

PLANTS AND CIVILIZATION

BIOL 02 115
Prerequisite: none
Spring 2001
MWF 9:00-9:50, M 2:00-3:50
N111

Dr. Bill Bromer
N113
Office Hours: MWF 10-12, TTh 9-10
740-3467
wbromer@stfrancis.edu

COURSE DESCRIPTION:

BI 115 (4) [3S] lab and lecture introduces the non-science major to the impact of plants on the past, present, and future of human civilization. Topics include the origin of agricultural crops, plants that changed history, the green revolution, medicinal plants, supermarket botany, and genetic engineering of plants. Also included is a brief introduction to plant structure, function, and classification.

OBJECTIVES:

When you successfully complete this course, you will be able to:

1. understand enough **basic plant biology**, especially plant structure, physiology and taxonomy, to make intelligent decisions as consumers of plant products (herbivores). You will be asked to make decisions and to justify your decisions using basic plant biology within the framework of economic, social, and environmental concerns.
2. apply the **scientific process** to topics in basic plant biology, ethnobotany, and economic botany. You will be asked to participate in literature searches, hypothesis formation, data collection, data analysis, interpretation, report presentation (oral and written).
3. analyze the **relationship between plants and people**. You will be asked to investigate how different people use plants throughout the world and to investigate plants that are important in the history and religions of people from various cultures.

OTHER COURSE INFORMATION:

There are no prerequisites, but I do expect you to demonstrate an understanding of the material presented in class. If you don't understand something, please ask for an explanation. On tests, homework, and papers you will be expected to clearly and logically present the evidence (data) and to apply your synthesis of the data to make decisions. Grading of your work will reflect this philosophy, by requiring you to memorize, understand, apply, analyze, synthesize and evaluate material from discussion, laboratory, discussion and readings. While attendance is not graded, many of the class periods will include information and syntheses that are not readily available in your textbook. There will also be group discussions that occur during lecture and lab times and your participation in these discussions will be evaluated by Dr. Bromer and your group members.

The course has three areas of emphasis:

1. Basic plant biology
2. Ethnobotany
3. Economic Botany

Basic plant biology provides the necessary biological background for understanding and interpreting ethnobotany and economic botany. The study of plants used for beverages, drugs, and food is organized around the structure, function and uses of various plants. Most of the material discussed in basic plant biology will be used when we discuss different types of plants that are used as foods. We will frequently refer back to the basic biology to help us understand the structure, function and uses of various plants.

GRADING AND ASSIGNMENTS:

Your grades will be based on four exams, a final with some comprehensive questions, lab reports, preparatory questions, a research report, and participation.

TEST #1	100 points
TEST #2	100
TEST #3	100
TEST #4	100
Preparatory Questions	100
Laboratory Experiments or Projects	175
Plant Cells	10
Plant Structure	10
Human Nutrition	50 (15+35)
Plant Nutrition	10
Fermentation	50 (15+35)
Ethnobotanicals	10
GMO debate	20 (10+10)
Spring Wildflowers	15
Research Report	100
Participation in groups, class and laboratory	25
TOTAL	800 points

Preparatory questions are due at the beginning of the class period and you should print out two copies of your individual answers. One copy to use in class and another to turn in. Preparatory Questions are not accepted late. Participation will be based on class participation during discussions and lectures. Simply sitting in class will not be sufficient to earn the participation points. If you are not in class you can not earn participation points. If it becomes apparent that you are not reading assignments before class, I may use some of the participation points for unannounced quizzes.

Your lab reports will be described in a separate memo, but they will be either group PowerPoint presentations or individual papers of about 3-5 pages, typed, and double-spaced. Lab reports will usually be due one week after you have finished the lab.

