required

**Course Requirements/Grading System:** Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

Lecture Average:		55%
Exam average (3-4 exams)	30-55%	
Other (homework, quizzes, projects, etc.)	0-25%	
Laboratory Average *		25%
Final Exam (includes at least 50% comprehensive material)		<u>20%</u>
	<b>TOTAL</b>	<b>100%</b>

\* Laboratory Average calculated as follows:

Quiz Average (best 6 of 9 weekly quizzes)	50%
Lab Practical #1 Exam	25%
Lab Practical #2 Exam	<u>25%</u>
	100%

A 100-90; B 89-80; C 79-70; D 69-60; F Below 60



**Curriculum Checklist:**

- Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.
- Administrative WCJC Core Course** – Attach the Core Curriculum Review Forms
  - Critical Thinking
  - Communication
  - Empirical & Quantitative Skills
  - Teamwork
  - Social Responsibility
  - Personal Responsibility
- WECM Course** – If needed, revise the Program SCANS Matrix and Competencies Checklist

## Core Curriculum Review Form

**Foundational Component Area:** Core 030: Life & Physical Science

**Course Prefix & Suffix:** BIOL1407

**Core Objective:**

**Critical Thinking Skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

### Student Learning Outcome Supporting Core Objective:

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
State Mandated	Communicate effectively the results of scientific investigations	Working in groups, students complete the "Modeling Natural Selection: Seed Predation Activity". Survivability of various bean phenotypes is determined based upon habitat.	Group lab activity or post-test
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.

### Core Curriculum Review Form

**Foundational Component Area:** Core 030: Life & Physical Science

**Course Prefix & Suffix:** BIOL1407

**Core Objective:**

**Communication Skills**—to include effective development, interpretation and expression of ideas through written, oral and visual communication

**Student Learning Outcome Supporting Core Objective:**

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
State Mandated	Communicate effectively the results of scientific investigations	Working in groups, students complete the "Modeling Natural Selection: Seed Predation Activity". Survivability of various bean phenotypes is determined based upon habitat.	Group lab activity or post-test
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.

### Core Curriculum Review Form

**Foundational Component Area:** Core 030: Life & Physical Science

**Course Prefix & Suffix:** BIOL1407

**Core Objective:**

**Empirical and Quantitative Skills**—to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

**Student Learning Outcome Supporting Core Objective:**

For each core objective, there must be at least two different methods of assessment.

<b>SLO Status</b>	<b>Student Learning Outcome (SLO)</b>	<b>Learning Activity</b>	<b>Assessment</b>
State Mandated	Communicate effectively the results of scientific investigations.	Working in groups, students complete the "Modeling Natural Selection: Seed Predation Activity". Survivability of various bean phenotypes is determined based upon habitat.	Group lab activity or post-test
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.

## Core Curriculum Review Form

**Foundational Component Area:** Core 030: Life & Physical Science

**Course Prefix & Suffix:** [Click here to enter text.](#)

### Core Objective:

**Teamwork**—to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

### Student Learning Outcome Supporting Core Objective:

For each core objective, there must be at least two different methods of assessment.

SLO Status	Student Learning Outcome (SLO)	Learning Activity	Assessment
State Mandated	Communicate effectively the results of scientific investigations.	Working in groups, students complete the "Modeling Natural Selection: Seed Predation Activity". Survivability of various bean phenotypes is determined based upon habitat.	Group lab activity or post-test
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.
Choose a SLO status.	Insert SLO (from Administrative Master Syllabi)	Provide a brief name and description of the sample learning activity.	Provide a brief name and description of the sample quiz, exam, rubric, assignment, etc. for assessing the objective.