Course	**NSC 4382**
Course Title	**Neurobiology of Emotions**
Professor	**Faisal R. Jahangiri, MD, CNIM, D.ABNM, FASNM, FASET**
Term	Fall 2022
Meetings	Asynchronously

Professor's Contact Information

Office Location JO-3.108
Email Address Faisal.Jahangiri@utdallas.edu
Office Hours By appointment only
Other Information All course-related communication must be done via UTD's official email.

TA's Contact Information

Name: Carole Leung
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General Course Information

Prerequisites NSC 3361.

Course Description: **Neurobiology of Emotions** (3 semester credit hours). Emotions play essential roles in life. This course examines the underlying neurobiology of emotions, models and systems used to study emotions, and medical aspects of emotional disorders, including fear and anxiety disorders.

Course Purpose: The goal of this course is to provide a general understanding of emotion neuroscience, with a focus on fear and anxiety.
Most people's lives are dominated by their emotions. One of the most critical emotions is fear. Many neuroscience characteristics of fear and anxiety can also be found in other emotions. No one has not experienced fear and anxiety; for many people, a day goes by without experiencing fear or anxiety. Fear can deter people from engaging in dangerous activities, but it can also cause significant psychological harm, and in some cases, it can be a pleasurable experience. Fear and anxiety are the root causes of many severe diseases and contribute to the onset of many others.

We will begin the course by reviewing the neuroscience of emotions in general, followed by a more detailed discussion of the anatomy and function of the neural systems which serve as the foundation for emotions; after that, we will turn to topics specifically related to fear and anxiety, such as social anxiety, memory, stress, and the effect of hormones and other substances. We will also discuss some of the diseases associated with fear and anxiety, how to disseminate new information and how people's confirmation bias can contribute to fear and potentially prevent them from benefiting from new developments.

Learning Outcomes: Upon successful completion of this course, students will be able to understand:

- Understand the neuroscience of emotions in general and precisely that of fear and anxiety.
- Learn about the models for emotions and the fundamental biological basis for emotions.
- Learn about the emotional brain and its role in emotions, fear, and anxiety.
- Understand the specific anatomy and neurobiology that is the basis for fear and anxiety.
- Understand some medical aspects of fear and anxiety disorders, including social anxiety disorders.

Course Structure:

There will be twelve weeks of lectures in the course. Each week two lectures will be available for review. Each week two lectures will be open and stay open until the end of the course.

1. **Outline:**

    General introduction
    Chapter 1. Fear and anxiety
    Chapter 2. Theories of emotion
    Chapter 3 Neurobiology of emotions
    Chapter 4. What happens in the brain when a person is fearful, afraid, scared, or anxious?
    Chapter 5. How do fear and anxiety affect a person?
    Chapter 6. Diseases related to the emotional brain

2. **Lectures**: Pre-recorded lectures will be available weekly for asynchronous learning.

3. **Exams**: Two exams during the course. One midterm and one final exam. Both exams will be available online, with 30 multiple choice questions in each exam.

4. **Required and Recommended Reading:** Each chapter will have a required reading which will be added to the unit and clearly labeled and downloaded. The textbooks will be available in PDF format.

5. **Infographic:** Each week will require the submission of an infographic related to the week's topic. The first 25 submissions will receive 5% bonus points.

6. **Short Paper:** Submit a short paper with approximately 1000 words. Select any one topic covered in this course.

Course Assessments:

Required assignment completion for completing the course

- Review recorded lectures
- Required reading
- Infographic
- Short paper
- Midterm Exam
- Final Exam

Required Textbook: Møller, A.R. "Neurobiology of Fear, Anxiety and other Emotions" 261 pages. The textbook for the course is uploaded as a PDF.

Suggested Texts, Readings, & Materials:

1. Møller, A.R. Sensory Systems: Anatomy and Physiology, Aage R. Møller Publishing, 2014. (The book is available on the blackboard as a PDF)
2. Møller, A.R. Neuroplasticity and its Dark Sides: Disorders of the Nervous System. Aage R. Møller Publishing, Dallas, 2014, 403 pages, 2018. (The book is uploaded on the blackboard as a PDF for you)
3. Brodal P. The Central Nervous System 4th edition New York, Oxford University Press, 2010 ISBN 978-0-19-538115-3
4. Related articles and other materials.

