

## **ENGR 162X INTRODUCTION TO ENGINEERING**

**Text:** (DL) Engineering Design – A Project-based Introduction, Dym and Little, John Wiley and Sons, Inc., 2004 (ISBN 0-471-25687-0)

(M) The New Way Things Work, David Macauley, Houghton Mifflin (ISBN: 0-395-93847-3)

**Supplementary Texts:** (UE) Product Design and Development, Karl T. Ulrich and Steven D. Eppinger, Library Reserve

**Instructor:** James F. Groves, [jgroves@virginia.edu](mailto:jgroves@virginia.edu)

(M) Mondays - Lecture

(W) Wednesdays - [Team Workshop](#)

(F) Fridays - [Team Presentations](#)

**Table 1: Schedule for Fall 2004**

<b>Date</b>	<b>No.</b>	<b>Topic/Event</b>	<b>Reading Assignment</b>	<b>Deadlines</b>
Sep 1 (W)	1	Introduction to ENGR 162X Conceptual Design Team Assignments (Artifact Assignment)	DL: Ch. 1	
3 (F)	2	What is Engineering? Presentation and Discussion of Design Examples	DL: Ch. 2	
6 (M)	3	Intro to Engineering Challenge Project: Transportation Alternatives in Charlottesville - Problem Background		
8 (W)	4	Problem Definition/ Creativity/ Internal and External Searching	DL: 3.5, 5.2.1, 5.2.2 UE Ch. 6 pp. 115-118	
<b>10 (F)</b>	5	Product Planning & Specifications	DL: 3.2, 3.4, 4.2 UE Chs. 3-5	<b>Artifact Report</b>
13 (M)	6	Concept Generation (Conceptual Design Milestone Assignment)	DL: 5.1, 5.2.4 5.3, 5.4 UE Ch. 6	
<a href="#">15 (W)</a>	<a href="#">7</a>	<a href="#">Team Workshop</a>		
<b>17 (F)</b>	<b>8</b>	<b>Charlottesville Transportation: History, Statistics and State-of- the-Art (Team S) / Discussion</b>		
20 (M)	9	Concept Selection – Screening and Scoring	DL: 5.5, 5.8	
<a href="#">22 (W)</a>	<a href="#">10</a>	<a href="#">Team Workshop</a>		

24 (F)	11	Challenge Concept Presentations		
27 (M)	12	Challenge Concept Presentations/Discussion		Conceptual Design
29 (W)	13	Challenge Concept Selection Problem Decomposition	UE Ch. 6 pp. 112-114	Concept Selection
Oct 1 (F)	14	Engineering Design Team Assignments Way It Works Example/Assignments Technical Drawing	DL: 6.4	
4 (M)	15	Project/Design Management	DL: Ch. 7	
6 (W)	16	Team Workshop		
8 (F)	17	The Way It Works (2-3 teams)		
11 (M)		Reading Holiday		
13 (W)	18	Team Workshop		
15 (F)	19	The Way It Works (2-3 teams)		
18 (M)	20	Overview: Materials and Manufacturing	Handout	
20 (W)	21	Team Workshop		
22 (F)	22	EDT Progress Reports		
25 (M)	23	Review: Open-ended Problem Solving/ Proof-of-Concept	DL: 5.6 UE Ch. 8	Preliminary Design
27 (W)	24	Team Workshop		
29 (F)	25	The Way It Works (2-3 teams)		
Nov 1 (M)	26	Failure in Engineering		
3 (W)	27	Team Workshop		
5 (F)	28	EDT Progress Reports		
8 (M)	29	Ethics/ Design Safety & Product Liability	DL: Ch. 9 Handout	
10 (W)	30	Team Workshop [Reflection]		
12 (F)	31	The Way It Works (2-3 teams)		
15 (M)	32	Product Development and Production/ Economics	DL: Ch. 8 UE Ch. 13	
17 (W)	33	Team Workshop		
19 (F)	34	The Way It Works (2-3 teams)		
22 (M)	35	Effective Communication/ Final Design Report Assignment	DL: 6.1,6.2,6.3	
24 (W)		Thanksgiving Break		
26 (F)		Thanksgiving Break		

29 (M)	36	Team Workshop		
Dec 1 (W)	37	EDT Progress Reports		
3 (F)	38	Possible Prototype Demo		<b>Final Prototype</b>
6 (M)	39	Group Presentations		
8 (W)	40	Group presentations		<b>Final Design Report</b>
10 (F)	41	Postmortem Project Evaluation		