CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS
COURSE MODIFICATION PROPOSAL
Courses must be submitted by October 15, 2012, and finalized by the end of the fall semester to make the next catalog (2013-14) production

DATE (CHANGE DATE EACH TIME REVISED): FALL 2013; REV 10.31.12; REV 12.11.12
PROGRAM AREA(S) : BIOLOGY
Directions: All of sections of this form must be completed for course modifications. Use YELLOWED areas to enter data. All documents are stand alone sources of course information.

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1. Indicate Changes and Justification for Each. [Mark all change areas that apply and follow with justification. Be as brief as possible but, use as much space as necessary.]

X	Course title	X	Course Content
	Prefix/suffix	X	Course Learning Outcomes
	Course number		References
	Units		GE
	Staffing formula and enrollment limits		Other
	Prerequisites/Co-requisites		Reactivate Course
X	Catalog description		
	Mode of Instruction		

Justification:

TITLE –Title has been revised to more correctly align with a full content plant physiology course (course change from "Molecular Plant Physiology" to "Plant Physiology"; - a title of solely molecular content to a more inclusive and common title inclusive of molecular, cellular, organism and whole plant function.

CONTENT - course content has been expanded to better reflect a full complement of plant physiological areas inclusive of molecular, cellular, organismal to whole plant levels of organization.

CATALOG DESCRIPTION Course description revised to reflect course revision

COURSE LEARNING OUTCOMES – Revised to include organismal and whole plant physiology

2. Course Information.
[Follow accepted catalog format.] (Add additional prefixes i f cross-listed)

OLD	NEW
Prefix BIOL Course# 422	Prefix BIOL Course# 422
Title Molecular Plant Phys Units (4)	Title Plant Physiology Units (4)
3 hours lecture per week	3 hours lecture per week
3 hours lab per week	3 hours lab per week
Prerequisites:	Prerequisites:
CHEM 318 or 400; BIOL 300 with a grade of C or better.	BIOL 300 with a grade of C or better.
Consent of Instructor Required for Enrollment	Consent of Instructor Required for Enrollment
Corequisites:	Corequisites:
Catalog Description (Do not use any symbols):	Catalog Description (Do not use any symbols):
Study of principles and methods of plant physiology at the molecular level combined with modern plant technology. Topics include plant tissue and cell culture, genetic engineering and transformation, plant defense, genomics and applications of DNA technology. A lab fee is required.	This course is an introduction to the physiology of plants. Topics include plant biochemical, molecular, and cellular processes, as well as organism biology in plants responsible for their growth, development and for their responses to the external environment. A lab fee is required
General Education Categories:	General Education Categories:
Grading Scheme (Select one below):	Grading Scheme (Select one below):
X A – F	X A – F
Credit/No Credit	Credit/No Credit
Optional (Student's Choice)	Optional (Student's Choice)
Repeatable for up to 4 units	Repeatable for up to 4 units
Total Completions	Total Completions

Multiple Enrollment in Same Semester Y/N

Course Level:

X Undergraduate

Post-Baccalaureate

Graduate

Multiple Enrollment in Same Semester Y/N

Course Level:

X Undergraduate

Post-Baccalaureate

Graduate

3. Mode of Instruction (Hours per Unit are defaulted) Hegis Code(s)_____

(Provided by the Dean)

	Existing					Proposed					
	Units	Hours Per Unit	Benchmark Enrollment	Graded		Units	Hours Per Unit	Benchmark Enrollment	Graded	CS No. (filled out by Dean)
Lecture	3	1	24	X	Lecture	3	1	24	X	
Seminar		1			Seminar		1			
Lab	1	3	24	X	Lab	1	3	24	X	
Activity		2			Activity		2			
Field Studies					Field Studies					
Indep Study					Indep Study					
Other blank					Other blank					
Online					Online					

4. Course Attributes:

General Education Categories: All courses with GE category notations (including deletions) must be submitted to the GE website: http://summit.csuci.edu/geapproval. Upon completion, the GE Committee will forward your documents to the Curriculum Committee for further processing.

A (English Language, Communication, Critical Thinking)

A-1 Oral Communication

A-2 English Writing

A-3 Critical Thinking

B (Mathematics, Sciences & Technology)

B-1 Physical Sciences

B-2 Life Sciences – Biology

B-3 Mathematics – Mathematics and Applications

B-4 Computers and Information Technology

C (Fine Arts, Literature, Languages & Cultures)

C-1 Art

C-2 Literature Courses

C-3a Language

C-3b Multicultural

D (Social Perspectives)

E (Human Psychological and Physiological Perspectives)

UDIGE/INTD Interdisciplinary

Meets University Writing Requirement

Meets University Language Requirement

American Institutions, Title V Section 40404: Government US Constitution US History

Refer to website, Exec Order 405, for more information: http://senate.csuci.edu/comm/curriculum/resources.htm

Service Learning Course (Approval from the Center for Community Engagement must be received before you can request this course attribute).

