FUNCTIONAL BRAIN IMAGING
ACN 6310 - HCS 6310
Spring, 2021

Instructor:	Dr. Bart Rypma
Email addresses:	Bart.Rypma@utdallas.edu
Course Credits:	3
Dates:	Tuesdays, Thursdays, 2:30PM- 3:45PM
Location:	No Meeting Room
Office Hours:	By appointment.
TA	Irene Zhao
Office Hours:	By appointment; IreneYZ@utdallas.edu

Course Description: This course explores in-depth topics in brain imaging such as neuroimaging detection systems (primarily MRI), experimental design, statistical techniques in image analysis, clinical applications of functional neuroimaging, and reviews of pertinent literature using functional brain imaging to illuminate various cognitive and perceptual processes, such as language, memory, hearing and vision.

Text: Functional Magnetic Resonance Imaging, Third Edition, by Huettel, Song, and McCarthy; Sinauer Associates Publishers, 2014.

Course Objectives:

1. Students will be able to discuss the underlying principles of fMRI.
2. Students will be able to describe relationships between functional brain imaging measures and the corresponding CNS physiology.
3. Students will be able to analyze functional brain imaging data using commonly available software.
4. Students will be able to assess the appropriateness of functional brain imaging techniques applied to research as represented by peer-reviewed publications.
5. Students will be able to formulate hypotheses of CNS function and design fMRI experiments to test these hypotheses using modern functional brain imaging techniques.

Grading: 50% of your grade in the course will depend on your performance on exams, 15% will depend on your homework assignments, 25% will depend on your in-class presentation, and 10% on general class participation. Your grades will be calculated as follows: 90-100% = A, 80-89% = B, 70-79% = C, 60-69% = D, < 60 = F.

Homework: There will be weekly homework assignments requiring students to answer questions on material to be covered in class that week. The assignments will be made available at the end of the lecture and will due one week after they are given. ***Late homework is not accepted.***

Exams: There will also be a midterm exam and final exam, both ***take-home***. ***Late exams are not accepted.***

Lab: There will be laboratory assignments for most weeks of the semester, as indicated in the syllabus schedule.

Class presentations: Each student will give two oral reviews of a relevant peer-reviewed publication via Microsoft Teams. ***No make-up presentations will be allowed.*** The first presentation will be a review of the literature relevant to the article. The second presentation will be a critical oral review of the article (talks will range between 15-20 min depending on class size). You will also provide a one-page written review prior to the second in-class presentation. Briefly, your written review will critically assess the following features of the paper you choose:

1) purpose: describe the fundamental purpose of the study, and how it relates to the discipline.
2) method: describe the experiment and determine its appropriateness to the purpose.
3) results: present major findings and an assessment of whether the analyses are valid.
4) conclusions: summarize the conclusions and discuss whether they are justified based on the results.

Class Presentation Format:

First Presentation: This presentation should function as a general overview of the study, but more importantly, it should expound the theoretical context surrounding the article you choose, the relevant prior literature, specific research question(s), hypotheses being tested, authors' predictions, and an overview of the methods.

Second Presentation: This presentation should function as a more complete description of the article's methods and results, but more importantly, should function as a critique of the study based on what you have learned about fMRI during the semester. Extensive coverage and critique of the research methodology, results, and conclusions are required.

