Introduction to Cognitive and Information Science

Instructor : Chen-Chao Tao
Time : Tuesday 4:30-7:30pm
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Credits : 3
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Course Description

One key issue in communication research is concerned with the interaction between the mediated message and the human mind, independently of or within the context of the person, at the individual or group level. The conventional stimulus-response model, which attempts to answer only *what media attributes or intrinsic message features produce effects*, cannot fully explain and predict communication processes and effects. "Understanding how individuals process messages is central to any comprehensive theory of communication" (Geiger & Newhagen, 1993, p. 42). This is the general direction for this course.

The goal of this course is to provide students with a solid knowledge of cognitive science from a communication perspective. At the micro level, this course focuses on cognitive approaches to studying communication processes and effects; at the macro level, this course seeks to understand how social contexts shape the form and character of technology, as well as how technology influences society. In addition, digital games and life in a virtual environment are also included.

Course Objectives

By the completion of this course, students should be able to:

- Understand the theoretical foundations of cognitive science.
- Be able to apply these theories to a variety of real-world problems.
- Identify key issues underlying communication processes and effects.

Class Structure

In general, the format of the course will be a lecture followed by a discussion of course materials. My philosophy of teaching is to help students achieve deeper understanding of

course materials through dialectic. Students are not coming to class to see a live show. Therefore, class participation is an indispensable component of learning and is strongly encouraged.

Course Materials

Required textbooks:

- Sternberg, R. J. (2009). *Cognitive psychology*. Belmont: Thomson Wadsworth.
- Harris, R. J. (2004). *A cognitive psychology of mass communication* (4th ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Christensen, L. B. (2007). *Experimental methodology* (10th ed.). Boston: Pearson Education. (Martin, D. W. (2008). *Doing psychology experiments* (7th ed.). Belmont, CA: Thomson Wadsworth.)

Recommended textbooks:

- 莊惠淳譯（2006）。腦力駭客一百招－基礎篇。台北：歐萊禮。（原著 Stafford, T., & Webb, M. (2004). *Mind hacks: Tips & tricks for using your brain*. Sebastopol, CA: O'Reilly Media.）
- 洪蘭譯（2002）。大腦的秘密檔案。台北：遠流。

Readings:

In addition to the textbook, there are a number of required readings on eCampus. There are also a number of recommended readings and links available online.

Grading/Evaluation

Assignment	Percent of grade	Due date
Exam	40%	11/10
Expert discussion leader	20%	12/15, 12/22
Research Proposals	40%	1/12
Experiment participation	5%	
Total	105%	

Overview of Assignments

Exam: There will be one exam. The format of the exam will be multiple choice. Questions for the exam will come from the textbook as well as class lectures. The exam will be closed-book and closed-note. No make-up exams will be given.

Research proposal: You should review some area of concepts and theoretical frameworks of cognitive psychology and apply that area to some aspect of communication processes. The research proposal will be written in stages, beginning with a paper topic approval, followed by annotated bibliography, and the final paper proposal submission. During the last week of class, each student will be required to present their paper in a panel format.

Experiment participation: This assignment provides students with an opportunity to experience a psychophysiological experiment. Teaching assistants will show you, step-by-step, how to run an experiment. Students will choose to either: a) volunteer for a research study, or b) record the demonstration.

Schedule

This schedule is subject to change. Changes will be announced in class and posted on eCampus. Students are responsible for keeping track of changes, even if they are absent.

Week (Date)	Topic	Reading(s)	Assignment
1 (9/15)	Course Overview & Introduction		
2 (9/22)	Introduction to Cognitive Psychology	Ch 1	
3 (9/29)	Cognitive Neuroscience	Ch 2	
4 (10/6)	Perception	Ch 3	Research paper guidelines distributed
5 (10/13)	Attention and Consciousness	Ch 4	
6 (10/20)	Memory: Models and Research Methods	Ch 5	
7 (10/27)	Individual Advising on Research Papers		
8 (11/3)	Memory Process	Ch 6	
9 (11/10)	Exam (Chapters 1-6)		

10 (11/17)	Experimental Methodology I	Christensen (2007)	
11 (11/24)	Experimental Methodology II	Christensen (2007)	
12 (12/1)	MediaLab		
13 (12/8)	Cognitive approaches to media I	Harris (2004)	
14 (12/15)	Cognitive approaches to media II	Harris (2004)	
15 (12/22)	Cognitive approaches to media III	Harris (2004)	
16 (12/29)	Individual Advising on Research Papers		
17 (1/5)	Guest Lecture		
18 (1/12)	Paper Presentations		Research Proposals

Hide and Seek

1. Attendance
   You are expected to arrive on time and to attend the entire class session. I repeat: **arrive on time**. For every absence, 5 points will be subtracted from the final score. Tardiness is defined as twenty minutes of any class meeting time. Three tardies equal one absence. One tardy in excess of twenty minutes will count as one absence. However, I will not formally take attendance during class. You should be responsible for your own attendance. I hope you will find regular and active attendance in class will be valuable help toward a better understanding of course materials.
2. Due dates
   Assignments are due at the beginning of class on the date specified in the written schedule. Assignments turned in after the due date will be subtracted 5 points for each day late. Late assignments will be accepted only if you have valid reason.
3. All cell phones must be turned off. You may not eat during class.