I. Catalog Description and Credit Hours of Course: This is a course involving all of the students previous coursework in an interdisciplinary format. The course will cover the use of Mathematics, Physics, Product Design, Management, Materials, and Processes, to solve common industrial problems. 3 credit hours

II. Prerequisites: Senior Status plus classes in: MN 204, MN 319, IM 211 IM 311, PH 120, TG 126, MA 133, and MA 134 or consent of instructor. Computer and Calculator Skills are required.

III. Purposes or Objectives of the Course: Upon the successful completion of the course, the student will be able to:

A. To use the fundamental concepts, terms, tools, and practices of Manufacturing Technologists.
B. To find solutions to various manufacturing problems.
C. To use various software to handle varying tasks.
D. To use spreadsheets and calculators as required to solve math related problems.
E. To correctly answer questions about various manufacturing topics.

IV. Expectations of Students:

A. Read all assignments in the textbook and ATTEND CLASS.
B. Complete all assigned exercises ON TIME.
C. Keep an organized portfolio of work.
D. Graduate Students will complete extra work of an advanced nature.

V. Course Content or Outline (Week Number):

A. Introduction and Calculators (1)
B. Calculators (2)
C. Calculators and Spreadsheets (3)

D. Math (4)

E. Statistics (5)

F. Vectors (6)

G. Physics of light, sound, electricity (7)

H. Statics (8)

I. Strength of materials (9)

J. Fluids (10)

K. Drawings (11)

L. Tolerances (12)

M. Quality and SPC (13)

N. Engineering Economics (14)

O. Safety (15)

P. Materials (16)

Q. Processes (17)

R. Management (18)

S. Simulation, JIT, MRP, Programing (18)

VI. Textbook and Other Required Materials or Equipment:

A. Textbooks:
   1. Machinery’s Handbook, 26th edition, NOT in bookstore
   2. SME CMT Fundamentals of Manufacturing, NOT in bookstore

B. All students are required to take the SME CMT exam to get credit for this class. The cost is $45. The $45 will be refunded upon successfully passing the test at the 60% level. I will make arrangements for you to take the exam and the course materials will assist you in passing it. NOT in bookstore (REFUNDED if Passed)
C. Calculator with equation storage and solver functions, HP 48 series preferred but not required. You must have the instruction manuals for whatever type of calculator you use.

VII. **Basis for Student Evaluation:** The students may take the class through two grading options. One option consists of the normal test, homework, and in class grading cycle. In this option the student receives the average of the grades attained on typical assignments. The second grading option is to pass the SME CMT test. All students who pass this difficult exam will receive an “A” grade. Grades are based on the following point system: 

\[ A = 90\%+; \ B = 80\%+; \ C = 70\%+; \ D = 60\%+ \]

I do give some “F”s every semester in nearly all my classes. If you are absent, you receive a zero for that day. Grades are posted under a Code Number every 3 weeks. It is your responsibility to notify me within 2 weeks of posting if a grade is incorrect. Some assignments are to be completed in class, not at home. **LATE WORK IS NOT ACCEPTED!!** It is worth zero points.

VIII. **ADA:** Anyone with a disability needs to see me so that possible accomodations can be made in order to maximize the learning process. In fairness to the other students I do not extend test times for individuals nor accept late work from individuals since I have **doubled** the amount of time necessary for the tasks involved for everyone.