EXECUTIVE COMMITTEE
COLLEGE OF ENGINEERING

REPORT TO THE RIVERSIDE DIVISION
February 3, 2000

To be adopted:

Proposed Change in B.S. Degree
Mechanical Engineering

Present

Course Requirements:
A) UCR Breadth Requirements for the B.S. Degree: [36 units, excluding A) 4), below]
   1) English 1A-1B-1C
   2) Humanities
   3) Social Sciences
   4) Natural Sciences and Mathematics [20 units, met with items B) 1), 2), 6), below]

B) Lower Division Requirements: [75 units]
   1) Biological Science Elective
   2) Chemistry 1A-1B-1C
   3) Computer Science 10
   4) Electrical Engineering 1A, 1AL
   5) Mathematics 9A-9B-9C
   6) Mathematics 10A-10B
   7) Mathematics 46
   8) Mechanical Engineering 9
   9) Mechanical Engineering 10
  10) Mechanical Engineering 14
  11) Physics 40A-40B-40C

C) Upper Division Requirements: [81 units]
   1) Electrical Engineering 132
   2) Engineering 100
   3) Engineering 115
   4) Engineering 116
   5) Engineering 118
   6) Mechanical Engineering 103
   7) Mechanical Engineering 110
   8) Mechanical Engineering 115
   9) Mechanical Engineering 120
  10) Mechanical Engineering 130
  11) Mechanical Engineering 131
  12) Mechanical Engineering 153
  13) Mechanical Engineering 160
  14) Mechanical Engineering 170
  15) Statistics 155
  16) Technical Electives (42 units); three courses, selected from the following list, in consultation with an adviser

Proposed

Course Requirements:
A) [no change]

B) Lower Division Requirements: [76 units]
   1) Biological Science Elective
   2) Chemistry 1A-1B-1C
   3) Computer Science 10
   4) Electrical Engineering 1A, 1LA
   5) Mathematics 9A-9B-9C
   6) Mathematics 10A-10B
   7) Mathematics 46
   8) Mechanical Engineering 9
   9) Mechanical Engineering 10
  10) Mechanical Engineering 14
  11) Physics 40A-40B-40C

C) Upper Division Requirements: [81 units]
   1) Electrical Engineering 132
   2) Engineering 100
   3) Engineering 115
   4) Engineering 116
   5) Engineering 118
   6) Mechanical Engineering 100
   7) Mechanical Engineering 103
   8) Mechanical Engineering 110
   9) Mechanical Engineering 115
  10) Mechanical Engineering 120
  11) Mechanical Engineering 130
  12) Mechanical Engineering 170B
  13) Mechanical Engineering 170A
  14) Mechanical Engineering 175A-175B
  15) Statistics 155
  16) Technical Electives (16 Units); 4 courses, selected from the following list, in consultation with an adviser
The revised curriculum is designed to accomplish the following objectives:

1. It reduces the engineering units taken in fall of the junior year from 16 to 12. ME 110 (Mechanics of Materials) has been moved from the fall to winter, and ME 120 (Dynamic Systems) has been moved from winter to spring. This load reduction will help students in making the transition from the sophomore to the junior year.

2. It helps in the retention of ME students by introducing them to hands-on mechanical engineering in ME 7. This 1 unit fabrication course will free up time in ME 175A, which now teaches the machine shop techniques required for design.

3. ME 100 (Mechanical Engineering Thermodynamics) becomes a required course, and ME 131 (Computer-Aided Design of Mechanical Systems) and ME 153 (Applied Finite Element Methods) have been converted into electives. This conversion balances the mechanical engineering curriculum with six required mechanics courses (ME 10, ME 14, ME 103, ME 110, ME 120, and ME 130) and five required thermal courses (ENGR 100, ENGR 115, ENGR 116, ME 100, and ME 115). The current mechanical engineering curriculum is clearly unbalanced with eight required mechanics courses and only four required thermal courses.

4. ENGR 100 (Engineering Thermodynamics) will precede ENGR 115 (Introductory Fluid Mechanics). This change will allow the use of thermodynamic concepts in the fluid mechanics class.

5. The laboratory courses, ME 170 and ME 160, have been re-numbered to ME 170 A and ME 170B to indicate that these courses are taken sequentially.

6. ME 133, a new course in Mechatronics, has been introduced as an elective. Because the subject is an important component of current mechanical engineering practice, we plan to transfer the course to the core curriculum after a 1-year trial period.

7. The names, contents, and pre-requisites of several courses—ME 100, ME 103, ME 115, ME 120, ME 131, ME 153, ME 175A, ME 175B—have been modified. Justifications are provided in the individual course forms.

Approved by the Mechanical Engineering Faculty on 11/29/99
Approved by the Executive Committee, College of Engineering on 12/3/99
Approved by the Committee on Educational Policy on ____________