Class Schedule

Date	Topic	Readings and Due
1/19	Overview & Introduction	Huettel et al.: Ch 1
1/21	Historical Perspectives	(Article choice due)
1/26	MRI Scanners – What they are and what they do	Huettel et al.: Ch 2-3
1/28	MR Physics, Basic Principles, Pulse Sequences	(Assignment 1 due)
2/2	Principles of MR Image Formation: Contrasts and Acquisitions	Huettel et al.: Ch 4-5
2/4		(Assignment 2 due)
2/9	Overview of the Central Nervous System	Huettel et al.: Ch 6
2/11	*No Class (Snow Day)*	-
2/16	*No Class (Snow Day)*	-
2/18		-
2/23	The Biology and Physiology of the Neuron	Huettel et al.: Ch 6-7
2/25	Neural Activity, Synaptic Activity, Blood Flow and the Rise of the BOLD Signal	(Assignment 3 due: 2/26)
3/2	The BOLD Signal (Continued)	Huettel et al.: Ch 7-8
3/4	Signal and Noise Issues in fMRI	(Assignment 4 due)
3/9	Signal and Noise Issues in fMRI (Continued)	Huettel et al.: Ch 8
3/11	BOLD fMRI Imaging; Signal/Noise Issues	(Assignment 5 due)
3/16	*SPRING BREAK (No Class)*	Huettel et al.: Ch 8
3/18		(Assignment 6 due)
3/23	Preprocessing of fMRI Data: Alignment, Slice Timing, Motion Correction	-
3/25	Student Presentations I (Online) + **LECTURE MIDTERM EXAM (Take-home) POSTED, due 4/1 by 11:59 PM**	-
3/30	Experimental Design: Block and Event-Related Designs	Huettel et al.: Ch 9-10
4/1	Statistical Methods: Regressors & GLM	**Lecture Midterm Due by 11:59 PM**
4/6	Basic Statistical Tests	Huettel et al.: Ch 10-11
4/8	Basic Statistical Tests and the Influence of Individual Differences	(Assignment 7 due)
4/13	Advanced Methods	Huettel et al.: Ch 12-14
4/15	Combining Imaging Methods	-
4/20	Special Topics	Readings TBA
4/22	Special Topics/Guest Lecture (TBA)	Readings TBA
4/27	Special Topics/Guest Lecture (TBA)	(Assignment 8 due)
4/29	Student Presentations II (Online); **LECTURE FINAL EXAM (Take-home) posted**	-
5/4	**NO CLASS**	-
5/6	**LECTURE FINAL EXAM (Take-home) due by 11:59 PM**	**Lecture Final Due by 11:59 PM**

These descriptions and timelines are subject to change at the discretion of the Professors.

Background Reading: There is useful additional reading material in the form of textbooks and published reviews, as detailed below. Some of the review articles may be required reading for class.

Web Based Sources:

1. http://faculty.washington.edu/chudler/image.html
2. http://www.fil.ion.ucl.ac.uk/spm/doc/
3. http://www.mr-tip.com

4. http://mri-q.com

5. http://mindhive.mit.edu/imaging

Additional Books:

1. Brain, Vision, Memory: Tales in the History of Neuroscience. Charles G. Gross, The MIT Press: 1998.

2. Brain Mapping: The Methods. Arthur W. Toga and John C. Mazziotta. Academic Press 2002

3. Functional Magnetic Resonance Imaging: An Introduction to Methods. Eds. P. Jezzard, P.M. Matthews and S.M. Smith. Oxford University Press 2003

4. Quantitative Functional Brain Imaging with Positron Emission Tomography. Richard Carson, Peter Herscovitch, Margaret Daube-Witherspoon. Academic Press 1998

5. Functional MRI. C.T.W. Moonen and Peter A. Bandettini (Eds). Springer-Verlag 1999

6. Fundamentals of Functional Brain Imaging: A Guide to the Methods and their Applications to Psychology and Behavioral Neuroscience. Andrew C. Papanicolaou. Swets & Zeitlinger Publications 1998

7. Functional Brain Imaging. W.W.Orrison, J.D.Lewine, J.A.Sanders and M.F.Hartshorne. Mosby 1995

8. An Introduction to Functional Magnetic Resonance Imaging: Principles and Techniques. Richard B. Buxton. Cambridge University Press 2009

9. Statistical Analysis of fMRI Data. F. Gregory Ashby. MIT Press: 2011

Relevant Review Articles:

1. Abdelkarim, D., Zhao, Y., Turner, M. P., Sivakolundu, D. K., Lu, H., & Rypma, B. (2019). A neural-vascular complex of age-related changes in the human brain: Anatomy, physiology, and implications for neurocognitive aging. *Neuroscience & Biobehavioral Reviews*.

2. Iadecola, C. (2017). The neurovascular unit coming of age: a journey through neurovascular coupling in health and disease. *Neuron*, *96*(1), 17-42.

3. Magistretti, P. J., & Allaman, I. (2015). A cellular perspective on brain energy metabolism and functional imaging. *Neuron*, *86*(4), 883-901.

4. Hillman, E. M. (2014). Coupling mechanism and significance of the BOLD signal: a status report. *Annual review of neuroscience*, *37*, 161-181.

