Methods in Brain and Cognitive Sciences (339.502) **Spring 2010**

Course coordinator: Inah Lee (inahlee@snu.ac.kr)

Description:
Basic research methods in brain and cognitive sciences will be introduced to students. The following representative areas will be covered: electrophysiological recording techniques in freely moving animals, whole-cell recording and optical imaging techniques in brain slices, computational modeling, signal detection theory, EEG/ERP recording techniques in humans, methods in pain research, PET imaging techniques, design and analysis in fMRI experiment. All students in the Department of Brain and Cognitive Sciences are required to take this course. The course is offered as 100% English-based course.

Textbook:
Due to fast-paced development in modern neuroscientific techniques, it is unrealistic to choose any textbook for this type of course. Instead, each lecturer will provide his/her own materials for the lecture.

Grading criteria (total 100%):
Attendance (10%), mid-term exam (30%), final exam (50%), in-class attitude & participation in discussion (10%)

Schedule:
Week 1 (Mar 1) : University holiday & no class
Week 2 (Mar 8) : Orientation for new students
Week 3 (Mar 15) : Inah Lee - electrophysiological recording in freely moving animals
Week 4 (Mar 22) : Sang Jeong Kim - whole-cell recording and optical imaging techniques in brain slices
Week 5 (Mar 29) : Min Zhuo - methods in pain research
Week 6 (Apr 5) : TBA
Week 7 (Apr 12) : **Midterm exam**
Week 8 (Apr 19) : Randolph Blake - signal detection theory
Week 9 (Apr 26) : Marcus Kaiser - computational modeling and simulations
Week 10 (May 3) : Sang-Hun Lee - design and analysis in fMRI experiment
Week 11 (May 10): Jae Sung Lee - PET imaging techniques
Week 12 (May 17): Jun Soo Kwon - EEG/ERP recording techniques in humans
Week 13 (May 24): Inah Lee - Practical skills
Week 14 (May 31): Bong-Kiun Kaang - Analysis of animal behaviors and molecular neuroscience tools
Week 15 (Jun 7) : **Final exam**