ME 508 – Terminal Ballistics

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Texts: *Explosives Engineering,* Paul W. Cooper, Wiley-VCH, New York, 1996
Armor, Materials and Design, Hazell, Paul J., CRC Press, 2015.

Week	Date	Class Hours (3.0 hours)	Reading Assignment	Reference Pages in notes
1	6/5	Initial Concepts and Nomenclature for Terminal Ballistics	Cooper Chapter 14 Hazell Chapters 1-3	Initial Concepts pp. 1-19 Penetration and Perf. Of Metals pp. 1-15
2	6/12	Penetration and Perforation of Metals	Cooper Chapter 15 Hazell Chapters 4-6	Penetration and Perf. Of Metals pp. 16-56 Ogival projectiles
3	6/19	Penetration and Perforation of Metals by ogival projectiles	Cooper Chapter 16	Penetration and Perf. Of Aluminum pp. 1-23
4	6/26	Penetration and Perforation of Concrete and Soils	Cooper Chapter 17	Penetration and Perf. Of Concrete pp. 1-41 Penetration and Perf. Of Concrete (Carlucci derivation) pp. 1-13
5	7/10	Unsteady Wave Motion Stress waves in solids Hand out Midterm	Cooper Chapter 18	Unsteady Wave Motion pp. 1-35 Stress Waves in Solids pp. 1-48
6	7/17	Rankine-Hugoniot Equations Infinite Shock Pulses	Cooper Chapter 19	Rankine-Hugoniot pp. 1-29
7	7/24	Finite Shock Pulses Rarefaction waves Turn in Midterm	Cooper Chapter 27	Rarefaction Waves pp. 1-24
8	7/31	Fracture with Stress Waves Penetration and Perforation of Solids Detonation Theory	Cooper Chapter 30	Fracture with Stress Waves pp. 1-15 Penetration and Perforation Using Different Warhead Types pp. 1-21 Detonation Theory pp. 1-23
9	8/7	Introduction to Shaped Charges Shaped Charge Jet Formation and Shaped Charge Jet Penetration Composites, Soils and Ceramics	Cooper Chapter 28	Introduction to Shaped Charges pp. 1-20 Shaped Charge Jet Formation and Penetration pp. 1-18
10	8/14	Wound Ballistics etc. Hand out final exam		Wound Ballistics pp. 1-10
11	8/21	Turn in final exam to my desk – no class	None	None
12			None	None

13		backup day	None	None
14			None	None
15				
16				