5. Whitfield-Gabrieli S & Ford JM (2011). Default mode network activity and connectivity in Psychopathology. Annual Review of Clinical Psychology 8:18.1-18.28

6. Attwell, D., Buchan, A. M., Charpak, S., Lauritzen, M., MacVicar, B. A., & Newman, E. A. (2010). Glial and neuronal control of brain blood flow. *Nature*, *468*(7321), 232.

7. Cauli, B., & Hamel, E. (2010). Revisiting the role of neurons in neurovascular coupling. *Frontiers in neuroenergetics*, *2*, 9.

8. Rubinov, M., & Sporns, O. (2010). Complex network measures of brain connectivity: uses and interpretations. Neuroimage, 52(3), 1059-1069.

9. Raichle, M.E. (2009). A paradigm shift in functional brain imaging. *The Journal of Neuroscience, 29,* 12729 – 12734.

10. Buckner RL, Andrew-Hanna JR & Schacter DL (2008). The brain's default network. Ann NY Acad Science 1124: 1-38.

11. Hagmann P, Jonasson L, Philippe M, Thiran JP, Wedeen V and Meuli R (2006). Understanding diffusion MR imaging techniques: from scalar diffusion-weighted imaging to diffusion tensor imaging and beyond. Radiographics 26: S205 – S223.

12. Jacobs AH, Li1 H, Winkeler A, Hilker R, Knoess C, Rüger A, Galldiks N, Schaller B, Sobesky J, Kracht L, Monfared P, Klein M, Vollmar S, Bauer B, WagnerR, Graf R, Wienhard K, Herholz K, Heiss WD (2003). PET-based molecular imaging in neuroscience. Eur J Nucl Med Mol Imaging 30:1051–1065

13. Blasberg R (2002). Imaging Gene Expression and Endogenous Molecular Processes: Molecular Imaging. Journal of Cerebral Blood Flow & Metabolism 22:1157–1164

14. Desmond JE, Fiez JA (1998). Neuroimaging studies of the cerebellum: language, learning and memory. Trends in Cognitive Sciences 2(9): 355-361

Articles for Presentation:

(You may choose other functional imaging articles if you wish, but they must be cleared with Dr. Rypma)

1. Aizenstein, H. J., Clark, K. A., Butters, M. A., Cochran, J., Stenger, V. A., Meltzer, C. C., ... & Carter, C. S. (2004). The BOLD hemodynamic response in healthy aging. *Journal of Cognitive Neuroscience*, *16*(5), 786-793.

2. Yue, Q., Martin, R. C., Hamilton, A. C., & Rose, N. S. (2018). Non-perceptual regions in the left inferior parietal lobe support phonological short-term memory: Evidence for a buffer account? *Cerebral Cortex*, *29*(4), 1398-1413.

3. Grinband, J., Steffener, J., Razlighi, Q. R., & Stern, Y. (2017). BOLD neurovascular coupling does not change significantly with normal aging. *Human brain mapping*, *38*(7), 3538-3551.

4. Fegen, D., Buchsbaum, B. R., & D'Esposito, M. (2015). The effect of rehearsal rate and memory load on verbal working memory. *NeuroImage*, *105*, 120-131.

5. Baglio, F., Blasi, V., Falini, A., Farina, E., Mantovani, F., Olivotto, F., ... & Bozzali, M. (2011). Functional brain changes in early Parkinson's disease during motor response and motor inhibition. *Neurobiology of aging*, *32*(1), 115-124.

6. Bonakdarpour, B., Parrish, T. B., & Thompson, C. K. (2007). Hemodynamic response function in patients with stroke-induced aphasia: implications for fMRI data analysis. *Neuroimage*, *36*(2), 322-331.

7. Brosch, T., Coppin, G., Schwartz, S., & Sander, D. (2011). The importance of actions and the worth of an object: dissociable neural systems representing core value and economic value. *Social cognitive and affective neuroscience*, nsr036.

8. Faraco, C. C., Unsworth, N., Langley, J., Terry, D., Li, K., Zhang, D., ... & Miller, L. S. (2011). Complex span tasks and hippocampal recruitment during working memory. *NeuroImage*, *55*(2), 773-787.

9. Haller, S., Birbaumer, N., & Veit, R. (2010). Real-time fMRI feedback training may improve chronic tinnitus. *European radiology*, *20*(3), 696-703.

