

# Course Syllabus

## Forensic Neuroscience

### Dr. Steve McWilliams



<b>Course #/Section #</b>	Special Topics ACN 6v81.0u1
<b>Term</b>	Spring 2024
<b>Days/Times/Room</b>	M 1:00-5:00 CRA 12.120
<b>Class Format</b>	Class meets in-person. There's NOT an online or asynchronous option for this class. Lectures will NOT be recorded or posted.

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### **Notice Regarding Course Content**

Some individuals find such subject matter disturbing and upsetting. Graphic images will be shown from time to time depicting real-life crimes. PLEASE read the [Class Participation and Awareness](#) under [General Course Information](#) before registering for this course.

### **Notice Regarding Class Recordings and Picture Taking**

Due to the graphic nature of the material being shown and discussed, student privacy as well as copyright laws, students are NOT ALLOWED to record any part of any lecture or any part of any discussion involving the instructor or students in the class. Likewise, students are NOT ALLOWED, for any reason, to take pictures, with a cell phone or any other device, of anything shown or depicted in class. I ask for your full cooperation in this matter and trust you will act responsibly and professionally during your participation in this course. Failure to comply with Course Policies per the Course Syllabus will result in immediate dismissal from the class and a referral to the [Office of Community Standards and Conduct](#).

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### **Professor Contact Information**

<b>Email Address</b>	ALL course-related communication must be sent via email through eLearning/official UTD email- I am the 'section instructor.' When emailing, please include your class in subject line, so that I know who you are...I teach more than one class!
<b>Office Location</b>	GR 4.714
<b>Office Hours</b>	M 11:30 - 12:30 Please email to set up an individual meeting- if necessary

### **General Course Information**

**Course Pre-requisites, Co-requisites, and/or Other Restrictions:** While there are no required prerequisites for the course, a background in neuroscience is helpful. Although there are no specific restrictions for enrolling in the undergraduate version of this course, students are strongly encouraged to assess their individual mental well-being before attending classes.

**Course Description:** In this course, we take a brief look into the world of forensic science and how neuroscience is being used in the forensic setting to understand and explain the criminal mind and criminal behavior. In doing so, we take an in-depth look at what is currently known regarding brain structure and neuroimaging as it relates to abnormal behavior and serial psychopaths.

**Course Content:** In this course, we look at the application of neuroscience to forensics, especially in an attempt to understand the criminal mind. This includes the use of lecture presentations, scientific article reviews, data interpretation, classroom discussions, and video presentations. In an attempt to understand the criminal mind and with the help of neuroimaging, we look at what is known about brain structure and function in relation to offending various behaviors. We also discuss neurolaw and the problems with connecting structural brain insults with abnormal -often violent- behaviors. In this class, we will also cover some of the basics of forensics, forensic investigation, and the application of such science and procedure in determining the manner of death.

## CLASS PARTICIPATION AND AWARENESS

This course provides an unusual opportunity to gain insightful knowledge about the various aspects of science, medicine, psychology, and neuroscience as they relate to the field of forensics. While most people will never have the opportunity to see into the world of forensics and forensic investigation, this course offers a unique glimpse into the intriguing world of forensics and how neuroscience and neuroimaging are being used in the area of forensics in an attempt to understand abnormal and often violent criminal behavior.

In this class, we look at and discuss real life criminal cases involving homicide. Such discussions will include an in-depth look into the various human behaviors associated with committing such crimes. Many individuals find such discussion -and the accompanying images- disturbing. Having personally worked in the field of forensics, I feel it is only right to inform you about the nature of the class and the topics that will be discussed.

While there is a certain curiosity and even fascination with forensics, there is an aspect of forensics that involves human behavior that is often upsetting and shocking to many individuals.

In addition to that mentioned above, controversial subject matter often arises as part of our discussions into the various behaviors that are typically associated with committing such crimes. Please be respectful of everyone in the class and their views, no matter how right or wrong they may be. If you are offended by such subject matter and discussion, you should excuse yourself from the class.

I am all for learning; however, your health and well-being should, and do come first! Please feel free to contact me at any time throughout the course should you find yourself feeling uneasy, stressed, or generally bothered by such subject matter.

The University of Texas at Dallas has several resources available to students to ensure your overall well-being. Please email either the Student Wellness Center [studentwellness@utdallas.edu](mailto:studentwellness@utdallas.edu) or the Student Counseling Center [counselingcenter@utdallas.edu](mailto:counselingcenter@utdallas.edu), if needed. Again, these individuals are available to help you with whatever issues you might be having.

