

NEW COURSE PROPOSAL

Courses must be submitted by October 15, 2014, and finalized by the end of that fall semester for the next catalog (2015-16) production.

Use YELLOWED areas to enter data.

DATE (*Change if modified and redate file with current date*)

OCTOBER 26, 2014, 12/05/14

PROGRAM AREA(S)

BIOLOGY

1. Course Information. *[Follow accepted catalog format.]*

Prefix(es) (Add additional prefixes if cross-listed) and **Course No.** **BIOL 470**

Title: **Plant Pathology**

Units: 4

X Prerequisites BIOL 300

Corequisites

Consent of Instructor Required for Enrollment

Catalog Description (Do not use any symbols):

Plant pathology is the science of plant diseases, the microorganisms that cause them, and their interactions. The objective of this course is to introduce students to the many plant pathogens, examples of the types of disease they cause, their fundamental biology, and the principles and concepts of their spread, and management. Agriculturally important diseases of crops will be discussed.

Grading Scheme:

X A-F Grades
Credit/No Credit
Optional (Student Choice)

Repeatability:

Repeatable for a maximum of units
Total Completions Allowed
Multiple Enrollment in Same Semester

Course Level Information:

X Undergraduate
X Post-Baccalaureate/Credential
Graduate

Mode of Instruction/Components (*Hours per Unit are determined by CSU policy*).

	Units	Hours per Unit	Default Section Size	Graded Component	CS & HEGIS # (Filled in by the Provost's Office)
Lecture	3	1	24	X	
Seminar		1			
Laboratory	1	3	24		
Activity		2			
Field Studies					
Indep Study					
Other Blank					

Leave the following hours per week areas blank. The hours per week will be filled out for you.

hours lecture per week
hours per week

2. Course Attributes:

General Education Categories: All courses with GE category notations 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.

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 (Graduation Writing Assessment Requirement)

Meets University Language Requirement

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

Regarding 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).

☐ **Lab Fee Request** – Lab fee requests should be directed to the Student Fee Committee.

3. Justification and Requirements for the Course. (Make a brief statement to justify the need for the course)

A. Justification:

Plants are a significant source of the food we eat as well as a major component in the fuel, medicine, energy and environmental industries; plant health is vital to maintaining an established source of food, feed, fiber and industrial products.

B. Degree Requirement:

<input type="checkbox"/>	Requirement for the Major/Minor
X	Elective for the Major/Minor
<input type="checkbox"/>	Free Elective

Note: Submit Program Modification if this course changes your program.

4. 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:

1. Demonstrate knowledge of the living and non-living causal agents that cause plant diseases.
2. Explain the interactions between pathogens and the environmental conditions that initiate plant disease.
3. Describe methods of preventing, managing, or alleviating the damage of plant disease.
4. Demonstrate knowledge of the human activities that result in disease epidemics in crop plants.

5. Course Content in Outline Form. *[Be as brief as possible, but use as much space as necessary]*

Course Content

- 1) Introduction
 - a) Disease Concept and Terminology
 - b) Historically Significant Plant Diseases
 - i) The Irish Potato Famine: The Birth of Plant Pathology *
 - c) Classification of Plant Diseases
- 2) Mechanisms of Pathogenesis
 - a) How Pathogens Attack Plants
 - b) How Plants Defend Against Pathogens
 - i) Coffee and Rubber: Monocultures and Quarantines *
- 3) The Pathogens
 - a) The World Belowground: Soilborne Pathogens *
 - i) Fungi
 - ii) Ascomycetes
 - iii) Basidiomycetes.
 - iv) Rusts And Smuts.
 - v) Ancient and Present Day Foes: The Rusts
 - vi) Oomycetes.
 - vii) Bacteria
 - viii) Viruses
 - ix) Nematodes
 - x) Diseases Caused by Higher Plants
 - xi) Diseases of the Largest Plants: Trees *
- 4) Outside 'Pathology' - Ectoparasites
- 5) Abiotic Diseases
- 6) Epidemiology
 - a) Roles People Play: Epidemics & Their Management *
 - b) Biological
 - c) Statistical
 - d) Agronomic
 - e) Ecological
- 7) Disease Management
 - a) Food for a Hungry Planet *
 - b) Cultural
 - c) Biological
 - d) Chemical
 - e) Transgenic Resistance
 - f) Eradication

*** Writing assignment. From: Schumann G.L., D'Arcy C.J. (2012). Food for a Hungry Planet. APS Press, St Paul, MN.**

Does this course content overlap with a course offered in your academic program? Yes ☐ No ☒

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 ☒

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

Overlapping courses require Chairs' signatures.

6. Cross-listed Courses (Please note each prefix in item No. 1) Beyond three disciplines consult with the Curriculum Committee.

A. List Cross-listed Courses (Signature of Academic Chair(s) of the other academic area(s) is required).

List each cross-listed prefix for the course:

B. Program responsible for staffing:

7. References. [Provide 3 - 5 references. For references more than 10 years old, provide a one-sentence explanation of relevance.]

- 1) Agrios G.N. (2005). *Plant Pathology* (5th ed.). Elsevier Academic Press. Waltham, MA.
- 2) Schumann G.L., D'Arcy C.J. (2009). *Essential Plant Pathology*. APS Press. St Paul, MN.
- 3) Ownley B.H., Trigiano R.N. (2015). *Plant Pathology, Concepts and Laboratory Exercises* (3rd ed). CRC Press. Boca Raton, FL.
- 4) Webster J., Weber R.W.S. (2007). *Introduction to Fungi* (3rd ed.). Cambridge University Press.
- 5) Schumann G.L., D'Arcy C.J. (2012). *Hungry Planet*. APS Press, St Paul, MN.

8. Tenure Track Faculty Qualified to Teach This Course.

Dawn Neuman

9. Requested Effective Date:

First semester to be offered: Fall 2015

10. New Resources Requested. Yes ☐ No ☒

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 ☐ No ☒ (Lab fee requests should be directed to the Student Fee Committee)

E. Other

11. Will this new course alter any degree, credential, certificate, or minor in your program? Yes ☐ No ☒

If, YES attach a program update or program modification form for all programs affected.

Deadline for New Minors and Programs: October 1, 2014.

Priority deadline for Course Proposals and Modifications, and for Program Modifications: October 15, 2014.

Last day to submit forms to be considered during the current academic year: April 1, 2015.

Dawn Neuman

10/7/2014

Proposer of Course (Type in name(s). Signatures will be collected after Curriculum approval) Date

Approval Sheet

Course Prefix and number: BIOL 470

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 International Affairs Director		
	Signature	Date
Center for Integrative Studies Director		
	Signature	Date
Center for Multicultural Engagement Director		
	Signature	Date
Center for Civic Engagement Director		
	Signature	Date
Curriculum Chair		
	Signature	Date
AVP		
	Signature	Date