

Course Information	
Course title	Topics on Particulate Technology
Semester	105-2
Department	DEPARTMENT OF CHEMICAL ENGINEERING
Instructor	Jeffrey D. Ward
Administrative Curriculum Number	ChemE5057
Teaching Curriculum Number	524 U0210
Class	
Credits	3
Full/Half Yr.	Half
Required/Elective	Elective
Time	Monday7 Wednesday89
place	
Remarks	Prof Jeff Ward use English to teach class. number limit of the student : 50
Ceiba Web Server	http://ceiba.ntu.edu.tw/1052ChemE_Particle
Table of Core Capabilities and Curriculum Planning	
Course Syllabus	
Course Description	<p>This course will cover topics in particle technology, with an emphasis on the design and modeling of equipment for particle manufacture, separation and handling. We discuss the crystalline state of matter, crystal size distributions, crystal nucleation and growth, design of crystallizers and filters, fluidization, slurry transport, particle mixing and segregation, particle size reduction and enlargement, health effects of fine powders and fire and explosion risks of fine powders. Students will also work together to complete a design project using Aspen Plus to model a process with solids processing steps.</p> <p>Several homework assignments will be given over the</p>

	<p>course of the semester. Exams will be open-notes. Grades will be determined approximately as follows:</p> <p>Homework 20% Semester Project 30% Mid-term exam 20% Final exam 30%</p> <p>References: Mersmann, A. (2001). Crystallization technology handbook. New York, Marcel Dekker. Mullin, J. W. (1993). Crystallization. Oxford ; Boston, Butterworth-Heinemann. Myerson, A. S. (2002). Handbook of industrial crystallization. Boston, Butterworth-Heinemann. Randolph, A. D. and M. A. Larson (1988). Theory of particulate processes: analysis and techniques of continuous crystallization. San Diego, Academic Press. Rhodes, M. J. (2008). Introduction to particle technology. Chichester, England ; Hoboken, NJ, Wiley.</p>
Course Objective	
Course Requirement	This class is suitable for senior undergraduate or graduate students in chemical engineering or a related field.
Office Hours	
References	
Designated reading	
week	date
Topic of the unit	