CEE 672
Design of Particulate Control Systems

Catalog data:	20-CEE-672. Design of Particulate Control System. 3 ug./gr. cr. Modern aerosol measurement technologies and the design, operation and performance principles of particulate control devices, which have been implemented in various industrial applications, such as cyclones, filters, scrubbers, and electrostatic precipitators.
Prerequisites:	20-CEE-671. Aerosol Science and Engineering or permission of the instructor.
Textbook:	Cooper, C. D. and Alley, F. C., *Air Pollution Control: A Design Approach*, Second Edition, Waveland Press, ISBN 0-88133-758-7, 1994.
References:	1. Licht, W., *Air Pollution Control Engineering*, 2nd Edition, Marcel Dekker, New York, 1988. 2. Noll, K., *Fundamentals of Air Quality Systems*, American Academy of Environmental Engineers, 1999. 3. Selected journal publications
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Goals:	Modern aerosol measurement technologies and the design, operation and performance principals of particulate control devices, which have been implemented in various industrial applications, such as cyclones, filters, scrubbers, and electrostatic precipitators.
Lecture or lab topics:	1. Overview, modern aerosol measurements 2. Selection of control systems 3. Centrifugal collectors: cyclones 4. Electrostatic precipitators (the charging mechanism, wet & dry ESPs) 5. Midterm 6. Filtration (mechanisms and design) 7. Scrubbers 8. Case study of a PM control system 9. Student presentations
Computer usage:	Spreadsheets
ABET criterion 3:	a, c, e, g, j, k
ABET criterion 8:	a, b, e, f
Date prepared:	December 12, 2002 Last Update April 25, 2007