

**PSY 365 – COGNITION
GRAND VALLEY STATE UNIVERSITY**

FALL, 2021

Section 01: MW 1:30pm-2:45pm 114 Lake Michigan Hall

INSTRUCTOR: Joel Quamme, Ph. D.
OFFICE: 1311 Au Sable Hall
PHONE: 616-331-2153
E-MAIL: quammej@gvsu.edu (This is the best way to get ahold of me)
OFFICE HOURS: MWF 10:00 am – 10:50 am, or by appointment
During office hours I can accommodate either in-person meetings or virtual meetings via zoom. If you want to meet at another time, I will be available for virtual meetings by appointment. If you want to meet, just send me an email and we can decide on a time that works for both of us.

REQUIRED MATERIALS:

Coglab Access Code: ISBN-13: 9781305241794

Francis & Neath (2012). CogLab 5: Instant Access, 5th ed.

You may be able to get the code somewhere other than the bookstore, but if you do this, **be sure to purchase a new code -- do not buy a used code from anyone!** You can purchase a new code online with a credit card (after payment, you will receive an email with the access code in it) from:

<https://www.cengage.com/shop/isbn/9781285461083>

The lab manual is free online at the following address once you have registered and logged in:

<https://coglab.cengage.com/help/resources/CLStudentManual2013.pdf>

In addition to the CogLab access Students will need weekly access to the following:

- A high-speed internet connection
- Computer with sound card and speakers or headphones, and an operating system that meets current Blackboard browser requirements (Windows 8 or above; OS 10.12 or above)

PREREQUISITES:

Psychology 101 (Introduction to psychology) is a prerequisite for this course

MASK POLICY:

Until an adequate number of students are vaccinated against COVID-19, and the university's alert level is "Near Normal", face coverings will be required in classrooms at all times to reduce the chances of transmission between people. Students who have forgotten their face coverings may get a disposable mask at a campus office. Students who are not able to wear a face covering due to a medical condition should contact Disability Support Services (DSR) to discuss their individual situation.

An explanation of the university alert level, along with a display of the current alert level, can be found here: <https://www.gvsu.edu/lakerstogether/alert-levels-and-indicators-39.htm>

More information and resources about GVSU's mask policy can be found here: <https://www.gvsu.edu/provost/face-coverings-masks-toolkit-205.htm>

COURSE DESCRIPTION

The purpose of this course is to provide a broad introduction to the scientific study of human cognition. Cognition refers generally to any kind of *information processing* that goes on in the mind, and includes all the various the mental processes that underlie our behavior. Cognitive psychologists study how people recognize patterns, pay attention, remember facts and events, represent knowledge about themselves and the world around them, use and understand language, reason, solve problems, and make decisions. Cognitive processes operate in every aspect of our lives whether we are aware of them or not – from searching the classified ads, to driving on a busy highway, to deciding which political candidate to vote for. In short, cognitive psychologists try to understand everything that happens in your mind between “input” and “output”.

This course will emphasize the major theories and findings of empirical research into human information processing. We'll discuss the methods cognitive psychologists use to study mental processes, and we'll look at research results from a variety of studies on cognitive phenomena, including psychological experiments, neuroscientific studies of brain activity and the effects of brain damage, measurement of individual differences in performance, and computer modeling of cognitive systems. We'll explore the logic and evidence of basic cognitive mechanisms, and their application to human behavior and performance in real life.

Course Objectives:

Upon successful completion of this course students will be able to:

1. Summarize important scientific methods, research findings, and theories of cognition.
2. Evaluate current issues in cognition research.
3. Compare the strengths and weaknesses of various theories of cognition.
4. Explain how cognition is studied empirically.