Online Course (Answer YES if the course is ALWAYS delivered online).

5. Justification and Requirements for the Course. [Make a brief statement to justify the need for the course]

OLD
Basic Science required of most biology majors

Requirement for the Major/Minor
X Elective for the Major/Minor
Free Elective

NEW
Course revised to reflect a broader scope of the area

Requirement for the Major/Minor
X Elective for the Major/Minor
Free Elective

Submit Program Modification if this course changes your program.

6. Student Learning Outcomes. (List in numerical order. Please refer to the Curriculum Committee's "Learning Outcomes" guideline for measurable outcomes that reflect elements of Bloom's Taxonomy: http://senate.csuci.edu/comm/curriculum/resources.htm. The committee recommends 4 to 8 student learning outcomes, unless governed by an external agency (e.g., Nursing).

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

1. Explain the process of photosynthesis at the molecular level
2. Describe the structure and function of plant cells
3. Explain growth, development and differentiation in plants
4. Discuss applications of biotechnology to plant research
5. Generate a hypothesis from a set of observations and then design experiments to test the hypothesis

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

1. Demonstrate an understanding of how water moves in plants at both the molecular and organismal levels.
2. Demonstrate an understanding of the biochemical processes of photosynthesis, glycolysis, citric acid cycle, and electron transport.
3. Use simple laboratory skills in scientific measurements.
4. Write a scientific research paper.

7. Course Content in Outline Form. (Be as brief as possible, but use as much space as necessary)

OLD

Gene Expression and Signal Transduction
Plant and Cell Architecture
Water and Plant Cells
Mineral Nutrition
Solute Transport
Photosynthesis
Translocation in the Phloem
Respiration and Lipid Metabolism
Assimilation of Mineral Nutrients
Plant Defenses: Surface Protection and Secondary Metabolites
Gene Expression and Signal Transduction
Cell Walls: Structure, Biogenesis, and Expansion
Growth, Development, and Differentiation
Phytochrome
Blue-Light Responses: Stomatal Movements and Morphogenesis
Genetic engineering and transformation, genomics and applications of DNA technology

NEW

Cells, Tissues and Plant Organs
Gene Expression and Signal Transduction
Photosynthesis: light reactions
CO2 assimilation/photorespiration
C4 photosynthesis
CAM photosynthesis
Phloem structure and function
Water and plant cells
The structure and function of xylem
Evolution of plant water transport
Growth, Development, and Differentiation
Mineral nutrition
Secondary metabolism
Growth and development
Phytochrome/blue light response
Hormones
Physiology of flowering
Plant Defenses
Research lecture
Genetic engineering and transformation, genomics and applications of DNA technology

Does this course content overlap with a course offered in your academic program? Yes No X
If YES, what course(s) and provide a justification of the overlap.

Does this course content overlap a course offered in another academic area? Yes No X

If YES, what course(s) and provide a justification of the overlap.

Overlapping courses require Chairs' signatures.

8. Cross-listed Courses (Please note each prefix in item No. 1) - not applicable

A. List cross-listed courses (Signature of Academic Chair(s) of the other academic area(s) is required).
B. List each cross-listed prefix for the course:
C. Program responsible for staffing:

9. References. [Provide 3-5 references]

OLD

Buchanan, B., Gruissem, W., and Jones, R.L. Biochemistry and Molecular Biology of Plants. (2002). John Wiley and Sons.

Taiz, L. Plant Physiology, 3rd Edition. (2002). Sinauer.

Salisbury, F. Plant Physiology, 4th edition. (1992). Brooks/Cole Publishing.

NEW

Lincoln Taiz and Eduardo Zeiger. Plant Physiology, 5th Edition. (2012). Sinauer

Journal articles

10. Tenure Track Faculty qualified to teach this course.
Dawn Neuman and other Biology faculty

11. Requested Effective Date or First Semester offered: Fall 2013

12. New Resource Requested: Yes No X
If YES, list the resources needed.

A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)
B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)
C. Facility/Space/Transportation Needs:
D. Lab Fee Requested: Yes X No Refer to the Dean's Office for additional processing
E. Other.

13. Will this course modification alter any degree, credential, certificate, or minor in your program? Yes No X
If, YES attach a program update or program modification form for all programs affected.
Priority deadline for New Minors and Programs: October 1, 2012 of preceding year.
Priority deadline for Course Proposals and Modifications: October 15, 2012.
Last day to submit forms to be considered during the current academic year: April 15th.

Dawn Neuman — October 15, 2012

Proposer(s) of Course Modification — Date

Type in name. Signatures will be collected after Curriculum approval.

Approval Sheet

Course: BIOL 422

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
General Education Chair		
	Signature	Date
Center for Intl Affairs Director		
	Signature	Date
Center for Integrative Studies Director		
	Signature	Date
Center for Multicultural Engagement Director		
	Signature	Date
Center for Civic Engagement and Service Learning Director		
	Signature	Date
Curriculum Chair		
	Signature	Date
AVP		
	Signature	Date