MAE 482/582 COMPOSITE MATERIALS **Fall 2004**
Description of Project **R.C. Wetherhold**

Graduate Students: As described in the syllabus, you will do a project this semester. The topic can be any aspect of composites: design, testing, theory, fabrication, etc. Just ask me for approval on the topic no later than 10/15/2004, and proceed. This is intended to represent about 20-40 hours work on your part; involving more than one source. **Please feel free to ask me questions about content or presentation during the semester.**

You will submit the project as a standard termpaper by 12/6/2004. I may ask you to briefly meet with me to review any questions I might have. There are no group reports; group efforts are not permitted. The lecture should be self-contained; that is, it should explain any concepts not already familiar to the class.

REFERENCES:
1) Books on SEL reserve
2) Specialty journals: Compos, J Compos Mat, Compos Struct, J Reinf Plast Compos, Polym Compos, ASTM J Compos, Int J Cement Compos Light Weight Concr...,
3) General journals: J Appl Mech, J Mat Sci, Mat Sci Eng A, J Am Cer Soc, Acta Metall Mater, J Mech Phys Sol., SAMPE Q,...
4) Delaware Composites Design Encyclopedia (6 Volumes!) TA418.9.C6 D42 1989.
5) Comprehensive Composite Materials (6 volumes) TA418.9.C6 C6344 2000
6) Your teacher.

Some interesting web sites (all http://):

www.cfa-hq.org	general information about composites fabricators
autocomposites.org	general information about thermoset composites
www.owenscorning.com/	see "Composite Solutions" Owens-Corning homepage
www.ccm.udel.edu/Techsite/	Univ of Del CCM homepage
www.compcompmat.com/mrw4/show/	Comprehensive Composite Materials, 6 volume set from Elsevier Pub; available through Science Direct (?)

Some recent projects have been: smart composites, constitutive relations of CMC's, hole drilling in composites, ultrasonic testing, energy absorption of PMC's under ballistic impact, glass mat/thermoplastic manufacturing using paper making technology, impact characteristics of glass fiber composites with respect to fiber volume fraction, radiographic NDE, carbon fiber composites in automobiles, effect of solvent and reinforcement on moisture absorption in epoxy composites, optimization of composite laminates;