FAYETTEVILLE STATE UNIVERSITY
COLLEGE OF ARTS & SCIENCE
DEPARTMENT OF PSYCHOLOGY

SENSATION AND PERCEPTION
PSYC420-01
FALL 2008
12:30 - 1:45 PM
Three (3) Semester Credit Hours

INSTRUCTOR:
Dr. Thomas E. Van Cantfort
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OFFICE HOURS:
TTh: 4:00 - 6:00 p.m.
W: 1:00 - 5:00 p.m.
By Appointment

II. COURSE DESCRIPTION:

A study of the structure and functions of the sensory systems, with particular attention to perceptual processes influenced and affected by physical factors in the environment and by psychological aspects of the perceiving organism.

III. REQUIRED TEXTBOOK:

Wolfe, J. M., Kluender, K. R., Levi, D. M., Barkoshuk, L. M., Herz, R. S., Klatzky, R. L., & Lederman, S. J. (2006). *Sensation and perception*. Sunderland, MA: Sinauer Associates, Inc. ISBN:0-87893-938-5

Ryan, C., (1997). *Exploring perception*. NY: Brooks/Coles. ISBN: 0-534-32104-6

IV. COURSE OBJECTIVES:

The successful student is expected to master the following material:

1. Be able to discuss the various philosophical approaches to the study of sensation and perception (e.g. the Structuralist approach, Gestalt approach, ecological approach, etc.).
2. Be able to describe the methods used in psychophysics.
3. Be able to describe the anatomy of the various sensory systems (e.g. vision, audition, olfactory, gustatory, tactile, etc.).
4. Be able to explain various visual perceptual processes (e.g. depth perception, motion perception, size, color, contrast constancies, form perception, etc.).
5. Be able to explain auditory perceptual processes (e.g. pitch, locating sound, speech, music, etc.).
6. Be able to discuss the current research and knowledge on olfaction.
7. Be able to discuss the current research and knowledge on tactile sensations.
8. Be able to discuss the ontogeny of the sensory systems.

V. STUDENT EVALUATION AND GRADING:

1. This class meets three (3) hours a week, you will need nine (9) hours a week to study for this class. The rule of thumb is that for each one hour in class you spend three (3) hours outside of class

studying. Sensation and Perception is a very challenging course and if you put in a couple of hours per week studying for this class you are not likely to do well in the course.

2. There will be four (4) exams each worth fifth (50) points. Consult the syllabus for dates of these exams. There will also be weekly quizzes each worth ten (10) points. All quizzes and exams will be available in Blackboard. Consult the syllabus for dates of these exams.

3. Two (2) reaction papers are required. Each reaction paper is worth 25 points. These reaction papers will be a five (5) page paper in response to an article provided. The reaction paper must by typed using MS Word, in APA format and submitted electronically through Turnitin.com. See **Course Information** for an example of a reaction paper, how to submit your paper to Turnitin.com and the University's policy on plagiarism.

4. There will be exercises that will be completed through Blackboard. These exercises may be done in leu of in class instruction.

5. There are NO make-ups for missed exams. The final grade will be based on three (3) of the four (4) best exams, quizzes, class assignments, and reaction papers. Therefore, you are allowed to miss one (1) exam or drop your lowest score. *ALL STUDENTS MUST TAKE THE FINAL EXAM.*

6. Missing two (2) exams is automatic failure.

7. The total points that can be earned in this class is 350. Final grades will be determined according to the following schedule:

   A ≥ 90% of highest total points earned
   B ≥ 80% and < 90% of highest total points earned
   C ≥ 70% and < 80% of highest total points earned
   D ≥ 60% and < 70% of highest total points earned
   F < 60% of highest total points earned

VI. COURSE OUTLINE:

INTRODUCTION TO PERCEPTION

Aug. 21 Th.	What are Sensations & Perceptions?	Ch. 1, pp. 3 - 9
Aug. 26 T.	Psychophysics	Ch. 1, pp. 9 - 17
	Psychophysics (Ryan)	**Module 5, pp. 105-130**

NEUROLOGICAL BASES OF PERCEPTION

Aug. 28 Th.	The Nervous System	Ch. 1. pp. 17 - 25
	Physiological Bases of Perception (Ryan)	**Module 1, pp. 11-32**

VISION

Sept.	2	T.	Visual System	Ch. 2, pp. 26 - 45

BRIGHTNESS & CONTRAST

Sept.	4	Th.	Brightness	Ch. 3, pp. 46 - 58
			Brightness (Ryan)	**Module 4, pp. 94-104**
Sept.	9	T.	Visual Acuity	Ch. 3, pp. 58 - 73

COLOR

Sept.	11	Th.	What is Color?	Ch. 5, pp. 98 - 112
			Perceiving Color (Ryan)	**Module 3 pp. 57-79**
Sept.	16	T.	Physiological Research	Ch. 5, pp. 112 - 125
Sept.	18	Th.	**TEST I**	
Sept.	23	T.	Color Deficiency	
Sept.	25	Th.	Contrast	Lecture Notes