10. Heinzel, S., Lorenz, R. C., Pelz, P., Heinz, A., Walter, H., Kathmann, N., ... & Stelzel, C. (2016). Neural correlates of training and transfer effects in working memory in older adults. *Neuroimage*, *134*, 236-249.

11. O'brien, J. L., O'keefe, K. M., LaViolette, P. S., DeLuca, A. N., Blacker, D., Dickerson, B. C., & Sperling, R. A. (2010). Longitudinal fMRI in elderly reveals loss of hippocampal activation with clinical decline. *Neurology*,*74*(24), 1969-1976.

12. Pasley, B. N., Inglis, B. A., & Freeman, R. D. (2007). Analysis of oxygen metabolism implies a neural origin for the negative BOLD response in human visual cortex. *Neuroimage*, *36*(2), 269-276.

13. Ramaekers, J. G., Kuypers, K. P., Wingen, M., Heinecke, A., & Formisano, E. (2009). Involvement of inferior parietal lobules in prospective memory impairment during acute MDMA (ecstasy) intoxication: an event-related fMRI study. *Neuropsychopharmacology*, *34*(7), 1641-1648.

14. Viard, A., Piolino, P., Desgranges, B., Chételat, G., Lebreton, K., Landeau, B., Young, A., De La Sayette, V., & Eustache, F. (2007). Hippocampal activation for autobiographical memories over the entire lifetime in healthy aged subjects: an fMRI study. *Cerebral Cortex*, *17*(10), 2453-2467.

15. West, K. L., Zuppichini, M. D., Turner, M. P., Sivakolundu, D. K., Zhao, Y., Abdelkarim, D., ... & Rypma, B. (2019). BOLD hemodynamic response function changes significantly with healthy aging. *Neuroimage*, *188*, 198-207.

UT Dallas Syllabus Policies and Procedures

The information below constitutes the University's policies and procedures segment of course syllabi and may be referenced by faculty members in their course syllabi.

Please use the following permanent address when referring to this page: https://go.utdallas.edu/syllabus-policies

Sharing 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/.

Technical Support

If you experience any issues with your UT Dallas account, contact the UT Dallas Office of Information Technology Help Desk via e-mail at assist@utdallas.edu or via telephone at 972-883-2911.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The services include a toll-free telephone number for immediate assistance (1-866-588-3192), email request service at elearning@utdallas.edu, and an online chat service. Please use this link to access the UTD eLearning Helpdesk: https://ets.utdallas.edu/elearning/helpdesk.

Field Trip Policies, Off-Campus Instruction and Course Activities

Off-campus, out-of-state, foreign instruction/travel, and course-related field trip activities are subject to state law and university policies and procedures regarding travel and risk-related activities.

Detailed information regarding this policy, in accordance to *Texas Education Code*, Section 51.950, can be accessed through the UT Dallas Policy Navigator, https://policy.utdallas.edu/utdbp3023, and at https://www.utdallas.edu/ehs/rm/insurance/travel-related-risk/. Additional information is available from the office of the school dean.

Student Conduct and Discipline

The University of Texas System (Regents' Rule 50101) and UT Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the Student Complaints Resources in the online UT Dallas Undergraduate Catalog, https://catalog.utdallas.edu/now/undergraduate/resources/student-complaints and the Graduate Catalog, https://catalog.utdallas.edu/now/graduate/resources/student-complaints.

UT Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the Student Code of Conduct, UTDSP5003 (https://policy.utdallas.edu/utdsp5003). Copies of these rules and regulations are available to students in the Office of Community Standards and Conduct, where staff members are available to assist students in interpreting the rules and regulations (SSB 4.400, 972-883-6391) and online at https://www.utdallas.edu/conduct/.

A student at the University neither loses their rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating its standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Social Media Use

The Student Code of Conduct includes behaviors conducted via any digital platform. Students may not use any digital platform to seek or provide unauthorized assistance for any assignment done for academic credit. Students may not use any digital platform to impersonate or represent any person other than themselves. Please consult with your instructor regarding authorized assistance.

Academic Integrity

The faculty expects from its students a high-level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrates a high standard of individual honor in his or her scholastic work. See https://www.utdallas.edu/conduct/integrity/.