READINGS

This class will not use a textbook this semester, but article readings will be assigned most weeks and made available on blackboard. We'll discuss the readings in class and all assigned readings will also be fair game for exams. Thus, it is likely that **your grade will suffer if you do not keep up with the assigned reading.**

GRADING

Grades will be computed based on your performance on 3 exams, 10 online CogLab assignments, and your participation in in-class activities according to the following breakdown:

Three exams: 75%
Ten Online CogLab Assignments: 20%
In-Class Activities: 5%

Grading scale. The percentage of total credit you earn will be converted to letter grades according to the following scheme:

A	100-94	A-	90-93	B+	87-89	B	83-86
B-	80-82	C+	77-79	C	73-76	C-	70-72
D+	67-69	D	60-66	F	59 or lower		

EXAMS

There will be three ***non-cumulative*** exams, each worth 25% of your grade (for a total of 75%). The material tested on exams will come from the lectures, textbook, CogLab assignments, additional articles, discussions and class activities. The exams will require you to know some definitions, but the main focus will be on describing theories and models of cognitive processes, the design, procedure and results of cognitive experiments, explaining what these results tell us about how cognitive processes work, and applying principles of cognition to real-world contexts.

COGLAB ASSIGNMENTS

Another 20% of the grade is based on completion of ten web-based laboratory assignments at the CogLab Online Laboratory (<https://coglab.cengage.com/>). These assignments are reproductions of classic experiments on cognition, and are designed to enrich your understanding of how research in cognitive science is conducted. Each assignment is worth 2% and involves (1) completing the lab, and then (2) taking a short, 5-question quiz about the lab on blackboard. You will also be responsible for understanding the design, methods, results, and theoretical implications of these experiments on exams. When you complete a coglab assignment, the time and date of completion of both the experiment and the quiz will be recorded automatically. There are 12 CogLab assignments scheduled, so you can skip two without penalty. You will need to finish the CogLab Assignment by the day it is due to receive credit. Each ***Coglab assignment –both the experiment and the quiz—is due by midnight on the date it is assigned on the schedule.*** In most cases, the date is a Friday. Check the schedule to see the due dates for each assignment. See the “**Steps to Register for CogLab**” section at the end of the syllabus for information on getting started.

IN-CLASS ASSIGNMENTS AND PARTICIPATION

The remaining 5% of your grade will be participation in in-class assignments. On some days, we will do short exercises, demonstrations, or other activities in class, and I will have you turn in something at the end as evidence of your participation (note: on the days we do this, I will ***not*** announce it ahead of time). Getting credit is an easy, 3-step process: (1) show up to class, (2) participate in the activity, and (3) turn in evidence of your participation at the end. Credit for participation can only be made up in the case of an excused absence in which you can provide documentation your absence was unavoidable (e.g., if you are quarantined)

EMERGENCY CLOSINGS

If for any reason the university cancels class on an exam day (e.g., severe weather), the exam will be moved to the next class meeting.

ELECTRONIC DEVICES

Please turn all cell phones, pagers and other electronic devices with audible signals or alarms OFF during class time.

ACCOMODATION FOR DISABILITY

Any student in this class who has special needs because of a learning, physical, or other disability, please contact me or Disability Support Resources (DSR) at 331-2490. Furthermore, if you have a physical disability and think you will need assistance evacuating this classroom and/or building in an emergency situation, please make me aware so I can develop a plan to assist you.

CLASS SCHEDULE

The following schedule of topics for each day and, readings, and assignment dates is *tentative*, and may need to be modified later in the course. Any changes to the schedule will be announced in class and on blackboard. Readings will be announced in class and made available on blackboard or course reserve at least a week ahead of time. Exam dates will not change unless class is cancelled *on the date of the exam*.

