

CORE CURRICULUM COMPONENT APPLICATION
Texarkana College

Part I: Course Information/ Course not currently offered

Course Type

- Existing/Restructured
 New Course

Course Prefix & Number: **BIOL 1311**

Texas Common Course Number (TCCN): **1311**

Course Title: **General Botany**

Course Catalog Description

General Botany (4,3,3). A systematic survey of the structure and functions of plants including cell biology, metabolism, taxonomy, reproduction, adaptation and ecology. Included are the life histories of representative plant groups.

Course Prerequisites:

Available Online?

- Yes
 No

Part II: THECB Course Objectives

Upon successful completion of this course, students will:

1. Compare and contrast the structures, reproduction, and characteristics of plants, algae, and fungi.
2. Describe the characteristics of life and the basic properties of substances needed for life.
3. Identify the principles of inheritance and solve classical genetic problems.
4. Describe phylogenetic relationships and classification schemes.
5. Identify the major phyla of life with an emphasis on plants, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
6. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
7. Identify the substrates, products, and important chemical pathways in photosynthesis and respiration.
8. Describe the unity and diversity of plants and the evidence for evolution through natural selection.
9. Compare different sexual and asexual life cycles noting their adaptive advantages.
10. Describe the reasoning processes applied to scientific investigations and thinking.
11. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
12. Use critical thinking and scientific problem-solving to make informed decisions in the

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laboratory.

13. Communicate effectively the results of scientific investigations.

14. Compare and contrast the structures, reproduction, and characteristics of plants, algae, and fungi.

15. Describe the characteristics of life and the basic properties of substances needed for life.

16. Identify the principles of inheritance and solve classical genetic problems.

17. Describe phylogenetic relationships and classification schemes.

18. Identify the major phyla of life with an emphasis on plants, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.

19. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.

20. Identify the substrates, products, and important chemical pathways in photosynthesis and respiration.

21. Describe the unity and diversity of plants and the evidence for evolution through natural selection.

22. Compare different sexual and asexual life cycles noting their adaptive advantages.

23. Describe the reasoning processes applied to scientific investigations and thinking.

Part III: THECB Skill Objectives

1. Critical Thinking Skills: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

2. Communication Skills: to include effective development, interpretation and expression of ideas through written, oral and visual communication

3. Empirical and Quantitative Skills: to include applications of scientific and mathematical concepts.

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

Part IV: Course Student Learning Outcomes (SLO)

Upon successful completion of this course, students will:

1. Compare and contrast the structures, reproduction, and characteristics of plants, algae, and fungi.

2. Describe the characteristics of life and the basic properties of substances needed for life.

3. Identify the principles of inheritance and solve classical genetic problems.

4. Describe phylogenetic relationships and classification schemes.

5. Identify the major phyla of life with an emphasis on plants, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.

6. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.

7. Identify the substrates, products, and important chemical pathways in photosynthesis and respiration.

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8. Describe the unity and diversity of plants and the evidence for evolution through natural selection.
9. Compare different sexual and asexual life cycles noting their adaptive advantages.
10. Describe the reasoning processes applied to scientific investigations and thinking.
11. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
12. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
13. Communicate effectively the results of scientific investigations.
14. Compare and contrast the structures, reproduction, and characteristics of plants, algae, and fungi.
15. Describe the characteristics of life and the basic properties of substances needed for life.
16. Identify the principles of inheritance and solve classical genetic problems.
17. Describe phylogenetic relationships and classification schemes.
18. Identify the major phyla of life with an emphasis on plants, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
19. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
20. Identify the substrates, products, and important chemical pathways in photosynthesis and respiration.
21. Describe the unity and diversity of plants and the evidence for evolution through natural selection.
22. Compare different sexual and asexual life cycles noting their adaptive advantages.
23. Describe the reasoning processes applied to scientific investigations and thinking.

Skill Objective:	Critical Thinking Skills: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
THECB Course Objective	(SLO #1) Compare and contrast the structures, reproduction, and characteristics of plants, algae, and fungi.
Course Student Learning Outcome	(SLO #1) Compare and contrast the structures, reproduction, and characteristics of plants, algae, and fungi.
General Learning Activities	Laboratory activity
Assessment <i>Must Include Assignment & Rubric</i>	Lab grade and attached rubric

Skill Objective:	Communication Skills: to include effective written,
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	oral, and visual communication
THECB Course Objective	(SLO #4) Describe phylogenetic relationships and classification schemes.
Course Student Learning Outcome	(SLO #4) Describe phylogenetic relationships and classification schemes.
General Learning Activities	Essay question on exam
Assessment <i>Must Include Assignment & Rubric</i>	See attached rubric

Skill Objective:	Empirical and Quantitative Skills: to include applications of scientific and mathematical concepts.
THECB Course Objective	(SLO #3) Identify the principles of inheritance and solve classical genetic problems.
Course Student Learning Outcome	(SLO #3) Identify the principles of inheritance and solve classical genetic problems.
General Learning Activities	Lab activity
Assessment <i>Must Include Assignment & Rubric</i>	Lab grade using attached rubric

Skill 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
THECB Course Objective	(SLO #11) Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
Course Student Learning Outcome	(SLO #11) Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
General Learning Activities	Lab activity
Assessment <i>Must Include Assignment & Rubric</i>	See attached rubric