Academic Dishonesty: Academic dishonesty can occur in relation to any type of work submitted for academic credit or as a requirement for a class. It can include individual work or a group project. Academic dishonesty includes plagiarism, cheating, fabrication, and collaboration/collusion. In order to avoid academic dishonesty, it is important for students to fully understand the expectations of their professors. This is best accomplished through asking clarifying questions if an individual does not completely understand the requirements of an assignment.

Additional information related to academic dishonesty and tips on how to avoid dishonesty may be found here: https://www.utdallas.edu/conduct/dishonesty/.

Copyright Notice

It is the policy of UT Dallas to adhere to the requirements of the United States Copyright Law of 1976, as amended, (*Title 17, United States Code*), including ensuring that the restrictions that apply to the reproduction of software are adhered to and that the bounds of copying permissible under the fair use doctrine are not exceeded. Copying, displaying, reproducing, or distributing copyrighted material may infringe upon the copyright owner's rights. Unauthorized distribution of copyrighted material, including unauthorized peer-to-peer file sharing, may subject students to appropriate disciplinary action as well as civil and criminal penalties. Usage of such material is only appropriate when that usage constitutes "fair use" under the Copyright Act. For more information about the fair use exemption, see https://guides.lib.utexas.edu/fairuse/home. As a UT Dallas student, you are required to follow UT Dallas' copyright policy (UTDPP1043 at https://policy.utdallas.edu/utdpp1043) and the UT System's policy, UTS107 at https://www.utsystem.edu/board-of-regents/policy-library/policies/uts107-use-copyrighted-materials.

Email Use

UT Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. All official student email correspondence will be sent only to a student's UT Dallas email address and UT Dallas will only consider email requests originating from an official UT Dallas student email account. This allows the University to maintain a high degree of confidence in the identity of each individual corresponding via email and the security of the transmitted information. UT Dallas furnishes each student with a free email account that is to be used in all communication with university personnel. The Office of Information Technology provides a method for students to have their UT Dallas mail forwarded to other email accounts. To activate a student UT Dallas computer account and forward email to another account, go to https://www.utdallas.edu/oit/netid/self-service.

Class Attendance

Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty. Absences may lower a student's grade where class attendance and class participation are deemed essential by the instructor. In some courses, instructors may have special attendance requirements; these should be made known to students during the first week of classes.

Withdrawal from Class

The administration at UT Dallas has established deadlines for withdrawal from any course. These dates and times are published in the Comet Calendar (http://www.utdallas.edu/calendar) and in the Academic Calendar (http://www.utdallas.edu/academiccalendar). It is the student's responsibility to handle withdrawal requirements from any class. In other words, a professor or another instructor cannot drop or withdraw any student unless there is an administrative drop such as the following:

- Not meeting the prerequisites for a specific course
- Not satisfying the academic probationary requirements, resulting in suspension
- An Office of Community Standards and Conduct request
- Not making appropriate tuition and fee payments
- Enrollment is in violation of academic policy
- Not admitted for the term in which they registered

It is the student's responsibility to complete and submit the appropriate forms to the Registrar's Office and ensure that he or she will not receive a final grade of "F" in a course if he or she chooses not to attend the class after being enrolled.

Student Grievance Procedures

Procedures for student grievances are found in university policy UTDSP5005 (https://policy.utdallas.edu/utdsp5005). In attempting to resolve any student grievance regarding disputes over grades, application of degree plan, graduation/degree program requirements, and thesis/and dissertation committee, adviser actions and/or decisions, evaluations, and/or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originated.

Incomplete Grade Policy

As per university policy, incomplete grades may be given at the discretion of the instructor of record for a

course, when a student has completed at least 70% of the required course material but cannot complete all requirements by the end of the semester. An incomplete course grade (grade of 'I') must be completed within the time period specified by the instructor, not to exceed eight (8) weeks from the first day of the subsequent long semester. Upon completion of the required work, the grade of 'I' may be converted into a letter grade (A through F). If the grade of Incomplete is not removed by the end of the specified period, it will automatically be changed to a grade of F. The incomplete grade policy is included in the online UT Dallas Undergraduate Catalog, https://catalog.utdallas.edu/now/undergraduate/policies/academic#incomplete-grades and the Graduate Catalog, https://catalog.utdallas.edu/now/graduate/policies/grades#grade-of-i-incomplete.

