# Introduction to Psychobiology
## University of Toledo

## Syllabus

### Course Information

<table>
<thead>
<tr>
<th>Course title:</th>
<th>Psychobiology</th>
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<tr>
<td>Course number:</td>
<td>PSYC 2600-001</td>
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<tr>
<td>Course discipline:</td>
<td>Psychology</td>
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<tr>
<td>Course description:</td>
<td>This course provides a basic introduction to psychobiology. It uses a textbook designed for college sophomores. Students take practice quizzes on each of the 20 chapters. Grades are based on 7 exams of approximately 18-30 questions each, as well as &quot;Hear &amp; Spell&quot; tests for each chapter. Students are allowed to retake one exam at the end of the term.</td>
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<tr>
<td>Prerequisite(s):</td>
<td>Recommended, PSYC 1010 Introductory Psychology</td>
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### Course Goals

| Course goals: | The purpose of this course is give you a basic understanding of the neurological basis of behavior so that you can 1) better understand magazine and newspaper articles about the brain, 2) be prepared for advanced courses in neuroscience, and 3) have some knowledge of the neurological disorders that you may encounter during your lifetime. |

### Instructor Information

| Name: | Henry E. Heffner, Ph.D. |
| Email: | Use the WebCT |
| Phone: | 419/530-2684 |
| Biography: | B.A., Trinity College, Psychology; M.S., Florida State University, Psychology; Ph.D., Florida State University, Psychobiology; Field of Interest: Role of auditory cortex; Comparative study of hearing; Tinnitus; Ethics of animals research |
| For more about me go to: | http://psychology.utoledo.edu/showpage.asp?name=hheffner |

### Textbook

| Required reading: | A Concise Guide to Psychobiology. (Available only from the UT and off-campus Student bookstores.) |

### Policies

| Additional information: | Attendance consists of taking quizzes and exams on time. The Instructor may post comments from students (without the students' names) for general enlightenment. These policies and procedures will be followed as closely as possible, but are subject to change. |

### Course Requirements

| Requirements: | Your grade for the course is based on seven exams, each covering two-three chapters. You will be allowed to retake one exam at the end of the course. **The grade you receive on the retake will be the final grade for that exam, even if it is lower than your first score.** (Note that the retake is optional and that you have to let me know which exam you want to retake.) |
Read a chapter first without filling in the answers to the questions. Read it a second time and fill in the answers as you go. (You can check your answers with those in the back of the book)

Then take a practice quiz for the chapter until you can answer all the questions. Keep reading and taking practice quizzes until you can consistently receive a grade you like. **It is not unusual for "A" students to take each quiz 20 or more times before taking an exam.**

If you can't answer the practice quiz questions, you will probably not be able to answer the exam questions.

### Quizzes

**Chapter Quizzes are provided for practice and do not count towards your grade.** You should take a quiz as many times as necessary to achieve mastery. The questions are chosen randomly from the test bank so you will get a different quiz each time.

The quizzes are machine-scored so spelling errors are counted as wrong answers. Also, there may be an alternative correct answer that is not listed. **Do not panic if the computer scores an answer on a quiz wrong when it is really correct.** Students are expected to answer the questions on the quizzes.

Please let me know if you feel a question needs fixing because it is unclear, there is another alternative answer, or the question is just plain wrong—errors do sometimes occur.

### Exams

**The exam schedule is in the Calendar.**

Each exam will have 20-32 questions.

Each exam must be completed (not started) by the due date and time (see Calendar for exam due dates--the due date & time is also listed with the exam).

**Exams:** Exams may be taken early.

**Academic Honesty.** You may not receive help from anyone while taking an exam. Students are expected to adhere to the University of Toledo's policy on honesty, which can be found at: http://www.dl.utoledo/HTML/academic dishonesty.htm

**Scoring Exams.** The exam questions will be matching or multiple choice, with each question based on a practice question.

Students may be asked to take supervised exams.

Note that you will have anatomy questions from previous exams appearing on subsequent ones.

### Hear & Spell Tests

In order to be considered educated, you must pronounce and spell names and technical terms correctly. For this reason, many pronunciations are included in the textbook.

To reward students for learning these pronunciations, there is a "Hear & Spell" test for each chapter, which uses those words. You may take each test over and over until you get the score you want.

Each correctly spelled word on a Hear & Spell test is worth 0.05 points. Because there are about 400 words, this adds up to 20 points, which is about 10% of your total grade.

### Missed Exam Policy

Contact the Instructor as soon as possible. Missed exams may be taken in the Test Center with no book or notes allowed.