Week	Date & Class Topic	Readings	CogLab Assignments
1	M 8/30: Introduction & Orientation W 9/1: History & Perspectives on Cognition	Roediger, 1980 Miller, 2003	Register for CogLab!
2	M 9/6: LABOR DAY BREAK W 9/8: Pattern & Object Recognition	Gosavi & Hubbard, 2019	#18: Partial Report (due 9/10)
3	M 9/13: Pattern & Object Recognition W 9/15: Attention	Stephan & Caine, 2009 Drew et al., 2013	#7: Visual Search (due 9/17)
4	M 9/20: Attention W 9/22: Short-term & Working Memory	Ashcraft & Klein, 2011 (pp. 326-359)	#13: Stroop (Due 9/24)
5	M 9/27 & M 9/29: Short-term & Working Memory	Baddeley & Logie, 1999 Beilock & Carr, 2005	#26: Phonological Similarity Effect (due 10/1)
6	M 10/4: EXAM 1 W 10/6: Long Term Memory Organization	Glanzer & Cunitz, 1966	
7	M 10/11: Long Term Memory Organization W 10/13: Long-Term Memory Encoding and Retrieval Processes	Squire & Wixted, 2011 (pp. 259-275) Craik, 2002	#29: Levels of Processing (due 10/15)
8	M 10/18: LTM Encoding and Retrieval processes W 10/20: Metamemory & Memory reconstruction	Pettijohn et al., 2016 Roediger & Karpicke, 2006	#28: Encoding Specificity (due 10/22)
9	M 10/25: FALL BREAK W 10/27: Metamemory & Memory Reconstruction	Schacter, 1999	#35: Memory Judgment (due 10/29)
10	M 11/1: Visual Imagery W 11/3: Visual Imagery	Gardony et al., 2014 Pearson & Kosslyn, 2015	#38: Mental Rotation (due 11/5)

11	M 11/8: EXAM 2 W 11/10: Categorization	D'lauro et al., 2008	
12	M 11/15: Categorization W 11/17: Semantic Organization	Meyer & Schwanefeldt, 1971	#48: Prototypes (due 11/19)
13	M 11/22: Semantic Organization	Barsalou et al., 2003	#42: Lexical Decision (due 11/26)
	W 11/24: Thanksgiving Break		
14	M 11/29 & W 12/1: Reasoning	Johnson-laird et al., 1993	#54: Wason Selection (due 12/3)
15	M 12/6 & W 12/8: Judgment & Decision-Making	Tversky & Kahneman, 1974 Stewart, 2009	#52: Risky Decisions (due 12/10)
Finals Week	12/13 Monday, 12:00pm-1:50pm		EXAM 3

Article readings

Ashcraft, M. H. & Klein, R. K. (2011) Attention. In D. J. Levitin (Ed.), *Foundations of Cognitive Psychology: Core Readings* (pp. 319-359. Boston, MA: Allyn & Bacon.

Baddeley, A. D. & Logie, R. H. (1999). Working memory: The multiple-component model. In A. Miyake & P. Shah (Eds.) *Models of Working Memory: Mechanisms of Active Maintenance and Executive Control*. (pp. 28-61). Cambridge UK: Cambridge University Press

Barsalou, L. W., Simmons, W. K., Barbey, A. K., & Wilson, C. D. (2003). Grounding conceptual knowledge in modality-specific systems. *Trends in Cognitive Sciences*, 7, 84-91.

Bauer, M. I. & Johnson-Laird, P. N. (1993) How diagrams can improve reasoning. *Psychological Science*, 4, 372-378.

Beilock, S. L. & Carr, T. H. (2005). When high-powered people fail: Working memory and “choking under pressure” in math, *Psychological Science*, 16, 101-5

Craik, F. I. M. (2003). Levels of processing: Past, present ... and future? *Memory*, 10, 305-318.

D'Lauro, C., Tanaka, J. W., & Curran, T. (2008). The preferred level of face categorization depends on discriminability. *Psychonomic Bulletin & Review*, 15, 623-629.

Drew, T., L., Vo M. L.-H., & Wolfe, J. M. (2013). The Invisible Gorilla strikes again: Sustained inattentive blindness in expert observers, *Psychological Science*, 24(9), 1848-1853.

Gardony, A. L., Taylor, H. A., & Brunye, T. T. (2014). What does physical rotation reveal about mental rotation? *Psychological Science*, *25*, 605-612.

Glanzer, M., & Cunitz, A. R. (1966). Two storage mechanisms in free recall. *Journal of Verbal Learning & Verbal Behavior*, *5*(4), 351-360.