Assignments & Academic Calendar

Week	Topics
Week 01: 08/25	Introduction: Part 1. Emotions
	Introduction: Part 2: Emotions – Causes of Fear
Week 02: 09/01	Chapter 1: Part 1. Emotions
	Chapter 1: Part 2. Emotions - Causes of Fear
Week 03: 09/08	Chapter 1: Part 3. Emotions - Importance of Knowledge
	Chapter 1: Part 4. Emotions - Anxiety and Angst
Week 04: 09/15	Chapter 1: Part 5. Emotions – Social Anxiety
	Chapter 2: Theories of Emotions
Week 05: 09/22	Chapter 3: Part 1. What happens in the Brain?
	Chapter 3: Part 2. Connections From the Amygdala
Week 06: 09/29	Chapter 3: Part 3. Emotions - Activation of Amygdala
	Chapter 3: Part 4. Detection of Threats
Week 07: 10/06	**MIDTERM EXAM**
Week 08: 10/13	Chapter 3: Part 5. Functions Aspects of Emotions
	Chapter 3: Part 6. Neuroplasticity
Week 09: 10/20	Chapter 3: Part 7. Oxytocin and Other Molecules
	Chapter 4: Part 1. Emotions - Other Brain Systems
Week 10: 10/27	Chapter 4: Part 2. Other Brain Systems and More End of Class
	Chapter 5: Part 1. Emotions - Fear and Life of a Person
Week 11: 11/03	Chapter 5: Part 2. Effect of Fear on a Person
	Chapter 6. Part 1. Diseases to the Nervous System
Week 12: 11/10	Chapter 6: Part 2. Diseases Related to the Emotional Brain
	Chapter 6: Part 3. Diseases Related to the Emotional Brain
Week 13: 11/17	Chapter 7: Part 1. Recent Developments
	Chapter 7: Part 2. Where do Technologies Come From
11/24	**THANKSGIVING BREAK**
12/01	**FINAL REVIEW – Short Paper Due**
12/08	**FINAL EXAM**
	Dec 07-08, 2022, 7:00 am – 11:00 pm CST.

Course Policies:

Grade Distribution	Infographics = 30%, Short Paper = 10%, Midterm Exam = 30%, Final Exam =30%
Grading (credit) Criteria	100-94 = A, 93-90 = A-, 89-87 = B+, 86-84 = B, 83-80 = B-, 79-77 = C+, 76-74 = C, 73-70 = C-, <70 = F
Project	Students in the course will break up into 4-5 student teams (the number may change depending on class size). The team will work on a research paper. The details of the project will be discussed in the course.
Class Attendance	**Asynchronous**
Classroom	**Online**
Pre-requisite	NSC 3361
College	School of Behavioral and Brain Sciences
Comet Creed	*The UT Dallas student body voted on this creed in 2014. It is a standard that Comets choose to live by and encourage others to do the same:* *"As a Comet, I pledge honesty, integrity, and service in all that I do."*
UT Dallas Syllabus Policies and Procedures	*The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.* *Please go to http://go.utdallas.edu/syllabus-policies for these policies.*

Email Use

The University of Texas at Dallas recognizes the value and efficiency of electronic mail communication between faculty/staff and students. At the same time, email raises some issues concerning security and the identity of everyone in an email exchange. The University encourages all official student email correspondence to be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the University to maintain a high degree of confidence in the identity of all individuals corresponding and the security of the transmitted information. UTD furnishes each student with a free email account to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Student Accessibility

"The University of Texas at Dallas is committed to providing reasonable accommodations for all persons with disabilities. The syllabus is available in alternate formats upon request. If you are seeking classroom accommodations under the Americans with Disabilities Act (2008), you are required to register with the Office of Student Accessibility, located in the Administration Building, Suite 2.224. Their phone number is 972-883-2098, email: studentaccess@utdallas.edu, and the website is https://studentaccess.utdallas.edu. To receive academic accommodations for this class, please obtain the proper Office of Student Accessibility letter of accommodation and meet with me at the beginning of the semester."

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.