

CEIE 686/499 Transportation System Security and Safety

Tuesday, 7:20 to 10:00 p.m., Innovation Hall, Room 205

Texts: Luke Ritter, J. Michael Barrett, and Rosalyn Wilson. *Securing Global Transportation Networks*.McGraw-Hill, 2007, 276 pp. **Required**R. DesRoches (ed.), *Hurricane Katrina: Performance of Transportation Systems*, TCLEE, ASCE, Monograph No. 29, August 2006, 62 pp. **Recommended**

<u>Date</u>	<u>Topic</u>	<u>Reading</u>
8/26	Introduction; Agencies Involved in Transportation Security; Asset Management/TSM	F, I, 1, 2
9/2	Risk Assessment and Risk Mitigation Techniques	3, 4, A
9/9	Public Transit	C, D
9/16	Highway Systems	5
9/23	Response to Catastrophes—Lessons Learned	DesRoches
9/30	Hazardous Materials Shipments; Pipelines	
10/7	Community Preparedness and Coordination; Aviation Security	8, 9
10/14	NO CLASS	
10/21	Rail Security; Freight Security; Maritime Systems	6, 7, B
10/28	Transportation Security Education and Training; R&D; Terrorist Threat Modeling	10
11/4	Term Project Presentations	
11/11	Transportation Systems Safety	
11/18	Accident Inspection, Investigation and Analysis; Safety Studies	
11/25	Human Factor Issues for Transportation Safety and Security	
12/2	TBA; Term Papers Due	
12/9	FINAL EXAM DUE	

Weekly Assignments

These will consist of analysis of special topics via review of reports available in the literature.

Term Project

There will be a term project on developing a security plan for a given transportation system.

Term Paper

Prepare an in-depth analysis of a specific topic, to be selected jointly by the student and the instructor. The product will be in the form of a 10 page paper.

Grading

Weekly Assignments	20%
Term Project	25%
Term Paper	20%
Final Exam	25%
Class Participation	<u>10%</u>
	100%

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- | <u>Date</u> | <u>Reference</u> |
|-------------|--|
| 8/26 | <p>Transportation Research Board, <i>Special Report 270, Deterrence, Protection, and Preparation: the New Transportation Security Imperative</i>, Washington, DC, 2002.</p> <p>Department of Homeland Security, <i>National Infrastructure Protection Plan</i>, Washington, DC, 2006.</p> <p>Department of Homeland Security, <i>National Response Framework</i>, Washington, DC, September 2007.</p> |
| 9/2 | <p><i>Recommendations for Bridge and Tunnel Security</i>, FHWA and AASHTO, September 2003
(http://www.fhwa.dot.gov/bridge/security/brptoc.htm).</p> <p><i>A Guide to Physical Security Risk Management for Transportation Management Centers</i>, FHWA-XX-2005-XX, FHWA, USDOT, Washington, DC, March 2005.</p> <p>Ray, James C., Risk Based Prioritization of Terrorist Threat Mitigation Measures on Bridges, Manuscript # BE / 2005 / BE23135, <i>ASCE Bridge Engineering Journal</i>, 2006.</p> <p><i>FEMA 426, Risk Management Series, Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings</i>, Federal Emergency Management Agency, Washington, DC, December 2003.</p> <p><i>FEMA 452, Risk Management Series, Risk Assessment: A How-To Guide to Mitigate Potential Terrorist Attacks Against Buildings</i>, Federal Emergency Management Agency, Washington, DC, January 2005.</p> |
| 9/9 | <p>Federal Transit Administration, <i>Transit Security Design Considerations</i>, USDOT, Washington, DC, May 2005.
http://transit-safety.volpe.dot.gov/security/SecurityInitiatives/DesignConsiderations/default.asp</p> <p><i>TCRP Report 86, Public Transportation Security, Volume 7: Public Transportation Emergency Mobilization and Emergency Operations Guide</i>, Transportation Research Board, Washington, DC, 2005.
www.trb.org/publications/tcrp/tcrp_rpt_86v7.pdf</p> |
| 9/16 | <p><i>NCHRP Report 525, Surface Transportation Security, Volume 4: A Self-Study Course on Terrorism-Related Risk Management of Highway Infrastructure</i>, Transportation Research Board, Washington, DC, 2005
(http://trb.org/news/blurb_detail.asp?id=5002).</p> |
| 9/23 | <p>Department of Homeland Security, <i>National Incident Management System</i>, Washington, DC, March 2004.</p> <p>Transportation Security; Emergency Response and Recovery 2008, <i>Transportation Research Record, Journal of the Transportation Research Board</i>, No. 2041, Washington, DC, 2008.</p> |
| 9/30 | <p>Federal Motor Carrier Safety Administration, <i>Hazardous Material Transportation Safety and Security Field Operational Test (FOT) Final Report – Deployment Team</i>, FHWA-OP-03-XXXX, USDOT, Washington, DC, August 31, 2004. http://www.fmcsa.dot.gov/documents/hazmat/fot/HMFOT-Final-Report.pdf</p> <p>Parfomak, Paul W., <i>Pipeline Security: An Overview of Federal Activities and Current Policy Issues</i>, RL31990, Congressional Research Service, Washington, DC, Feb 2004. http://www.fas.org/sgp/crs/RL31990.pdf</p> |
| 10/7 | <p>DeBlasio, Allan J., et al., <i>Effects of Catastrophic Events on Transportation System Management and Operations: Cross Cutting Study</i>, U.S. Department of Transportation, Volpe National Transportation Systems Center, Cambridge, MA, January 2003.</p> <p><i>The 9/11 Commission Report; Final Report of the National Commission on Terrorist Attacks Upon the United States</i>, Washington, DC, July 2004.</p> |
| 10/21 | <p><i>Homeland Security: Key Cargo Security Programs Can Be Improved</i>, GAO-05-466T, Government Accountability Office, Washington, DC, May 26, 2005. http://www.gao.gov/new.items/d05466t.pdf</p> |

Writing Reference: Beer, David and McMurrey, David, *A Guide to Writing as an Engineer*, 2d ed., Wiley, 2005.