

**ME171**  
**Computer-Aided Engineering Design**  
**Spring Term, 2001**  
**Books**

**Required Texts:**

None.

**Recommended Texts:**

(Available at the Bookstore, 10 Copies each)

Michael E. Mortenson,  
*Geometric Modelling*,  
John Wiley & Sons, 2nd edition (January 1997),  
ISBN: 0-471-12957-7.  
Amazon.com Price: \$74.99, Usually ships within 24 hours.

William Schroeder, Ken Martin, William E. Lorensen,  
*The Visualization Toolkit*,  
Prentice Hall Computer Books; 2nd edition Book&CDROM (December 1997) 672 pages  
ISBN: 0139546944.  
Amazon.com Price: \$48.96, Usually ships within 24 hours.

James D. Foley, Andries van Dam, Steven K. Feiner, John F. Hughes, Richard L. Phillips,  
*Computer Graphics : Principles and Practice, Second Edition in C*  
Addison-Wesley, 2nd edition, 1,175 pages,  
ISBN: 0-201-84840-6.  
Amazon. Price: \$69.95, Usually ships within 24 hours.

**Additional Reading on Modelling:**

Faux, I.D., and Pratt, M.J., *Computational Geometry for Design and Manufacture*,  
Ellis Horwood, Halsted Press, John Wiley, 1979,  
ISBN: 0-470-27069-1.

Lancaster, P., and Salkauskas, K., *Curve and Surface Fitting, An Introduction*,  
Academic Press, 1986,  
ISBN: 0-12-436060-2.

Woodwark, J., *Computing Shape*,  
Butterworths, 1986,  
ISBN: 0-408-01402-4.

de Boor, C., *A Practical Guide to Splines*,  
Applied Mathematical Sciences, Number 27, Springer-Verlag, 1978,  
ISBN: 0-387-90356-9.

Preparata, F.P., and Shamos, M.I., *Computational Geometry, An Introduction*,  
Springer-Verlag, 1985,  
ISBN: 0-387-96131-3.

**Additional Reading on Engineering Design:**

Shigley, Joseph E., and Mischke, Charles R. *Mechanical Engineering Design*, 5th edition, 779  
pages, McGraw-Hill, 1989,  
ISBN: 0-07-056899-5.

Pahl, G., and Beitz, W., *Engineering Design: A Systematic Approach*,  
Ken Wallace and Lucienne Blessing, Translators  
2nd edition, Springer-Verlag, 1996,  
ISBN: 3540199179.

McKim, Robert H., *Thinking Visually: A Strategy Manual for Problem Solving*,  
Dale Seymour Publications, 1997  
ISBN: 0866514236.

**Additional Reading on Introductory Kinematics:**

Martin, George H., *Kinematics and Dynamics of Machines*, 2nd edition, 492 pages, McGraw-Hill,  
1982,  
ISBN: 0-07-040657-X.

**Additional Reading on Computer Graphics:**

Newman, W.M., and Sproul, R.F., *Principles of Interactive Computer Graphics*,  
Second Edition, McGraw-Hill, 1979,  
ISBN: 0-07-046338-7.

Bresenham, J.E., Earnshaw, R.A., and Pitteway, M.L.V.,  
*Fundamental Algorithms for Computer Graphics*,  
NATO ASI Series F: Computer Systems and Sciences, Volume 17, Springer-Verlag, 1985,  
ISBN: 3-540-13920-6.

**Additional Reading on Optimization:**

Papalambros, P.Y., and Wilde, D.J.,  
*Principles of Optimal Design, Modelling and Computation*, Cambridge University Press,  
1988,  
ISBN: 0-521-30674-4.

Adby, P.R., and Dempster, M.A.H., *Introduction to Optimization Methods*,  
Chapman and Hall, New York, 1974,  
ISBN: 0-412-11040-7.  
(I am told that this is out of print.)

Arora, J.S., *Introduction to Optimum Design*,  
McGraw Hill, 1989,  
ISBN: 0-07-002460-X.

Reklaitis, G.V., Ravindran, A., and Ragsdell, K.M.,  
*Engineering Optimization, Methods and Applications*,  
Wiley-Interscience, 1983,  
ISBN: 0-471-055-79-4.

**Additional Reading on Numerical Methods:**

Carnahan, B., Luther, H.A., and Wilkes, J.O., *Applied Numerical Methods*,  
John Wiley and Sons, 1969.