



Department of Electrical & Computer Engineering

**ECE 595-012 - Neurosystems Engineering**  
**Tu Th 9:30 - 10:45**  
**ECE 237**  
**Instructors: Dr. Gerold Yonas and**  
**Prof. Edl Schamiloglu**

**Neurosystems Engineering** is an emerging field at the intersection of Neuroscience, Psychology, and Engineering, and the University of New Mexico is its epicenter.

Basic Readings:

- 1) [http://en.wikipedia.org/wiki/Systems\\_engineering](http://en.wikipedia.org/wiki/Systems_engineering)
- 2) *Opportunities in Neuroscience for Future Army Applications* (National Academies Press, Washington, DC, 2009) – available as a free .pdf download at:  
[http://www.nap.edu/openbook.php?record\\_id=12500&page=R1](http://www.nap.edu/openbook.php?record_id=12500&page=R1)
- 3) [http://www.nap.edu/catalog.php?record\\_id=12177](http://www.nap.edu/catalog.php?record_id=12177)
- 4) <http://www.ece.unm.edu/faculty/edl/NSE/NeuroEng.pdf>

### SPRING 2010 SEMESTER<sup>1</sup>

Date	Lecture # and Title	Lecturer(s)
01/19/10	1. Introduction to Neurosystems Engineering <i>Description of Final Project Requirements</i>	Gerry Yonas (Mind Research Network and UNM)
01/21/10	2. Tools and Techniques in Neuroscience Imaging <sup>2</sup> (view by typing in link below)	Vince Calhoun, UNM and Mind Research Network
01/26/10	3. Tools and Techniques in Neuronal Stimulation	Edl Schamiloglu
01/28/10	4. Tutorial on Feedback Control	Chaouki Abdallah
02/02/10	5. IEEETV and Discussion on Projects	Edl Schamiloglu and Gerry Yonas

<sup>1</sup> **Red entries have not been confirmed.**

<sup>2</sup> Go to <http://mtsmsite.unm.edu/mediasite/Catalog/pages/catalog.aspx?catalogId=21659ac5-a5e2-472c-af31-285c1db6d5e9> and click on January 28, 2009 lecture.



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02/04/10	6. The Practice of Neurosystems Engineering (1)	Michael Weisend, Mind Research Network
02/09/10	7. The Practice of Neurosystems Engineering (2)	Michael Weisend, Mind Research Network
02/11/10	8. Tour of Michael Weisend's Laboratory, 801 University Blvd SE	Michael Weisend, Mind Research Network
02/16/10	9. PTSD I	Pilar Sanjuan, Mind Research Network
02/18/10	10. PTSD II	Pilar Sanjuan, Mind Research Network
02/23/10	11. Tour of Mind Research Network Yale Ave Facility	Vince Calhoun, UNM ECE and MRN
02/25/10	12. Rebroadcast Steven Kornguth's Lecture from 2009	
03/02/10	13. Creativity (I)	Rex Jung, UNM HSC
03/04/10	14. Creativity (II)	Rex Jung, UNM HSC
03/09/10	15. Systems Engineering	Rush D. Robinett III, Sandia National Laboratories
03/11/10	16. Memory and Migraines: Applications of tDCS	Laura Matzen, Sandia National Laboratories
	<b>SPRING BREAK 03/14-03/21</b>	
03/23/10	17. Student Project Overview	Gerry Yonas and Edl Schamiloglu
03/25/10	18. Student Project Overview (cont'd)	Gerry Yonas and Edl Schamiloglu
03/30/10	19. Deception Detection I	Gerry Yonas
04/01/10	20. Deception Detection II	Gerry Yonas
04/06/10	21. Roundtable Discussions with a Neurochemist (come prepared with questions! Pharmaceuticals vs. NIBS)	Chuck Gasparovic, MRN
04/08/10	22. DARPA Panel Discussion at MRN 9:15 AM (This class will be held at MRN North Campus – if you cannot attend please view the video.) You can hang around to watch Eric Wasserman lecture at 11:45 as well. Also, you can come on Friday April 09 to view Lucas Parra's lecture. It will be made available on video in lieu of class on April 20.	Gerry Yonas, Eric Wasserman, Lucas Parra, and Michael Weisend



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04/13/10	23. NIBS (presented on 04/09/10 at MRN North Campus 11:45 AM) You can view the video today. No class. – Watch this video before Thursday's Lecture	Lucas C. Parra, CCNY
04/15/10	24. Epilepsy – Mandatory Attendance	Jeffrey Lewine, MRN
04/20/10	25. Control of Biological Systems (Watch the video of his lecture from April 16)	Mathukumalli Vidyasagar, UT Dallas
04/22/10	26. Gerry Yonas and Edl Schamiloglu available to answer questions.	
04/27/10	27. Sleep	Barry Krakow, Sleep & Human Health Institute
04/29/10	28. Integration of Project Teams	All
05/04/10	29. Student Project Presentations	
05/06/10	30. Student Project Presentations	
	<b>Final Project Reports Due Friday May 14 by Noon</b>	