**Attendance and Participation in this class is RESTRICTED! (See Below)**

Unless permission is granted by the instructor, attending class is RESTRICTED to UTD students officially enrolled in the course. You are required to have your UTD ID on you when coming to class. Since class attendance is restricted, you cannot invite anyone not enrolled in the class to sit in or accompany you in this class- unless assigned by ARC for official reasons and the instructor is notified in advance.

I use pictures of real-life crimes gathered from numerous resources. Although unlikely, any depiction or discussion of anyone or any case that you might have a relationship with is unintentional. If this should occur, please bring this to my attention as soon as possible.

**Student Learning Objectives/Outcomes:** After completing the course students should:

- Have a clear understanding of what forensic neuroscience is and how it is being used in the forensic setting
- Understand basic forensics and forensic investigation, especially with respect to criminal activity
- Explain how psychology and psychiatry relate to forensic neuroscience in understanding the criminal mind
- Describe and discuss brain structure and function as relates to various offending behaviors
- Describe the application of neuroimaging in the understanding of the criminal mind and offending behavior
- Be able to analyze various research methods and data as it relates to interpretation of offending behaviors
- Understand the legal implications of using neuroimaging in forensic neuroscience and in the legal setting

**Textbooks: None required!** While no textbooks are required for the class, below are a few suggested books for students just needing something to read. (Many textbooks dealing with forensics can be expensive, so I don't require you buy such books)

*-If you need a good basic neuroscience textbook, I recommend*

NEUROSCIENCE by Purves, 7<sup>th</sup> Edition, published by Oxford University Press.

*-If you need/want a general forensic criminalistics textbook, I recommend*

CRIMINALISTICS: AN INTRODUCTION TO FORENSIC SCIENCE by Richard Saferstein, PhD, 12<sup>th</sup> Edition, published by Pearson (Gives an overview of common techniques used in forensics)

*-If you need/want a detailed textbook that deals with the various aspects of forensics, I recommend*

FORENSIC PATHOLOGY FOR POLICE, DEATH INVESTIGATORS, ATTORNEYS, AND FORENSIC SCIENTISTS by Joseph Prahlow, MD, published by Humana Press (Gives an in-depth overview of forensic science from the viewpoint of a forensic pathologist)

### **Exams/Assignments/Grading/Course Policies:**

**Exam 1 is an online exam over basic neuro-structure and function (30%):** The neuro-structure and function exam will be taken online, outside of class during the days/times posted. The exam will cover basic neuro-structure and function as discussed in class. The exam is not timed. You are allowed to use any outside resources except help from other individuals including your classmates. (You will be advised on when you need to take notes!)

**Exam 2 is a take-home exam (30%):** Exam questions will be posted on eLearning at least one week before the due date. Questions can be answered using your notes from class discussions and the internet. Take-home exams **MUST** be TYPED using Microsoft word and SUBMITTED to Turnitin via eLearning as a word-doc on the day due.

**Writing Assignment (20%):** Students will write a 5-page paper over a topic to be assigned. Papers must be typed using Microsoft word, single-spaced, and submitted through Turnitin via eLearning on the day due. Topic will be discussed later in the course. A grading rubric will be posted before papers are due.

**Article Review (20%):** Students will write a 1–2-page (one page is okay) review over an article posted in class. Papers must be typed using Microsoft word, single-spaced, and submitted through Turnitin via eLearning on the day due.

Students will submit writing assignments through Turnitin. The link will be uploaded the day the assignment is due. Failure to submit the assignment on time will result in a letter grade off for everyday late, unless preapproved, no exceptions.

**Missed Exams/Missed or Late Assignments:** No makeup exam or assignment will be given unless preapproved by the instructor or you were hospitalized during that time. Prior notification of instructor, for example just sending me an email, does not itself imply approval. The only possible excuse for missing an exam (without prior notification and approval) is that you were either hospitalized at the time of the exam (with an IV in your arm or are unconscious) or jailed the day of the exam (I do not want to know why). Prior approval for missing an exam is typically only given for (1) the need to attend an official UTD event for which you are an official UTD member (proof required), or (2) an emergency involving an immediate family member (proof of emergency is typically required). An immediate family member is defined as a spouse, parent, sibling, or your children. Any assignment/exam turned in late will have a letter grade deduction for every day it is late unless preapproved by the instructor. Any exam or assignment not completed by the end of the course will be given a grade of zero. There are no extra credit assignments, so please don't ask.

