Please fill in all information. Required signatures are on page two of this form. Please return to:
Academic Affairs Committee, Office of the Provost, Anderson Hall, 2nd Floor.

Contact Person: JEFF KURMEISTER Phone: 946-2470

Date: 4/14/03 School or College: ENGINEERING Department: MECHANICAL

Proposed Course #: 3060103 Title: BIOMATERIALS

Units: 4 Enrollment/Expected Enrollment: 15-20 Grade Option: A-F

Prerequisites: ENGR 45, BIOL 601, OR PERMISSION BY INSTRUCTOR

Catalog description: This course will discuss biomaterials and lay the groundwork for topics such as mechanical, chemical, and thermal properties of replacement materials and tissues. Implantation of materials in the body will be studied from the biological point of view.

Please attach a syllabus.

What are the reasons for the new course (e.g., student needs, major, etc.): The Bioengineering Program began in 2001. To date, the curriculum is supported by other departments. This would be the first bioengineering course primarily designed for bioengineers. Many would consider "biomaterials" to be a bioengineering staple course that is necessary for all three emphasis areas of our program—biomedical, electrical & mechanical.

If approved, when will this be implemented? FALL 2004

What is the anticipated impact on resources (e.g., Faculty, funds, library materials etc.): Existing Bioengineering Faculty can cover the course using existing funds, facilities, and library materials.

Describe any special facilities, furnishings, or technology needs. List software needs, if any.
Computer labs maintained by the School of Engineering and Computer Science will be utilized.
Please obtain all signatures before submitting to Academic Affairs Committee. Please acquire signatures in the order in which they are listed below.

1. Action by department requesting addition/change:
   Approved by: [Signature] Date: 9/18/03

2. Action by the Curriculum and/or Graduate Studies Committee of the School/College:
   Approved by: [Signature] Date: 9/18/03

3. Action by the Dean of the School/College:
   Approved by: [Signature] Date: 9/15/03

4. Action by the General Education Committee (as appropriate):
   Approved by: [Signature] Date:

5. Action by the Dean of the Library:
   Approved by: [Signature] Date: 10/9/03

6. Action by the Director of Educational Technology Services (if computer lab needed):
   Approved by: [Signature] Date:

7. Action by the Graduate Studies Committee (as appropriate):
   Approved by: [Signature] Date:

8. Action by the Registrar (to check course numbers, etc.):
   Approved by: [Signature] Date: 9/26/03

9. Action by the Academic Affairs Committee:
   Approved by: [Signature] Date:

After approval by the Academic Affairs Committee, information regarding new, revised, or deleted courses is sent to the Registrar for listing in or modifying the catalog.

Form revised 9/4/03
Catalog description:
This course will discuss biomaterials and lay the groundwork for topics such as mechanical, chemical, and thermal properties of replacement materials and tissues. Implantation of materials in the body will be studied from the biological point of view.

What are the reasons for the new course (e.g., student needs, major, etc.)?
The Bioengineering Program began in 2001. To date, the curriculum is supported by other departments. This would be the first bioengineering course primarily designed for bioengineers. Many would consider “biomaterials” to be a bioengineering staple course that is necessary for all three emphasis areas of our program – biomedical, electrical and mechanical.

What is the anticipated impact on resources (e.g., Faculty, funds, facilities, library materials, etc.)?
Existing Bioengineering Faculty can cover the course using existing funds, facilities, and library materials.

Will university computer labs be needed? If so, what software will be needed?
Computer labs maintained by the School of Engineering and Computer Science will be utilized.
Proposed Syllabus – BENG 103 – Biomaterials – 6/24/03

Fall Semester, Tuesday & Thursday

Three Exams. One Final
Weekly Homework Assignments
Project

Typical number of class sessions per semester 31 plus the final exam period.
(If three exams are given during the semester along with a project presentation, then the total number of class sessions available for lecture or recitation is approximately 27.)

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<thead>
<tr>
<th>Approx. No. of Classes</th>
<th>Topic</th>
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<tbody>
<tr>
<td>3</td>
<td>Review of Material Science – metals, polymers, ceramics, composites</td>
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<tr>
<td>1</td>
<td>Biomaterials Introduction and History</td>
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<td>2</td>
<td>Surface Properties</td>
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<td>5</td>
<td>Proteins, Cells and Tissues</td>
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<td>Biosensors</td>
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