

**NEWSCHOOL OF ARCHITECTURE & DESIGN  
COURSE SYLLABUS**

**SPRING 2007**

- COURSE TITLE/NUMBER:** ARS 352/652 NEUROSCIENCE FOR ARCHITECTS I
- INSTRUCTOR:** Margaret Tarampi, Assoc. AIA                      margaret@tarampi.com
- COURSE DATES:** 02 April 2007 to 15 June 2007
- CREDIT HOURS:** 2 units (upon successful completion of course)
- COURSE LENGTH:** Eleven weeks (10 weeks + finals week)
- COURSE SCHEDULE:** Lecture                      2 hours                      Mondays                      1:00 to 3:00 PM
- REQUIRED TEXTS:** Ratey, J.J. (2001). *A User's Guide to the Brain: Perception, Attention, and the Four Theaters of the Brain*. New York: Vintage Books.
- Additional readings or references will be provided in class.
- ADDITIONAL REFERENCES:** Dublin, M.W. (2002). *How the Brain Works*. Oxford: Blackwell Science.
- Society for Neuroscience. (2002). *Brain Facts: A Primer on the Brain and Nervous System*. Washington DC: Society for Neuroscience.
- Free *Brain Facts* download available at:  
<http://www.sfn.org/skins/main/pdf/brainfacts/brainfacts.pdf>
- See school library for related titles under "ANFA" category
- COURSE DESCRIPTION:** Neuroscience is a rapidly emerging field. It is the study of the brain, the mind, and the nervous system addressing how we think, move, perceive, learn and remember. As neuroscience knowledge increases, we are poised to understand how and why architecture affects human perception, and therefore experience. The connection of neuroscience and architecture is one that needs to be better understood because of its potential implications to public health, safety and welfare. This intersection also has the potential to engage and amplify the imagination in the design process just as new computer technologies allowed architect Frank Gehry to experiment with new structural systems and form. Similar to the influence of physics on the architecture profession in the past, we cannot know at the present the significance of this work on how architecture will be practiced in the future. The advancements in physics have changed how architects and engineers address issues of acoustics, lighting, structures, and building performance among others. It has brought an ever increasing level of consideration of economy to the design process. Neuroscience research has the potential to influence the practice of architecture by providing a new body of knowledge.

**PEDAGOGIC OBJECTIVES:** This course is intended to familiarize architecture students with the language and concepts of neuroscience. With this new vocabulary and a rudimentary ability to benefit from neuroscience research students will be able to correlate current neuroscience research to potential applications in the design of the built environment. The fundamental argument of this course is that the relationship among the brain, body and architecture is inherent, significant and compelling. Each is constantly influencing the other and each should not be considered outside the context of this relationship.

**COURSE METHODOLOGY:** The course will consist of lectures, guest speakers, readings, reports, quizzes, discussion, and presentations.

**ACADEMIC POLICIES:** The course will follow the academic policies described in the General Catalog. It is each student's responsibility to acquaint himself / herself with them.

**GRADING:** Given adequate attendance and a passing level performance on ALL components, the course grade will be calculated as follows:

Quizzes	(60% of final grade)
Midterm Project	(15% of final grade)
Final Project/Presentation	(25% of final grade)

Refer to the General Catalog for a description of the quality of work required to achieve a specific letter grade for the course.

**ATTENDANCE:** Refer to the General Catalog for the school's policy regarding attendance.

**REQUIREMENTS:** **Quizzes** | A quiz will be given at the beginning of each class. The quizzes will cover material from the previous class lecture and from the assigned readings. The quiz format could include short answers, fill-in the blank, definitions, and/or diagrams. The lowest quiz score will be dropped in the calculation of your final grade and therefore no make-up or conflict quizzes will be given.

**Midterm Project** | The midterm project is due at the beginning of class on Monday 07 May 2005. Late midterms will not be accepted unless *prior* arrangements have been made.

**Final Project** | The final project is due at the beginning of class on Monday 11 June 2007. Late finals will not be accepted unless *prior* arrangements have been made. Failure to turn in a final project will result in an F grade.

**RESOURCES:** Required Texts | Class Handouts | Suggested Reading List

## COURSE OUTLINE:

Week	Date	Schedule
1	04.02	LECTURE: Introduction and Overview   Neurogenesis   Film – <i>Beyond Intuition</i> READINGS: <i>Introduction</i> (pp 3-13), <i>Development</i> (pp 14-47)
2	04.09	LECTURE: Development GUEST LECTURE: Comparative Neuroanatomy and Sheep Brain Dissection (UCSD Neuroscience Outreach – Nikoosh Carlo, Neuroscience Graduate Student, UCSD) READINGS: <i>Perception</i> (pp 48--109) <b>QUIZ #1</b>
3	04.16	LECTURE: Perception GUEST LECTURE: Vision and Eye Movements (Leanne Chokoskie, PhD, Postdoctoral Fellow, Vision Center Laboratory, Salk Institute) READINGS: <i>Attention and Consciousness</i> (pp 110-146) <b>QUIZ #2</b>
4	04.23	LECTURE: Attention and Consciousness GUEST LECTURE: Vision and Attention (John Reynolds, PhD, Associate Professor, Systems Neurobiology Laboratory, Salk Institute) READINGS: <i>Movement</i> (pp 147-181) <b>QUIZ #3</b>
5	04.30	LECTURE: Movement GUEST LECTURE: Vision and Attention (Minna Ng, Experimental Psychology Graduate Student, UCSD) READINGS: <i>Memory</i> (pp 182-221) <b>QUIZ #4</b>
6	05.07	LECTURE: Memory READINGS: <i>Emotion</i> (pp 222-251) <b>QUIZ #5; MIDTERM PROJECT DUE</b>
7	05.14	LECTURE: Emotion READINGS: <i>The Social Brain</i> (pp 290-335) <b>QUIZ #6</b>
8	05.21	LECTURE: The Social Brain GUEST LECTURE: Brain Imaging (Elizabeth Redcay, Experimental Psychology Graduate Student, UCSD) READINGS: <i>Language</i> (pp 252-289), <i>The Four Theaters</i> (pp 336-355) <b>QUIZ #7</b>
9	05.28	Memorial Day Observed <b>NO CLASS</b>

10 06.04 LECTURE: Language and The Four Theaters  
GUEST LECTURE: Language and Cognition (Bob Slevc, PhD, UCSD)  
READINGS: *Care and Feeding* (pp 356-377)  
**QUIZ #8**

11 06.11 Final Project Presentations  
**FINAL PROJECT DUE**

**NAAB CRITERIA:** This course addresses the following conditions for accreditation as outlined by NAAB (National Architectural Accreditation Board) requirements.

- 1.4 Architecture Education and the Profession
- 1.5 Architecture Education and Society

- 12.1 Verbal and Writing Skills
- 12.3 Research Skills
- 12.4 Critical Thinking Skills
- 12.7 Human Behavior
- 12.8 Human Diversity
- 12.14 Accessibility

The complete list of NAAB criteria is on file in the school library and is available for review on-line ([www.naab.org](http://www.naab.org)). Please contact your Department Chair if you have questions regarding the conditions for accreditation.