Accommodations for Students with Disabilities

It is the policy and practice of UT Dallas to make reasonable accommodations for students with properly documented disabilities. If you are a student with a disability and believe you will need academic accommodations for this class, you are encouraged to register with the Office of Student AccessAbility (OSA). Some aspects of the course, the assignments, the in-class activities, and the way the course is typically taught may be accommodated to facilitate your participation and progress. OSA will assist you in determining academic accommodations that are appropriate for your situation. Any information you provide is private and confidential and will be treated as such. To avoid any delay, please contact OSA as soon as possible. Please note that accommodations are not retroactive and disability accommodations cannot be provided until an OSA Letter of Accommodation has been given to the instructor. 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, AD 2.224 They can be reached by phone at 972-883-2098, or by email at studentaccess@utdallas.edu.

Religious Holy Days

UT Dallas will excuse a student from class or other required activities, including examinations and travel time for the observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, of the *Texas Tax Code*.

Students are encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment.

Excused students will be allowed to take missed exams or complete assignments within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the President of UT Dallas or from the President's designee. The chief executive officer or designee must take into account the legislative intent of *Texas Education Code* 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

This information is also included in the online UT Dallas Undergraduate Catalog, https://catalog.utdallas.edu/now/undergraduate/policies/religious-holy-days, and the Graduate Catalog, https://catalog.utdallas.edu/now/graduate/policies/religious-holy-days.

Making a False Alarm or Report Involving a Public or Private Institution of a Higher Education

Making a false threat at any Texas higher education institution is considered a **State Jail Felony**, not a Class A misdemeanor, according to a law passed by the Texas Legislature.

This legislation was enacted in response to several threats in past years at several universities across the U.S. that disrupted classes and prompted evacuation of campus property, even though the reports turned out to be a hoax.

This law relates to the offense of making or causing a false alarm or report involving a public or private institution of higher education. A person commits an offense under Section 42.06, *Texas Penal Code*, if he or she knowingly initiates, communicates or circulates a report of a present, past, or future bombing, fire, offense, or other emergency that he or she knows is false or baseless and that would ordinarily:

1. Cause action by an official or volunteer agency organized to deal with emergencies;
2. Place a person in fear of imminent serious bodily injury; or
3. Prevent or interrupt the occupation of a building, room, place of assembly, place to which the public has access, or aircraft, automobile, or other mode of conveyance.

An individual adjudged guilty of a state jail felony shall be punished by confinement in a state jail for any term of not more than two years or less than 180 days and, in addition to confinement, may be punished by a fine not to exceed $10,000.

UT Dallas students should be aware that the State of Texas takes these threats seriously, and the legal consequences, which are severe, go beyond anything that the University's disciplinary committee can address. This information is also included in the online UT Dallas Undergraduate Catalog, https://catalog.utdallas.edu/now/undergraduate/policies/false-alarms and in the Graduate Catalog, https://catalog.utdallas.edu/now/graduate/policies/false-alarms.

Interactive Campus Map – Locate Severe Weather Shelters, Elevators, and Bathrooms

The interactive campus map (http://www.utdallas.edu/maps/) allows users to search for severe weather shelter areas in each building. On the map, click on a building and select "Storm Shelters" from the "Find" drop-down menu. Remember, a severe weather shelter area is usually any interior room without windows, such as a restroom, hallway, conference room, or office. Try to find shelter on the lowest floor of the building and stay away from large auditoriums or gyms. Users can also use the same map to locate elevators and bathrooms.

Resources to Help You Succeed

All Students

The **Comet Cupboard** is a UT Dallas food pantry initiative dedicated to helping students in need. The Comet Cupboard is located in MC 1.604, on the first floor of the McDermott Library, and can be contacted by calling 972-883-2709.

Comet Cents provides financial literacy to students with the peer-to-peer model. This money management center provides one-on-one appointments and workshops throughout the semester. Comet Cents works to help students improve their financial situation with topics such budgeting, credit card debit, investing and other personal finance areas.

Intercultural Programs provides a host of transition programs for international students and intercultural competency trainings for all students. They are located in SSB 3.6, on the third floor of the Student Services Building. Their phone number is 972-883-7430.