Main Campus Make-Up and Placement Test Center Location: Memorial Field House Room 1080.
Phone: 419.530.2011. Test Hours: Monday through Friday, 8:30 a.m. – 4:45 p.m.

### Final Exam

Instead of a Final Exam, you are allowed to retake one exam of your choice. Your score on the retake will be your final grade for that exam, even if it is lower than your first score. However, if you are satisfied with your final grade, or do not wish to take the chance of getting a lower score on the retake, you do not have to take it. If you want a retake, you will need to let me know after you have taken Exam #7.
A Concise Guide to Psychobiology: Table of Contents

Chapter 1
Introduction to Neuroscience
Introduction
What is Neuroscience?
History of Neuroscience
Who are Neuroscientists

Chapter 2
Brief Introduction to Neuroanatomy
Introduction to the Nervous System
Commissures
Fissures and Gyri
Planes of Orientation
Brain Scans

Chapter 3
The Neuron
Introduction
Neural Processing
Electrical Properties of Neurons
The Synapse
Electroencephalogram

Chapter 4
Neurotransmitters
Introduction
“Typical” Neurotransmitters
“Atypical” Neurotransmitters
Synaptic Transmission
Receptors, Second Messengers, and Glia
Readings of Interest

Chapter 5
Non-Neural Elements of the Nervous System
Introduction
Glia
The Vascular System
The Meninges
The Ventricles and Cerebrospinal Fluid
Neuroanatomy Review

Chapter 6
Development of the Nervous System
Introduction
Prenatal Development
Genes
Postnatal Development

Chapter 7
Sensation & Perception + Vision
Part I
Sensation & Perception
Vision Part I
Physics of Light
The Eye
Refractive Errors: Problems in Focusing the Eye
Two Common Non-Refractive Problems of the Eye

Chapter 8
The Neural Processing of Visual Information
Introduction
The Retina
The Visual Pathways
Visual Cortex
Disorders of the Visual System
Subdividing Cortex

Chapter 9
Color Vision, Visual Phenomena, and Early Visual Experience
Introduction
Color Vision
Abnormal Color Vision
Visual Phenomena
Acquiring Sight in Adulthood

Chapter 10
Auditory and Vestibular Systems
Introduction
Physics of Sound
Anatomy of the Human Ear
Encoding Sound
The Auditory Pathway
Physiology of the Auditory system
Hearing Disorders
Vestibular System

Chapter 11
Chemical Senses: Taste, Olfaction, and the Vomeronasal Organ
Introduction
Taste (Gustation)
Olfaction (Sense of Smell)
Vomeronasal Organ
Cranial Nerves
Chapter 12  
**Somatosensory System**  
Introduction  
Discriminative Touch  
Thermal Sensitivity  
Pain (Nociception)  
Kinesthesia  
Somatosensory System Anatomy  
Vibrissae Sense  

Chapter 13  
**Control of Movement**  
Introduction  
Muscles and Motor Nerves  
Spinal Reflexes  
Control of Movement by the Brain  

Chapter 14  
**Regulating the Internal Environment**  
Introduction  
The Autonomic Nervous System  
Neural Regulation of the Autonomic Nervous System  
Eating and Appetite  

Chapter 15  
**Biological Rhythms Including Sleep**  
Introduction  
Biological Rhythms  
Neural Control of Biological Rhythms  
Sleep  
Sleep Disorders  

Chapter 16  
**Emotion and Stress**  
Introduction  
The Study of Emotion  
Central Nervous System Circuits  
Prefrontal Cortex  
Aggression  
Reward Centers in the Brain  
Stress  

Chapter 17  
**Brain Mechanisms in Learning**  
Introduction  
Habituation and Sensitization  
Classical Conditioning  
Operant Conditioning  
The Medial Temporal Lobe and Memory  
Other Human Memory Disorders  
Long-Term Potentiation  

Chapter 18  
**Language and Consciousness**  
Introduction  
Animal Communication  
Cortical Speech Areas  
Lateralization of the Speech Areas  
The Split-Brain  
Consciousness  

Chapter 19  
**The Malfunctioning Mind**  
Introduction  
Psychiatric Conditions with Known Organic Causes  
Schizophrenia  
Environmental Considerations in Mental Illness  

Chapter 20  
**The Symbiotic Nature of Animal Research**  
Introduction  
Symbiosis  
Domestication  
How Humans Benefit from Their Mutualistic Relationship with Animals  
How Animals Benefit from Their Mutualistic Relationship with Humans  
Philosophical Issues