Gosavi, R. S & Hubbard, E. M. (2019). A colorful advantage in iconic memory. *Cognition*, *187*, 32-37

Meyer, D. E. & Schvaneveldt, R. W. (1976). Meaning, memory structure, and mental processes. *Science*, *192*(4234), 27-33.

Miller, G. A. (2003). The cognitive revolution: A historical perspective. *Trends in Cognitive Sciences*, *7*, 141-144.

Pettijohn, K. A., Thompson, A. N., Tamplin, A. K., Krawietz, S. A., & Radvansky, G. A. (2016) Event boundaries and memory improvement, *Cognition*, *148*, 136-144.

Roediger, H. L. (1980). Memory metaphors in cognitive psychology. *Memory & Cognition*, *8*, 231-246.

Roediger, H. L. & Karpicke, J. D. (2006). Test-Enhanced Learning: Taking memory tests improves long-term retention, *Psychological Science*, *17*, 249-255.

Schacter, D. L. (1999). The seven sins of memory. Insights from psychology and cognitive neuroscience. *American Psychologist*, *54*, 182-203.

Squire, L. R., & Zola-Morgan, J. (1991). The Cognitive Neuroscience of human memory since H. M. *Annual Review of Neuroscience*, *34*, 259-288.

Stephan, B. C. M. & Caine (2009). Aberrant pattern of scanning in prosopagnosia reflects impaired face processing, *Brain and Cognition*, *69*, 262-268.

Stewart, N. (2009). The cost of anchoring on credit-card minimum repayments. *Psychological Science*, *20*, 39-41.

Tversky, A. & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, *185*, 1124-1131

Steps to Register for CogLab:

1. Go to <http://coglab.cengage.com/help/register.shtml>
2. Fill in the form at the bottom of the page. You will need the following:
 - a) Group Name: **Fall2021Cognition**
 - b) Group Password: **mindware**
 - c) Your registration code. It may be on a sticker on the inside front cover of your CogLab Student Manual. It may have been bundled with your textbook on a postcard. Or, you may have purchased a registration code electronically (also called an e-Pin). Select "Start registration." It should be either 11 or 16 characters (both will work)
3. When you click on "Start Registration", your Web browser will connect with the CogLab server to verify your information. If the information is correct, a new window will appear. The first line, highlighted in yellow, is your User ID. You should write this down because you will need it to access CogLab. The second line is your registration code.
4. You will be asked to enter some more information:
 - The next two lines ask for your first name and your last (family) name.
 - Next, enter a password. You'll use this when you login. The password must be at least 8 characters long. It is best not to enter a password you use on other web sites.
 - The next line asks you to re-enter the password.
 - The next two lines ask for your email address and then confirmation of this address. This email address will be used if you forget your password.
 - Next, enter a security question and answer. Make sure to use a question that only you can answer correctly. Also, remember whether you use uppercase or lowercase letters in your answer: you'll need to enter your answer exactly the same if you forget your password.
 - If necessary, select your keyboard layout (for keyboard help, see <http://coglab.cengage.com/info/keyboards.shtml>).
 - Finally, decide if you want CogLab to remember you so that you don't need to login each time. If not, uncheck the box next to Remember Me.

After filling in all the text fields, click or tap on the Complete Registration button. Your CogLab account is now ready to go!

To Start Doing Experiments:

Point your Web browser to <http://coglab.cengage.com> and log in with your User ID and Password. Then Click on "LABS" at the top. Select the lab experiment that you want to perform by clicking on the link. **Read the Background and Instructions carefully**, and scroll to the bottom to begin the experiment when ready. If you have logged in, you'll see a rectangle. Make sure that you can see the full area before you begin the lab.

Note: You need to read the instructions before you can complete the experiment!

At the end of the experiment, the browser window will load a summary of your data for the experiment. When you see this window, you are finished with the experiment.

If You Have Problems with CogLab:

Look under the HELP tab for frequently asked questions, password help, or to contact Tech Support.