



ENGS 21. Introduction to Engineering

Spring 2008 Design Theme: [Cleantech](#)

Class Time	MWF 11:15 am - 12:20 pm, Tue 12-12:50 pm (X-hour)
Classroom	MB01 MacLean Engineering Sciences Center
Instructors	William Lotko (lead), Peter Robbie
Grade Basis	Project completion including development of a prototype; class participation; 4 written and oral reports – white paper, proposal, progress report, final report

Week 1	Defining the Problem
Wednesday March 26	Course Overview, Objectives and Expectations (Lotko) Introduction to the Engineering Method Due at class time on Friday: Complete MBTI and Group Selection questionnaires in Blackboard Assignments
Thursday March 27 5:30-8:00pm	LAB INITIATION (Attendance required): Thayer School Facilities, Teaching Assistants, Staff Due in class on Friday: Staff answers to selected questions Pizza and refreshments
Friday March 28	Use of Matrices for Design Decisions (Lotko)

Week 2	Solution Strategies Involving Teamwork
Monday March 31	Need Finding and Brainstorming (Robbie) Assignment of project groups Receive lab books
Tuesday April 1 X-Hr 12-12:50p	Segmentation and Design Solutions (Lotko)
Wednesday April 2	Search Techniques: Literature, Markets, Patents (Mark Mounts & Janifer Holt , Feldberg Library)
Friday April 4	Rich Gold's "Seven Patterns of Innovation" (Lotko)

Week 3	Project Development	
Monday April 7	Models, Mock-Ups and 3D Modeling (Robbie)	Add/Drop Deadline
Tuesday April 8	Preproposal: The White Paper (Lotko) Executive Summary of White Paper (1-page maximum) due by noon Upload to Blackboard Digital Dropbox by the deadline	
Wednesday April 9 TBA	Preproposal Presentation to Review Board 3 copies of written preproposal due at noon in your ENGS 21 mailbox in Room 217 (Two bound copies + one 3-hole-punch loose copy)	
Friday April 11	Each group will present its project concept to the class – 5 minutes maximum per group Review Preproposals; View videotapes with TA	
Friday April 11 5:30-8:00p	Thayer School of Engineering, Annual Engineering Exposition and Open House Tours, exhibits, demonstrations by faculty, students, and engineers from local industry Refreshments	

Week 4	Project Proposal	
Monday April 14	Elements of a Competitive Proposal & The Art of Technical Persuasion (Lotko)	
Tuesday April 15	Executive Summary of Proposal (1-page maximum) due by noon Upload to Blackboard Digital Dropbox by the deadline	
Wednesday April 16 TBA	Proposal – Presentation to Review Board 3 copies of written proposal due at noon in your ENGS 21 mailbox in Room 217 (Two bound copies + one 3-hole-punch loose copy)	
Friday April 18	Product Design (Robbie) Review Proposals	Dimensions at Dartmouth

Week 5	Design Development	
Monday April 21	Design and Fabrication: Reality, Virtual Reality, and Harsh Reality (Kevin Baron and staff)	Tech Consultants Assigned
Wednesday April 23	Ⓛ Mandatory Lecture on Safety at Thayer School (Chris Levey) -- unless you have already taken it (e.g., in ENGS 24). Check your status at engineering.dartmouth.edu/safety . The Shop Safety course does not satisfy this undergraduate safety seminar requirement.	
Friday April 25	Project Management (Lotko)	

Week 6	Informed Design
Monday April 28	Sustainable Design (Benoit Cushman-Roisin)
Wednesday April 30	Statistical Methods in Engineering I (Dr. Ron)
Friday May 2	Statistical Methods in Engineering II (Dr. Ron)

Week 7	Progress Report	
Monday May 5	Effective Progress Reports (Lotko)	
Tuesday May 6	Executive Summary of Proposal (1-page maximum) due by noon Upload to Blackboard Digital Dropbox by the deadline	Executive Summaries to Fairbrothers
Wednesday May 7 TBA	Progress Report – Presentation to Review Board 4(!) copies of report due at noon in your ENGS 21 mailbox in Room 217 (Three bound copies + one 3-hole-punch loose copy)	Progress Reports to Mayo
Friday May 9	Intellectual Property and Entrepreneurship (Gregg Fairbrothers D'76, Director of the DEN)	

Week 8	Risk, Product Liability and Ethics
Monday May 12	Risk Management and Product Liability (Gary Mayo , A.B. Gile Inc.)
Wednesday May 14	Ethical Issues in Engineering: What does it mean to be a “professional?” (Lotko) Review Progress Reports; View videotapes with TAs
Friday May 16	Business Planning and Pitching (Gregg Fairbrothers D'76, Director of the DEN)

Week 9	Startup Venture
Monday May 19	Introduction to Engineering Economics: Why Cost is not Price (Lotko)
Wednesday May 21	The Venture Proposal (Lotko)
Friday May 23	<i>No Class</i>

Week 10	Synthesis and Project Completion
Monday May 26	<i>Memorial Day – No Classes</i>
Tuesday May 27 X-Hr 12-12:50p	Questions and Answers on Final Report (Lotko) Executive Summary of Final Report (1-page maximum) due by noon Upload to Blackboard Digital Dropbox by the deadline
Wednesday May 28 TBA	Final Report Presentation to Review Board 3 copies of written report due at noon in your ENGS 21 mailbox in Room 217 (Three bound copies + one 3-hole-punch loose copy)