**Attendance:** Although I do not take weekly attendance, regular attendance during class sessions is recommended. Students who fail to participate in class regularly are inviting scholastic difficulty. With that said, please feel free to step out of the classroom and to excuse yourself from any of the lectures or videos should feel the need to do so.

**Final Grades:** The plus/minus grading system is NOT used in this course. A (90–100), B (80 - 89), C (70 - 79), D (60 - 69), F (59 or below)

### **UT Dallas Policies and Procedures**

#### **A WORD ABOUT THE SHARING OF CONFIDENTIAL INFORMATION**

Students considering sharing personal information in email, in person, or within assignments or exams should be aware that faculty members and teaching associates/assistants and graduate/research assistants are required by UT Dallas policy to report information about sexual misconduct to the UT Dallas Title IX Coordinator. Per university policy, Sexual Misconduct Policy - UTDBP3102, faculty have been informed that they must identify the student to the UT Dallas Title IX Coordinator. Students who wish to have confidential discussions of incidents related to sexual harassment or sexual misconduct should contact the Student Counseling Center (972-883-2575 or the 24/7 Crisis Hotline at 972-UTD-TALK or 972-883-8255), the, a health care provider in the Student Health Center (972-883-2747), a clergyperson (or other legally recognized religious advisor) of their choice, or an off-campus resource (e.g., rape crisis center, doctor, psychologist). Students who are sexually assaulted, harassed, or are victims of sexual misconduct, domestic violence, or stalking, are encouraged to directly report these incidents to the UT Dallas Police Department at 972-883-2222 or to the Title IX Coordinator at 972-883-5202. Additional information and resources may be found at <https://www.utdallas.edu/institutional-initiatives/title-ix/resources/>.

Information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please see <https://go.utdallas.edu/syllabus-policies> for these policies.

Information contained in the following link constitutes the University's policies and procedures on student conduct and academic integrity. Please see <http://conduct.utdallas.edu/integrity/> and <https://policy.utdallas.edu/utdsp5003>

**OSA/ADA:** It is the policy and practice of The University of Texas at Dallas to make reasonable accommodation for students with properly documented disabilities. However, written notification from the Office of Student AccessAbility (OSA) is required. If you are eligible to receive accommodation and would like to request it for this course, please discuss it with your professor and allow one-week advance notice. Students who have questions about receiving accommodations, or those who have, or think they may have, a disability (mobility, sensory, health, psychological, learning, etc.) are invited to contact OSA for a confidential discussion. OSA is located in the Student Services Building, SSB 3.200. They can be reached by phone at 972-883-2098, or by email at [studentaccess@utdallas.edu](mailto:studentaccess@utdallas.edu).

Students with a registered accommodation should be aware of course restrictions regarding recording of lectures, discussions, and picture taking. Under no circumstances are you or anyone else allowed to record any part of the class or take pictures of anything shown in class. SEE ABOVE under [Notice Regarding Class Recordings and Picture Taking](#).

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

## Topic, Assignment, and Exam Schedule

Date	Day	Topic	Reading
June 3	M	An Introduction to Forensics and Forensic Investigation	
June 10	M	Video: “Man’s Best Friend” The Role of Neuroscience in Forensics	Forensic Science Controversies, (Kaufman, 2017)
June 17	M	Forensic Neuroscience, the Criminal Mind, and Neuroimaging as Applied to Forensic Neuroscience	Forensic Neuroscience: Problems and Promises, Durrant, 2018
June 24	M	Basic Brain Functions and Behaviors Associated with Understanding the Criminal Mind of a Serial Killer	<b>Article Review DUE</b>
July 1	M	Video: Criminal Profiling- FBI profiling goes to work! Case Study: JM (video)	<b>EXAM I (posted online)</b>
July 8	M	Neurotrauma, Lesions, and Changes in Behavior Case Study: RH (video)	What Can We Learn About Emotion by Studying Psychopathy (Marsh, 2013)
July 15	M	Neurobiology of Sexual Behavior and Serial Sadistic Psychopaths Case Study: GR (video)	<b>Writing Assignment DUE</b>
July 22	M	Emotions and the Regulation of Emotions Case Study: JD (video)	
July 29	M	Psychopathy, ASPD, and CD	<b>EXAM 2 (posted online)</b>
Aug 5	M	Serial Psychopathy and the concept of “Evil”	