I. CATALOG INFORMATION

A. Discipline: BOTANY

B. Subject Code and Number: BOT M01

C. Course Title: Introduction to Botany

D. Credit Course units:

Units: 5

Lecture Hours per week: 3

Lab Hours per week : 6

Variable Units : No

E. Student Learning Hours:

Lecture Hours:

Classroom hours: 52.5 - 52.5

Laboratory/Activity Hours:

Laboratory/Activity Hours 105 - 105

Total Combined Hours in a 17.5 week term: 157.5 - 157.5

F. Non-Credit Course hours per week _____

G. May be taken a total of: [X] 1 [ ] 2 [ ] 3 [ ] 4 time(s) for credit

H. Is the course co-designated (same as) another course: No [X] Yes [ ]
If YES, designate course Subject Code & Number: _____

I. Course Description:

Emphasizes the physical and chemical aspects of life as related to plants. Includes cellular organization, metabolism, reproduction, heredity, ecology, evolution, and plant kingdom survey. Examines the anatomy and physiology of representative plants in each of the major plant groupings.

J. Entrance Skills

*Prerequisite: No [X] Yes [ ] Course(s)

_____

*Corequisite: No [X] Yes [ ] Course(s)

_____

Limitation on Enrollment: No [X] Yes [ ]

_____

Recommended Preparation: No [ ] Yes [X] Course(s)
BIOL M02A or BIOL M02AH

Other: No [X] Yes [ ]

_____

K. Other Catalog Information:

II. COURSE OBJECTIVES

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

		Methods of evaluation will be consistent with, but not limited by, the following types or examples.
1	recognize the evolutionary relationships among the major groups of plants and their impact on the earth, including constructing and interpreting phylogenies.	Quizzes Test Papers Projects Lab practical
2	apply techniques and principles acquired in lecture and laboratory to correctly identify plants encountered on a daily basis, and place them in the appropriate major group (Division or Phylum).	Lab practicals Skills demonstrations
3	apply physiological principles learned in the course to the growth and maintenance of plants.	Projects Lab practicals
4	describe plants' roles in ecosystems and how worldwide environmental changes may affect these roles.	Quizzes Test Papers Projects
5	describe plant hormones and their effect and uses in industrial agriculture.	Quizzes Test Papers Projects
6	describe the structural organization of major plant groups.	Quizzes Tests Papers Projects
7	identify and describe plant structures and relate them to their function.	Quizzes Test Papers Projects Lab practicals
8	describe how organisms are organized into and interact within and among populations and communities.	Quizzes Test Papers Projects

9	apply scientific methodology and reasoning through active experimentation and experiences.	Papers Projects Lab practicals
10	acquire, use, and cite scientific literature for scientific writing.	Papers Projects
11	describe life cycles within and among the plant taxa.	Quizzes Test Papers Projects Lab practicals

III. COURSE CONTENT

Estimated %	Topic	Learning Outcomes
Lecture (must total 100%)		
8.00%	Plant Diversity: Evolution of the Eukaryotic Cell	1, 3, 7
4.00%	Chemistry	3
12.00%	Bacteria, Algae, Fungi	1, 2, 3, 6
4.00%	Bryophytes	1, 2
4.00%	Seedless Vascular Plants	1, 2, 3, 4, 6
4.00%	Ferns	1, 7, 11
8.00%	Seed Plants	1, 2, 11
5.00%	Plant Hormones, Tropisms	5
4.00%	Ecosystems, Succession, Biomes, Plant Communities	4, 10
4.00%	Atomic Theory	3
4.00%	Biological Molecules	3
4.00%	Cells and Membranes	3, 4, 5
3.00%	Mitosis and Meiosis	3, 4, 7
9.00%	Photosynthesis and Respiration	3, 4, 5, 7
4.00%	Phylogeny and Evolution	1, 2, 6, 7
4.00%	Plant Hormones	3, 5, 7
5.00%	Tissues, Plant Development and Secondary Growth	3, 5, 6, 7
10.00%	Movement of Water and Solutes and Mineral Nutrition	3, 4, 5
Lab (must total 100%)		
7.00%	Scientific Method and Whole Plant Anatomy	3, 4, 6, 9, 10

7.00%	Monocots and Dicots and Biological Macromolecules	1, 3, 4
6.00%	Cells and Microscope, Diffusion and Osmosis	3
6.00%	Mitosis and Meiosis, Plant Tissues	3
6.00%	Plant Tissues Continued and Respiration	3
6.00%	Photosynthesis and Bacteria	1, 3
6.00%	Cyanobacteria and Rhodophyta	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
6.00%	Phaeophyta and Chlorophyta	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
6.00%	Bryophytes and Seedless Vascular Plants (ferns)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
6.00%	Plant hormones	3, 5
7.00%	Pinophyta (Coniferophyta) and Anthophyta	4, 6, 7, 11
6.00%	Flowers, Inflorescences, Pollinators, and Fruits	4, 6, 7, 8
6.00%	Roots and Herbaceous Shoots	1, 2, 3, 4, 7
7.00%	Transpiration and Mineral Nutrition, Ecological Concepts	3, 4
6.00%	Wood, Bark and Leaves	3, 4
6.00%	Fungi and Lichen	1, 2, 3, 4, 6, 7

IV. TYPICAL ASSIGNMENTS

A. Writing assignments

Writing assignments are required. Possible assignments may include, but are not limited to:	
1	write a paper on plant ecosystems.
2	keep a written log and drawings of field observations.

