

Psychology 4133(101)  
Human Information Processing  
(formerly “Perception & Cognition”)

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TEXT

There are good textbooks in sensation, good textbooks in perception, and good textbooks in cognition. But there is not a good textbook option for this class in human information processing that covers that entire territory, and I don’t think you’d be very happy if I assigned multiple textbooks! The good news is that I’ve built a model of human information processing over many years of teaching and doing research in the area and I’ve developed a collection of very detailed lecture outlines which I will give you as we complete each unit of study. Of course, those outlines will be fleshed out in lectures. If you listen to all the lectures in class, pay careful attention, take good notes, and review and elaborate upon your notes immediately after you’ve heard the lectures, I believe that you will do just fine.

For those of you want to have a textbook for your psychology reference library, there are two that I can recommend. I’m fairly sure you can find copies of one or both of these books online at relatively low cost:

Matlin, M. W. (2015). *Cognition* (9<sup>th</sup> edition). John Wiley & Sons, Inc. ISBN: 9781118983287

Foley, H. J., & Matlin, M. W. (2010). *Sensation and Perception* (5<sup>th</sup> edition). Routledge. ISBN: 9780205579808

I can’t provide you with reading assignments from these books that would run in parallel with the lectures I’ll deliver since my lectures are not structured to follow the organization of either of these books. However, I think that if you use a little common sense (and the books’ tables of contents and indices) you’ll be able to find readings in each book that are relevant to the topics we’re covering in our class. Just keep in mind

that lectures are intended to follow the texts, and testing will be based entirely on lectures. Treat textbooks as backup, and as a nice additional to your professional library, not as the primary source of information for this course.

## COURSE TOPICS

(in the order we'll cover them, subject to change)

### Introduction

- A. Definitions
- B. Historical antecedents
- C. Who is the "Great Man" of cognitive psychology?
- D. Our information processing model
- E. Themes in the course

### Sensory Processes

- A. Review of structures and functions of the eye
- B. Information selection through eye movements
- C. Selection of information through rod & cone action
- D. Selection by receptor tuning?
- E. Information extraction in the retina
- F. Cortical feature detection
- G. Visual sensory information storage
- H. Auditory stimulus and receptors
- I. Auditory sensory information storage

### Preattentive and Attentional Processes

- A. Segmentation (and depth perception)
- B. Channelization
- C. Selective attention
- D. Definitions of selective attention
- E. Bottleneck models of attention
- F. Effort models of attention
- G. Vigilance
- H. Improving concentration

### Pattern Recognition

- A. Definition and description
- B. Template matching models
- C. Feature analytic models
- D. Auditory pattern recognition (speech)

### Short-Term Memory

- A. General description

- B. Functions of STM
- C. Retrieval (scanning) from STM
- D. STM capacity
- E. STM contents
- F. Loss from STM
- G. Structure of STM
- H. Maintenance rehearsal
- I. Elaborative rehearsal
- J. Mental imagery
- K. Multi-component model of working memory

#### Long-Term Memory

- A. Evidence for the duplex model
- B. LTM capacity
- C. LTM contents
- D. More on LTM recall accuracy
- E. LTM structure
- F. Models of LTM organization

#### Social Perception and Cognition

- A. Introduction
- B. What qualities do we perceive?
- C. Observer effects on person perception
- D. Implicit personality theory
- E. Formation of first impressions
- F. Perceiver determinants of first impressions
- G. Target person determinants of impressions
- H. Accuracy of our impressions
- I. Perceiving emotions

#### Lateralization of Cognitive Functions

- A. Early clinical evidence for lateralization
- B. Early electrical stimulation studies
- C. Evidence from cerebral depression
- D. Split-brain research
- E. Limitations of invasive paradigms
- F. Studying cognitive lateralization in the normal brain
- G. Individual differences in cognitive lateralization
- H. Pathology and the hemispheres
- I. Altered states and the hemispheres

#### Creative Problem Solving (and other loose ends)

- A. Definitions of creative problem solving
- B. Stages of the creative thought process

- C. Social factors influencing creativity
- D. Organizational stress
- E. Personal variables influencing creativity
- F. Blocks to creativity
- G. Enhancing creativity

## EXAMS

Four noncumulative exams will be given at approximately equal intervals throughout the semester. Tentative test dates, subject to change, are: September 18, October 16, November 11, and December 6.

Makeup exams will all be administered during final exam week on Monday December 9 at 8:00 am in PY-101.

Each exam will test knowledge of material covered in class since the previous test and up to the date of the exam. Exams are non-cumulative.

## GRADING

Each exam will be scored on a percentage-correct scale as follows:

- A = 90-100%
- B = 80-89%
- C = 70-79%
- D = 60-69%
- F = 59% and lower

Course grades will be based on the average of grades earned on the four exams using the same grading scale shown above.

## ATTENDANCE POLICY

This class will be taught in a face-to-face format and regular attendance is expected, with exceptions for excused absences (as defined below). Students are allowed 6 unexcused absences in this class. Each additional unexcused absence beyond these 6 will result in a lowering of the course grade by one-half letter grade (5 points deducted from your test score average).

Students who miss the calling of the roll at the beginning of the class will be counted as absent for that day unless you alert me to your presence at the end of the class period to

let me know that you were only tardy. Each tardy counts as one-half an unexcused absence. It is each student's responsibility to respond to roll call in a voice that is loud enough for me to hear. Please speak up.

There will be no grade penalty on exams missed because of an excused absence. There will be a one letter grade penalty on each lecture exam missed because of an unexcused absence.

Absences are excused only under the following circumstances:

1. the student provides a written excuse from a medical practitioner or MSU official stating that the student was unable to attend class on the day(s) of the absence;
2. the student provides a written excuse from a medical practitioner or MSU official stating that the student's dependent child was ill on the day(s) of the absence;
3. the student provides a written excuse from an MSU official stating that the student was in attendance at a mandatory university function on the day(s) of the absence.

In order for an absence to be excused, the written documentation for the excused absence should be provided to me within one week of the absence. If this is not possible, it is the student's responsibility to contact me within a week of the absence to let me know when documentation for the excused absence will be provided. Take responsibility for attending class regularly and promptly documenting excused absences.

There are many good reasons to miss class that are not considered by university policy to be excused absences. Funerals, employment-related absences, illnesses not requiring medical attention, job interviews, family emergencies, automobile malfunctions, court appearances, etc. do not constitute excused absences. Please reserve your 6 allowed absences to cover these situations.

### MISSED AND MAKEUP EXAMS

Students who miss scheduled exams will be allowed to take makeup exams on Monday, December 9 (during final exam week) at 8:00 am in PY-101. There will be a one letter grade penalty for exams that were missed for unexcused reasons. There is no grade penalty for exams that were missed due to excused reasons. Criteria for excused absences are listed in the preceding section of this syllabus.

## DISABILITIES

Individuals requiring special accommodations under the Americans with Disabilities Act should contact the Midwestern State University Disability Support Services office.

## OFFICE HOURS

I am available for appointments during office hours as follows: MWF 10-12. Be sure to email me for an appointment during these times so that we can avoid scheduling conflicts.