Late assignments lose 10% per day, except Preparatory Questions; no late preparatory questions will be accepted. Make-up exams are given only in cases of emergencies and only with prior approval. All make-up exams will be given on Friday April 20 at 2:00 p.m. Grades will be assigned based on the following cut-offs:

Grade	Points	Percentage
A	720-800	90-100%
B	640-719	80-89%
C	560-639	70-79%
D	480-559	60-69%
F	< 480	< 60%

Disability Statement:

All students with documented disabilities who need accommodations should contact your professor within the first two weeks of school and schedule an appointment with the Disabilities Coordinator. Please call Dr. MeShelda Jackson at 815-740-3461 or email her at mjackson@stfrancis.edu to schedule an appointment.

Office Hours:

My office hours are MWF 10-12 and TTh 9-10. If you have questions or problems stop by anytime, if I am unavailable you can leave a note or we can make an appointment. If you need to contact me by phone, call 740-3467, if I am not there, please leave a message on the voice mail. You may also reach me by e-mail at wbromer@stfrancis.edu

Web Page:

<http://www.stfrancis.edu/ns/bromer/pltciv>

Text:

Levetin, E. and K. McMahon. 1999. Plants and Society 2nd edition. Wm. C. Brown Publishers, Dubuque, IA.

Grading Criteria for Essay Exam Answers

Grade	Characteristics
A Distinguished Work	<ul style="list-style-type: none"> ➤ Completely and directly answers the question. ➤ Makes connections with other parts of the course or related information. ➤ Provides insight not readily obtained from class or reading. ➤ Supports the answer with detailed evidence that is correct. ➤ Uses specific examples where appropriate. ➤ All information is correct.
B Superior Work	<ul style="list-style-type: none"> ➤ Completely answers the question. ➤ Mentions a related topic. ➤ Provides supporting information from class or textbook. ➤ Uses a number of broad or general examples or a few specific examples. ➤ All information is substantially correct.
C Average Work	<ul style="list-style-type: none"> ➤ Minimally answers the question. ➤ Provides some supporting data from class or textbook. ➤ Uses a few broad or general examples where appropriate ➤ Most of the information presented is correct.
D Merely Passing	<ul style="list-style-type: none"> ➤ Almost answers all or most parts of the question. ➤ Supporting data is lacking, deficient, or incorrect. ➤ No examples or inappropriate examples. ➤ Part of the answer is wrong.
F Failing Work	<ul style="list-style-type: none"> ➤ Answers less than half of the question or totally misses the point of the question. ➤ Provides little or no supporting evidence or the supporting information is substantially incorrect. ➤ Most of the answer is incorrect.

TENTATIVE SCHEDULE FOR PLANTS & CIVILIZATION - Spring 2001

DATE	TOPICS	ASSIGNMENTS
Jan. 8	No lecture class <i>Introduction – Plant Seeds</i>	
10	Why are plants important	Chapter 1, PQ1
12	What is Science? What is Biology? Botany?	
15	NO CLASS – Martin Luther King day <i>NO LABORATORY</i>	
17	Plant Cells I	Chapter 2, PQ2
19	Plant Cells II	Chapter 2
22	Plant Body - Plant Tissues <i>Microscope – Plant Cells</i>	Chapter 3, PQ3 <i>handout</i>
24	Plant Body - Plant Organs	Chapter 3
28	Plant Physiology I -	Chapter 4
29	Plant Physiology II <i>Plant Structure & Power Point</i>	Chapter 4, PQ4 <i>handout</i>
31	Plant Physiology - Photosynthesis	Chapter 4
February 2	Fermentation	Chapter 4
5	TEST #1 <i>Human Nutrition. Where is the starch? protein?</i>	<i>Chapter 10</i>
7	Origins of Agriculture - Neolithic Revolution	Chapter 11
9	Origins of Agriculture - Hypotheses	Chapter 11
12	The Grasses I <i>Plant Nutrition</i>	Chapter 12, PQ 5 <i>handout</i>
14	The Grasses II	Chapter 12
16	Legumes I	Chapter 13 📁 Plant Nutrition
19	Legumes II <i>Human Nutrition II</i>	Chapter 13, PQ6 <i>Chapter 10</i>
21	Starchy Staples I	Chapter 14
23	Starchy Staples II	Chapter 14 📁 Nutrition 1 st
26	Feeding a Hungry World - Discussion <i>Super Market Botany</i>	Chapter 15 <i>handout</i>
28	TEST #2	
March 2		📁 Nutrition final
5, 7 & 9	SPRING BREAK	

