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.

<table>
<thead>
<tr>
<th>Units</th>
<th>Hours per Unit</th>
<th>Benchmark Enrollment</th>
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</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Seminar</td>
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<td>Laboratory</td>
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<tr>
<td>Activity</td>
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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 quantitative 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 chromosome 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:

- A (English Language, Communication, Critical Thinking)
- B (Life Sciences)
- C (Fine Arts, Literature, Languages & Cultures)
- D (Social Perspectives)
- E (Human Psychological and Physiological Perspectives)

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.]


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.**
   a. Computer (data processing), audio visual, broadcasting needs, other equipment
   b. Library needs
   c. 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 Course                   Date