

# NEW COURSE PROPOSAL

PROGRAM AREA BIOLOGY

- 1. Catalog Description of the Course.** *[Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of \_\_\_ units); time distribution (Lecture \_\_\_ hours, laboratory \_\_\_ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.]*

BIOL 302 GENETICS AND EVOLUTION (4)

Three hours of lecture and one hour of recitation per week.

Prerequisite: CHEM 122; BIOL 201 with a grade of C or better.

Principles of classical transmission genetics, population genetics and evolution, with an introduction to modern molecular genetics.

**2. Mode of Instruction.**

	Units	Hours per Unit	Benchmark Enrollment
Lecture	<u>3</u>	<u>1</u>	<u>30</u>
Seminar	<u>      </u>	<u>      </u>	<u>      </u>
Laboratory	<u>      </u>	<u>      </u>	<u>      </u>
Activity	<u>1</u>	<u>1</u>	<u>30</u>

- 3. Justification and Learning Objectives for the Course.** (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) *[Use as much space as necessary]*

This is a required course for Biology majors designed to introduce students to classical and molecular genetics. In the accompanying recitation students will gain experience with problem solving.

Students that successfully complete this course will be able to:

1. Apply quatitative problem-solving skills to genetics problems and issues.
2. Demonstrate their ability to reason both inductively and deductively with experimental information and data.
3. Describe the chromsome theory, molecular genetics and quantitative and evolutionary genetics.
4. Select and apply experimental procedures to solve genetic problems

- 4. Is this a General Education Course**                      **YES**                      **NO**

**If Yes, indicate GE category:**

<b>A (English Language, Communication, Critical Thinking)</b>	
<b>B (Life Sciences)</b>	
<b>C (Fine Arts, Literature, Languages &amp; Cultures)</b>	
<b>D (Social Perspectives)</b>	
<b>E (Human Psychological and Physiological Perspectives)</b>	

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

The scientific method  
Mendelian genetics  
transmission of genetic material  
linkage and mapping in prokaryotes  
linkage and mapping in eukaryotes  
cytogenetics  
sex determination and pedigree analysis  
quantitative inheritance  
population genetics-the Hardy-Weinberg Equilibrium  
evolution and speciation

molecular genetics

**6. References.** *[Provide 3 - 5 references on which this course is based and/or support it.]*

*Genetics, Analysis of Genes and Genomes* Fifth Edition D. L. Hartl and E. W. Jones, Jones and Bartlett Publishers, Sudbury, MA ISBN 0-7637-0913-1

*Essentials of Genetics* P. J. Russell, ISBN 0-8053-4697-X

*Essentials of Genetics* W. S. Klug and M. R. Cummings, Prentice Hall, ISBN 0-13-080017-1

*Principles of Genetics* R. H. Tamarin, McGraw Hill, ISBN 0-07-233419-3

**7. List Faculty Qualified to Teach This Course.**

Biology faculty

## 8. Frequency.

a. Projected semesters to be offered: Fall   x   Spring        Summer       

## 9. New Resources Required.

- Computer (data processing), audio visual, broadcasting needs, other equipment
- Library needs
- Facility/space needs

## 10. Consultation.

Attach consultation sheet from all program areas, Library, and others (if necessary)

**11. If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.**

\_\_\_\_Nancy Mozingo\_\_\_\_6 January 2003\_\_\_\_  
Proposer of CourseDate