DATE	TOPICS	ASSIGNMENTS
12	Alcoholic Beverages I <i>Start fermentation</i>	Chapter 23, PQ7 <i>handout</i>
14	Alcoholic Beverages II	Chapter 23
16	Alcoholic Beverages III	Chapter 23
19	Stimulating Beverages I <i>Continue fermentation</i>	Chapter 16, PQ8
21	Stimulating Beverages II	Chapter 16
23	Herbs and Spices	Chapter 17
26	Herbs and Spices <i>Ethnobotanicals – antibiotic abilities</i>	Chapter 17, PQ9 <i>handout</i>
28	Natural Selection & Spices & Culture & Climate	Chapter 8
30	Materials: Cloth, Paper & Wood I	Chapter 18
April 2	Materials: Cloth, Paper & Wood II <i>Presentations of Fermentation Projects</i>	Chapter 18 📁 <i>Fermentation 1st</i>
4	TEST #3	
6	Genetics	Chapter 7
9	GMO <i>GMO Project</i>	handouts, PQ10
11	GMO Debate	📁 GMO - Poster or Web Page
13	NO CLASS – Easter Recess	
16	Medicinal Plants	Chapter 19, PQ11 📁 <i>Fermentation final</i>
18	Medicinal Plants	Chapter 19
20	Medicinal Plants	Chapter 19
23	Psychoactive Plants I <i>Spring Wildflowers</i>	Chapter 20, PQ12
25	Psychoactive Plants II	Chapter 20
27	Psychoactive Plants III	Chapter 20
30	Poisonous and Allergy Plants <i>Spring Wildflowers</i>	Chapter 21
May 2-8	FINAL EXAMS TEST #4	

📁 Reports or Projects due

Group Attendance and Assignment - Please note absence with an "A."

Name:			
Phone:			
Jan. 8			
10	O	R	S
12	R	S	O
15	S	O	R
17	O	R	S
19	R	S	O
22	S	O	R
24	O	R	S
28	R	S	O
29	S	O	R
31	O	R	S
February 2	R	S	O
5	TEST #1	TEST #1	TEST #1
7	S	O	R
9	O	R	S
12	R	S	O
14	S	O	R
16	O	R	S
19	R	S	O
21	S	O	R
23	O	R	S
26	R	S	O
28	S	O	R
March 2	O	R	S
5, 7 & 9	SPRING BREAK	SPRING BREAK	SPRING BREAK
12	R	S	O
14	S	O	R
16	O	R	S
19	R	S	O
21	S	O	R
23	O	R	S
26	R	S	O
28	S	O	R
30	O	R	S
April 2	R	S	O
4	TEST #3	TEST #3	TEST #3
6	S	O	R
9	O	R	S
11	R	S	O
13	Easter Recess	Easter Recess	Easter Recess
16	S	O	R
18	O	R	S
20	R	S	O
23	S	O	R
25	O	R	S
27	R	S	O
30	S	O	R
May 2-8	TEST #4	TEST #4	TEST #4

O = organizer R = recorder S = speaker

Questions for Teams

1. What is the general purpose or mission of this team?
2. What specific jobs or tasks will the team need to undertake?
3. Is there a deadline for completing team work?
4. To whom will the team be accountable?
5. What will be the measures of team success?
6. What processes will the team use to gather information and solve problems?
7. How will decisions be made? (leader, majority, consensus?)
8. Will there be a process for conflict resolution?
9. Who are the major stake holders affected by this team's work?
10. Does each person know why she/he is here?
11. How does each person feel about being here?
12. What potential conflicts are there between responsibility to the team and other responsibilities?
13. What is the level of familiarity and trust among team members?
14. What skills, experience, and personal qualities does each one contribute?
15. Is there someone who will observe the emotional climate on the team?