

**ME 360A Computer Applications**  
**Fall 2001**

**1999-2000 Catalog Data:** Computer Applications. Credits -3. An introduction to the essential computer tools necessary for the mechanical engineering curriculum. Basic word processing and spreadsheet skills, C programming language as applied to mechanical engineering problems will be covered. Fundamentals of linear algebra and other computational tools will be taught. *Prerequisites:* Math 243(Calculus II).

**Textbook:** Engineering Programming – C, Matlab, Java - by Austin and Chancogne, John Wiley & Sons, ISBN: 0-471-00116-3.

**Instructor:** V.Srinivasa Murthy, Department of Mechanical Engineering. Room: 101G,  
Office Hours: as posted.

**Grader:** Prashant Chillamcharla, Department of Mechanical Engineering. Room: 101H.

**Coordinator:** Dr. T.S Ravi Gururajan, Department of Mechanical Engineering.

**Goals:** This course is designed to teach the students skills necessary for numerically solving problems in mechanical engineering courses. The student will be able to write efficient computer programs in one or more contemporary languages and prepare laboratory reports in a professional manner.

**Topics:** (each class is 50 minutes):

1. Introduction to computer hardware and software systems. (1)
2. Word processing skills and spreadsheet skills (2)
3. **C:** Data types, basic I/O statements in C (2)
4. Repetitive techniques (2)
5. Introduction to functions (2)
6. Arrays and pointers (2)
7. Fundamentals of linear algebra and array applications using Matlab (4)
8. Structures and Strings (2)
9. **Java** Object-Oriented programming concepts. (2)
10. Classes, constructors, and methods. (6)
11. Exams. (3)

**Estimated ABET Category Content:**

Engineering Science: 3 credits or 100%

Engineering Design: 0 credits.

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**Homework**: A number of programming assignments will be assigned throughout the semester that will be turned in at the Instructor's request. The students are expected to try the home work problems on their own.

**Other information:**

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|----------------------------------------------------------------|------|
| Three tests (15 x 3: <b><i>Sep. 28 , Nov. 2, Dec. 14</i></b> ) | = 45 |
| Programming assignments                                        | = 50 |
| Final programming assignment (Due on Wed. Dec 10)              | = 5  |

**Grades:** A  $\geq 90\%$ ; B  $\geq 80\%$ ; C  $\geq 70\%$ ; D  $\geq 55\%$ ; F  $< 55\%$ .

**NOTE:** Last date to drop with a 'W' is October 30, 2001

**For Your Information:**

1. All exams are close book and closed notes.
2. No make-up test will be given.
3. Daily attendance is strongly encouraged. You will be responsible for obtaining any class notes, assignments, handouts, and/or announcements from your friends.
4. All programming assignments will be due as specified – no exceptions, however, the lowest two scores will be dropped.
5. During tests, seat assignments will be at the instructor's discretion.
6. If cheating is established in a test, the student will receive an 'F' and further action would be taken by the mechanical engineering department.