OBJECTS & FORMS

Sept.	30	T.	Perceptual Processing	Ch. 4, pp. 76 - 88
			Form & Patterns (Ryan)	**Module 2, pp. 33-44**
Oct.	2	Th.	Objects	Ch. 4, pp. 88 - 97

DEPTH PERCEPTION

Oct.	7	T.	Depth	Ch. 6, pp. 126 - 153
			Depth (Ryan)	**Module 4, pp. 79-93**
Oct.	9	Th.	**FALL BREAK**	
Oct.	14	T.	Perceiving Size	Lecture Notes

MOTION

Oct.	16	Th.	Motion Perception	Ch. 7, pp. 154 - 175
			Movement (Ryan)	**Module 2, pp. 44-56**
Oct.	21	T.	Attention	Ch. 8, pp. 176 - 203

SOUND

Oct.	23	Th.	Stimulus	Ch. 9, pp. 204 - 211

Oct.	28	T.	Anatomy	Ch. 9, pp. 211 - 222
Oct.	30	Th.	**TEST II**	

LAST WEEK TO WITHDRAW FROM CLASSES

Nov.	4	T.	Auditory Cortex	Lecture Notes
			HEARING	
Nov.	6	Th.	Sound Detection	Ch. 9, pp. 226 - 233
Nov.	11	T.	Hearing	Ch. 10, pp. 234 - 259
			SPEECH PERCEPTION	
Nov.	13	Th.	Speech	Ch. 11, pp. 267 - 282
Nov.	18	T.	Music	Ch. 11, pp. 261 - 267
Nov.	20	Th.	**TEST III**	
			TOUCH	
Nov.	25	T.	Touch	Ch. 12, pp. 286 - 313
Nov.	27	Th.	**HOLIDAY**	
Dec.	2	T.	Review	
			SMELL	
Dec.	4	Th.	Olfaction	Ch. 13, pp. 314 - 339
			TASTE	
Dec.	9	T.	Food	Ch. 14, pp. 340 - 361
Dec.	11	Th.	**Final Exam**	

VII. TEACHING STRATEGIES:

This course is taught primarily by lecture and discussion with a library research component.

VIII. BIBLIOGRAPHY:

Aks, D. J., & Enns, J. T. (1996). Visual search for size is influenced by a background texture gradient. *Journal of Experimental Psychology: Human Perception and Peformance*, *22*, 1467-1481.

Alais, D., & Blake, R. (2005). *Binocular rivalry and perceptual ambiguity*. Cambridge, MA: MIT Press.

Bartoshuk, L. M., Fast, K., & Snyder, D. (2005). Differences in our sensory worlds: Invalid comparisons with labeled scales. *Current Directions in Psychology*, *14*, 122-125.

Bende, M., & Nordin, S. (1997). Perceptual learning in olfaction: Professional wine tasters versus controls. *Physiology and Behavior*, *62*, 1065-1070.

Cansino, S., Williamson, S. J., & Karron, D. (1994). Tonotopic organization of human auditory association cortex. *Brain Research*, *663*, 38-50.

Carskadon, M., & Herz, R. S. (2004). Minimal olfactory perception during sleep: Why odor alarms will not work for humans. *Sleep*, *27*, 402-405.

Damasio, A. R. (1994). *Descartes' error*. New York: Putnam.

Fowler, C. A. (1996). Listeners do hear sounds, not tongues. *Journal of the Acoustical Society of America*, *99*, 1730-1741.

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Herz, R. S., Beland, S. L., & Hellerstein, M. (2004). Changing odor hedonic perception through emotional associations in humans. *International Journal of Comparative Psychology*, *17*, 315-339.

Levitin, D. J., & Cook, P. R. (1996). Memory for musical tempo: Additional evidence that auditory memory is absolute. *Perception and Psychophysics*, *58*, 927-935.

Macmillan, N. A., & Creelman, C. D. (2005). *Detection theory*. Mahwah, NJ: Erlbaum.

Mollon, J. (1995). Seeing Colour. In T. Lamb & J. Bourriau (Eds.), *Colour: art and science* (pp. 127-150). Cambridge, England: Cambridge University Press.

Palmeri, T. J., & Gauthier, I. (2004). Visual object understanding. *Nature Reviews, Neuroscience*, *5*, 291-303.

Pritchard, T. C., & Norgren, R. (2004). Gustatory system. In G. Paxinos and J. K. Mai (Eds.), *The human nervous system* (2nd ed., pp. 1171-1196). Amsterdam: Elsevier.

Reed, C. L., Klatzky, R. L., & Halgren, E. (2005). What versus where in touch: An fMRI study. *Neuroimage*, *25*, 718-726.

Shevell, S. K. (2003). Color appearance. In S. K. Shevell (Ed.), *The science of color* (2nd ed., pp. 149-190). Oxford, UK: Elsevier.

Wolfe, J. M., & Horowitz, T. S. (2004). What attributes guide the deployment of visual attention and how do they do it? *Nature Reviews, Neuroscience*, *5*, 495-501.

Zatorre, R. J. (2001). Do you see what I'am saying? Interactions between auditory and visual cortices in cochlear implant users. *Neuron*, *1*, 13-14.