The **Student Counseling Center** offers confidential services to students either for individual appointments or as part of groups. Initial appointments must be made in person in the Student Counseling Center, which is located in SSB 4.600, on the fourth floor of the Student Services Building. Their main number is 972-883-2575 and the 24/7 Crisis Hotline is 972-883-8255 (972-UTD-TALK).

The **Testing Center**, run by the Education Technology Services, offers a 300-seat computer lab, providing UT Dallas students access to a comfortable and secure test environment for online/paper exams, quizzes, instructional testing, and assessments. The Testing Center is located in Room 11.175, the first floor of the Synergy Park North 2 (SP2) building and can be contacted by calling 972-883-5497 or 972-883-6735. See https://ets.utdallas.edu/testing-center.

If you experience issues taking an exam in eLearning, please contact the UTD eLearning Helpdesk: https://ets.utdallas.edu/elearning/helpdesk.

Undergraduate Students

Student Success Center

The **Student Success Center (SSC)** offers assistance to students in the areas of writing, mathematics, communication, multiple science fields, study skills, and other academic disciplines. These services are available through individual appointments, small group appointments, drop-in labs, workshops, and weekly reviews. All undergraduate students enrolled at UT Dallas are eligible to participate in these services. Not all courses will be supported by all services. Please check the website at the beginning of each semester to find out which courses are supported by which services.

The SSC is divided into six units and undergraduate students are able to use as fits their course needs each semester. All services are free of charge.

In **Academic Success Coaching (ASC)**, students can receive help with time management, goal setting, test

preparation, and various other study techniques and strategies. Student coaches offer one-on-one appointments and workshops throughout the semester.
The **Communication Lab (CommLab)** offers one-on-one and group appointments where students can gain practical feedback for improving oral and group presentations.
The **Peer-Led Team Learning (PLTL)** program provides an active, engaged learning experience for students enrolled in potentially difficult gateway courses. Students who register with PLTL will meet in small groups once a week and are expected to attend every session. Students who regularly attend sessions typically earn a half to a whole letter grade higher than students who do not participate in the PLTL program.
Peer Tutoring (PT) offers math and science tutoring assistance for many of the historically challenging undergraduate courses at UT Dallas. The sessions are designed to address students' individual questions and needs; however, the tutors do not provide answers for homework, quizzes, or exams. Peer Tutoring services include drop-in tutoring for most 1000 and 2000 level courses, one-on-one appointments for a limited number of 3000 and 4000 level courses, and weekly reviews the timings of which vary by semester.
Supplemental Instruction (SI) provides peer-facilitated weekly study sessions for students taking historically difficult courses. SI sessions encourage active, collaborative learning based on critical thinking and transferable study skills. SI Leaders attend lectures and take notes, just like the enrolled students. Students should check the SSC website for supported subjects and session times.
The **Writing Center (WC)** is a collaborative learning environment for students interested in developing stronger writing skills. One-on-one appointments are offered, as are weekly workshops. Scheduling an appointment is strongly recommended, but drop-in hours are also available.
The Student Success Center's main office is located in the McDermott Library Building on the first floor, MC 1.302, and can be contacted by calling 972-883-6707 or by sending an email to ssc@utdallas.edu.

Graduate Students

The **Center for Teaching and Learning** supports graduate students, especially teaching assistants through teaching certificates, workshops on pedagogy, and reading groups on emerging educational issues. They are located in MC 2.402, on the first floor of the McDermott Library. The Center's phone number is 972-883-2247.
The **Office of Graduate Education Fellowship Office** offers workshops on fellowship and grant writing, including a Grant Writing Certificate program. Students applying for external funding can schedule appointments to find funding and to develop their applications. The Fellowship Office is located in FA 3.104, on the second floor of the Founders Annex. The office's phone number is 972-883-4568.
The **Office of Graduate Education Writing Services** offers workshops on writing as well as one-on-one appointments, writing groups, and writing retreats to help graduate students improve their writing skills. The Writing Services Office is located in FA 3.104, on the second floor of the Founders Annex. Appointments can be made via email at hickmann@utdallas.edu.

University Resources

Additional university resources, "Resources for Study and Campus Life" are listed in the online Undergraduate Catalog, https://catalog.utdallas.edu/now/undergraduate/resources/index and the Graduate Catalog, https://catalog.utdallas.edu/now/graduate/resources/index.

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