B. Appropriate outside assignments

Appropriate outside assignments are required. Possible assignments may include, but are not limited to:	
1	participate in field observations and field trips.
2	review scientific literature on assigned topics such as how a particular plant structure relates to its function.

C. Critical thinking assignments

Critical thinking assignments are required. Possible assignments may include, but are not

limited to:	
1	discuss evolution and plant diversity.
2	identify plant species on field trips and lab practicals.
3	debate the value of plant hormones in industrial agriculture.

V. METHODS OF INSTRUCTION

Methods of instruction may include, but are not limited to:

☐ Distance Education – When any portion of class contact hours is replaced by distance education delivery mode (Complete DE Addendum, Section XV)

☒ Lecture/Discussion

☒ Laboratory/Activity

☒ Other (Specify)
Reading assignments to develop and understanding of plant physiological processes
Develop microscopy skills for making observations in the lab

☒ Optional Field Trips

☐ Required Field Trips

VI. METHODS OF EVALUATION

Methods of evaluation may include, but are not limited to:

☒ Essay Exam	☒ Classroom Discussion	☐ Skill Demonstration
☒ Problem Solving Exam	☒ Reports/Papers/ Journals	☐ Participation
☒ Objective Exams	☒ Projects	☒ Other (specify)

Critique of short oral presentations

VII. REPRESENTATIVE TEXTS AND OTHER COURSE MATERIALS

Ray, Evert, and Susan Eichhorn. Raven Biology of Plants. 8th ed. Freeman, 2013.

Rushforth,Samuel R., et al. A Photographic Atlas for the Botany Laboratory. 7th ed. Morton, 2016.

Young, Paul. The Botany Coloring Book. Harper Perennial, 1982.

Evert, Ray, et al. Laboratory Topics in Botany. 8th ed. Freeman, 2012.

Balbach, Margaret, and Lawrence Bliss. A Laboratory Manual for Botany. 7th ed. Brooks/Cole, 1991.

VIII. STUDENT MATERIALS FEES

☐ ☐

[X] No [ ] Yes

IX. PARALLEL COURSES

College	*Course Number*	*Course Title*	*Units*
Santa Monica College	BOTANY 1	General Botany	4
UC, Santa Barbara	EEMB 21	General Botany	4
Cal Poly San Luis Obispo	BOT 121	General Botany	4
Humboldt State Univ.	BOT 105	General Botany	4

X. MINIMUM QUALIFICATIONS

Courses Requiring a Masters Degree:
Master's degree in any biological science OR bachelor's degree in any biological science AND master's degree in biochemistry, biophysics, or marine science OR the equivalent

XI. ARTICULATION INFORMATION

A. Title V Course Classification:

1. This course is designed to be taken either:

   [ ] Pass/No Pass only (no letter grade possible); or
   [X] Letter grade (P/NP possible at student option)

2. Degree status:
   Either [X] Associate Degree Applicable; or [ ] Non-associate Degree Applicable

B. Moorpark College General Education:

1. Do you recommend this course for inclusion on the Associate Degree General Education list?
   Yes: [X] No: [ ] If YES, what section(s)?

   [X] A1 - Natural Sciences - Biological Science
   [ ] A2 - Natural Sciences - Physical Science
   [ ] B1 - Social and Behavioral Sciences - American History/Institutions
   [ ] B2 - Social and Behavioral Sciences - Other Social Behavioral Science
   [ ] C1 - Humanities - Fine or Performing Arts
   [ ] C2 - Humanities - Other Humanities
   [ ] D1 - Language and Rationality - English Composition
   [ ] D2 - Language and Rationality - Communication and Analytical Thinking
   [ ] E1 - Health/Physical Education
   [ ] E2 - PE or Dance
   [ ] F - Ethnic/Gender Studies

C. California State University(CSU) Articulation:

1. Do you recommend this course for transfer credit to CSU? Yes: [X] No: [ ]

2. If YES do you recommend this course for inclusion on the CSU General Education list?
   Yes: [X] No: [ ] If YES, which area(s)?

