To be adopted:

Proposed Change in B.S. Degree in Mechanical Engineering

Present

Lower-division requirements (76 units)

a. Biological Science elective
b. CHEM 001A, CHEM 001B, CHEM 001C
c. CS 040
d. EE 001A, EE 001LA
e. MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046
f. ME 007, ME 009, ME 010, ME 014
g. PHYS 040A, PHYS 040B, PHYS 040C

Upper-division requirements (81 units)

1. ENGR 118
2. ME 100A, ME 100B, ME 103, ME 110, ME 115A, ME 115B, ME 116A, ME 120, ME 121, ME 130, ME 170A, ME 170B, ME 175A, ME 175B, ME 175C
3. STAT 40 or STAT 155
4. Technical electives (16 units); four courses, selected from the following list, in consultation with an advisor:
   ME 116B, ME 117, ME 122, ME 131, ME 133, ME 136, ME 137, ME 153

Proposed

Lower-division requirements (72 units)

a. BIOL 003, BIOL 005A, BIOL 05LA
b. CHEM 001A, CHEM 001B
c. EE 001A, EE 001LA
d. MATH 009A, MATH 009B, MATH 009C, MATH 010A, MATH 010B, MATH 046
e. ME 001A, ME 001B, ME 001C, ME 009, ME 010, ME 018
f. PHYS 040A, PHYS 040B, PHYS 040C

Upper-division requirements (85 units)

1. ME 100A, ME 100B, ME 103, ME 110, ME 114, ME 115A, ME 115B, ME 116A, ME 118, ME 120, ME 121, ME 130, ME 170A, ME 170B, ME 175A, ME 175B, ME 175C
2. STAT 100A
3. Technical electives (16 units); four courses, selected from the following list, in consultation with an advisor:
   ME 116B, ME 117, ME 122, ME 131, ME 133, ME 136, ME 138, ME 139, ME 153, ME 156

Justification:

1) The biology requirement is being strengthened to improve the balance of background required to work in the multidisciplinary environment of modern mechanical engineering. CHEM 1A and 1B provide sufficient foundation to proceed with further study in chemical aspects of ME, as required. To contribute to this balance and to minimize the unit impact, CHEM 1C is being removed.
2) Structured programming, CS 10, has been removed in favor of more discipline appropriate (MATLAB) preparation to be provided in ME 1C and ME 18.

3) ME 1A, 1B and 1C are a sequence of three introductory courses offered in the freshman year. These courses are designed to introduce students to ME and incorporate ME faculty during the student’s first year.

4) ME 7 has been removed due to the impracticality of providing hands-on training to the growing undergraduate population. Students will receive demonstrations in their ME 1B course instead.

5) ME 18 has been created to provide computational skills necessary for the ME 118 course, which replaces ENGR 118 in the ME curriculum. Programming skills will be required for, and not provided in ME 118.

6) ME 14 has been unable to provide adequate understanding of Materials Science because of the limited background of students at this stage. In view of the importance of this subject, the course will be taken when the students have the curricular maturity to understand more advanced material. ME 114 will also offer a broader depth of material.

7) Evidence suggests that STAT 155 may be too narrow in focus data analysis, while STAT 40 is too basic. STAT 100A provides a more comprehensive foundation in the practice of statistics. By taking STAT 100A in the second year, students will be prepared for the computational analysis taught in ME 118.

8) ME 138 and ME 156 are new technical electives.

**Effective**: Fall 2004

**Approvals**:
- College of Engineering Executive Committee: April 7, 2004
- Committee on Educational Policy: May 4, 2004