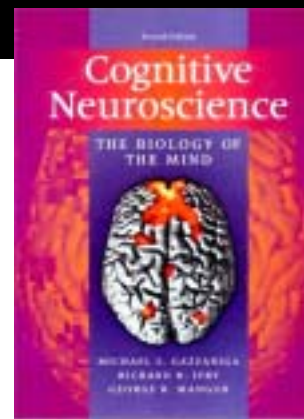


Fall 2003

PSY 362: Cognitive Neuroscience

- Classes:** TUE/THU: 2-3:15pm; LS-111
- Instructor:** Ralph-Axel Müller
- Phone:** (619) 594-5276
- E-mail:** amueller@sciences.sdsu.edu
- Internet:** Syllabus updates, slide files, quizzes etc. will be posted at:
<http://www.sci.sdsu.edu/~amueller/psy362.html>
- Office hours:** By appointment – E-mail, phone, or talk to me after class and we set up a time!
- Office & Lab:** 6363 Alvarado Ct. #225
- Readings:** M.S. Gazzaniga, R.B. Ivry & G.R. Mangun: Cognitive Neuroscience - The Biology of the Mind. 2nd ed.- WW Norton (2002). Available at SDSU Bookstore. Purchase of the book is recommended.
- Major goals:** At the end of this course, you should understand:
- > What the main structures of the brain are and how they participate in sensation, movement, and thinking
 - > How various functions (e.g., vision, attention, memory) differ in their brain organization, and how they interact
 - > How thinking (cognition) and feeling (emotion) are intimately linked in brain function
 - > That the brain always changes, in normal development, with experience, and after injury
- Prerequisites:** Psy 101, 260, Lower-division writing competency
- Grading:** There will be three tests, consisting of questions for short answers and multiple choice. For Tests #1-2 (30% of final grade each), questions and topics will be selected from course material of sessions 1-10 and 11-19, respectively. In Test #3 (final exam; 40% of final grade), topics will be selected from all materials covered throughout the course. A 1-page essay may be submitted for extra credit at the end of the course. Details will be discussed in class.
- Study guides:** Several informal quizzes in the same format as actual tests will serve as study guides in preparation for tests. These quizzes are just for practice and will not affect your grade.
- Changes:** There may be minor changes to the course program, which will be discussed in class.



Date	Topic	Readings*
Tue 2-Sep	1 Introduction & overview	
Thu 4-Sep	2 History of cognitive brain science	Ch. 1
I. Structure and function of the brain		
Tue 9-Sep	3 Functional anatomy I: Cerebral Cortex	Ch. 3: 62-80
Thu 11-Sep	4 Functional anatomy II: Subcortex and cerebellum	Ch. 3: 80-95
II. Techniques of cognitive neuroscience		
Tue 16-Sep	5 Cognitive psychology – Animal techniques – Neurology	Ch. 4: 96-102; 106-123
Thu 18-Sep	6 Convergent methods – Functional imaging	Ch. 4: 123-147
III. Perception and action		
Tue 23-Sep	7 Vision I: Pathways and cortical visual organization	Ch. 5: 148-171
Thu 25-Sep	8 Vision II: Deficits	Ch. 5: 171-185

Tue	30-Sep	9	Higher visual processing I: Two visual streams	Ch. 6: 193-204, 213-223
Thu	2-Oct	10	Higher visual processing II: The agnosias / Test preparation	Ch. 6: 226-243
Tue	7-Oct	11	<i>Test #1</i>	<i>(Topics of sessions 1-10)</i>
Thu	9-Oct	12	Control of action	Ch. 11: 449-452, 476-498
Tue	14-Oct	13	Auditory perception	Ch. 5: 185-192
IV. Cognition				
Thu	16-Oct	14	Attention I: Models – Neural systems	Ch. 7: 244-270
Tue	21-Oct	15	Attention II: Imaging – Disorders	Ch. 7: 270-280, 289-300
Thu	23-Oct	16	Learning and memory I: Cognitive theories - Deficits	Ch. 8: 301-24
Tue	28-Oct	17	Learning and memory II: Animal models – Imaging	Ch. 8: 324-345
Thu	30-Oct	18	Language / Test preparation	Ch. 9: 381-399
Tue	4-Nov	19	<i>Test #2</i>	<i>(Topics of sessions 12-18)</i>
Thu	6-Nov	20	Executive functions I: Working memory – Models of prefrontal cortex	Ch. 12: 499-524
Tue	11-Nov	21	Executive functions II: Goal-oriented behavior	Ch. 12: 524-36
Thu	13-Nov	22	Emotion & social cognition I: Issues and models – Orbitofrontal lobe	Ch. 13: 537-553
Tue	18-Nov	23	Emotion & social cognition II: Amygdala - Laterality	Ch. 13: 553-572
V. Principles of cognitive neuroscience				
Thu	20-Nov	24	Cerebral lateralization	Ch. 10: 400-422
Tue	25-Nov	25	Development & plasticity I	Ch. 15: 611-644
Thu	27-Nov	26	<i>Thanksgiving</i>	
Tue	2-Dec	27	Development & plasticity II	Ch.15: 644-653
Thu	4-Dec	28	General review & preparation for Test #3	
Tue	9-Dec	29	<i>Test #3</i>	<i>(All topics covered in entire course)</i>
Thu	11-Dec	30	Discussion of Test #3	

* All is done to keep reading load manageable (~20-35 pages/week). Feel free to ignore all those special topics boxes in the book.

Please note two workshops on Graduate School for Psychology Majors:

Wednesday, September 17
at 2:00 in Hardy Tower 140
(Presentation 2:00 -3:30, questions to 4:00)

Tuesday, September 23
at 3:30 in GMCS 333
(Presentation 3:30 -5:00, questions to 5:30)