   A1 [ ] A2 [ ] A3 [ ] B1 [ ] B2 [X] B3 [X] B4 [ ]

   C1 [ ] C2 [ ] D1 [ ] D2 [ ] D3 [ ] D4 [ ] D5 [ ]

   D6 [ ] D7 [ ] D8 [ ] D9 [ ] D10 [ ] E [ ]

D. University of California (UC) Articulation:

1. Do you recommend this course for transfer to the UC? Yes: [X] No: [ ]

2. If YES do you recommend this course for the Intersegmental General Education Transfer Curriculum (IGETC)? Yes: [X] No: [ ]

IGETC Area 1: English Communication

- [ ] English Composition
- [ ] Critical Thinking-English Composition
- [ ] Oral Communication

IGETC Area 2: Mathematical Concepts and Quantitative Reasoning

- [ ] Mathematical Concepts

IGETC Area 3: Arts and Humanities

- [ ] Arts
- [ ] Humanities

IGETC Area 4: Social and Behavioral Sciences

- [ ] Anthropology and Archaeology
- [ ] Economics
- [ ] Ethnic Studies
- [ ] Gender Studies
- [ ] Geography
- [ ] History
- [ ] Interdisciplinary, Social & Behavioral Sciences
- [ ] Political Science, Government & Legal Institutions
- [ ] Psychology
- [ ] Sociology & Criminology

IGETC Area 5: Physical and Biological Sciences (mark all that apply)

- [ ] Physical Science Lab or Physical Science Lab only (none-sequence)
- [ ] Physical Science Lecture only (non-sequence)
- [X] Biological Science
- [ ]

☐ Physical Science Courses

☐ Physical Science Lab or Biological Science Lab Only (non-sequence)

☐ Biological Science Courses

☐ Biological Science Lab course

☐ First Science course in a Special sequence

☐ Second Science course in a Special Sequence

☒ Laboratory Activity

☐ Physical Sciences

IGETC Area 6: Language other than English

☐ Languages other than English (UC Requirement Only)

☐ U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)

☐ U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)

XII. REVIEW OF LIBRARY RESOURCES

A. What planned assignment(s) will require library resources and use?

The following assignments require library resources:
Research, using the Library's print and online resources, to prepare short oral presentations on such topics as the use of plant hormones on industrial agriculture.

B. Are the currently held library resources sufficient to support the course assignment?

YES: ☒ NO: ☐

If NO, please list additional library resources needed to support this course.

XIII. PREREQUISITE AND/OR COREQUISITE JUSTIFICATION

BOT M01: Not Applicable

XIV. WORKPLACE PREPARATION

BOT M01: Not Applicable

XV. DISTANCE LEARNING COURSE OUTLINE ADDENDUM

BOT M01: Not Applicable

XVI. GENERAL EDUCATION COURSE OUTLINE ADDENDUM

General Education Division of Learning [check all applicable boxes]:

☒ Natural Sciences

☒ Biological Science

☐ Physical Science

☐ Social and Behavioral Sciences

☐

- ☐ American History/Institutions
- ☐ Other Social Science

☐ Humanities

- ☐ Fine or Performing Arts
- ☐ Other Humanities

☐ Language and Rationality

- ☐ English Composition
- ☐ Communication and Analytical Thinking

☐ Health/Physical Education

☐ Ethnic/Women's Studies

Check either Option 1 or Option 2

☒ **OPTION #1:** Moorpark College has already received approval from the CSU and/or UC systems for this course to fulfill a GE requirement. Note: This option applies only to technical revisions and updated courses.

☐ **OPTION #2:** Moorpark College has not received approval from the CSU and/or UC systems for this course to fulfill a GE requirement. This option applies to all new and substantively revised courses.

XVII. STUDENT MATERIALS FEE ADDENDUM

BOT M01: Not Applicable

XVIII. REPEATABILITY JUSTIFICATION TITLE 5, SECTION 55041

BOT M01: Not Applicable

XIX. CURRICULUM APPROVAL

Course Information:

Discipline: BOTANY

Discipline Code and Number: BOT M01

Course Revision Category: Outline Update

Course Proposed By:

Originating Faculty Ana Barcenas 09/12/2018

Faculty Peer: Paul Kores 09/13/2018

Curriculum Rep: Beth Miller 09/14/2018

Department Chair: Audrey Chen 09/12/2018

Division Dean: Carol Higashida 09/13/2018

Approved By:

Curriculum Chair: Jerry Mansfield 02/08/2019

Executive Vice President: _____

Articulation Officer: Letrisha Mai 02/06/2019

Librarian: Mary LaBarge 02/05/2019

Implementation Term and Year: Fall 2019

Approval Dates:

Approved by Moorpark College Curriculum Committee: 02/19/2019

Approved by Board of Trustees (if applicable): _____

Approved by State (if applicable): 02/27/2019