**CHEM 1181:** Advanced Chemical Technologies Laboratory

fall 2018 (ACT 2)

**Instructors:**

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 GTA: M, T, R, F 9 - 10 am, or by appt. (ariel.obrien@mavs.uta.edu)

GTA: Mon. & Tues 3 - 5 pm, or by appt. (horacio.barraganpeyrani@mavs.uta.edu)

**Sections; Time and Place of Class/Lab Meetings:**

|  |  |  |  |
| --- | --- | --- | --- |
| Section | Day | Time | Place |
| CHEM 1181-001 #88956 | Wedn. | 1 - 4:50 pm | TH 115 (1 - 2 pm)CPB 132 (2 - 4:50 pm) |
| CHEM 1181-002 #90769 | Wedn. | 1 - 4:50 pm | TH 115 (1 - 2 pm)CPB 132 (2 - 4:50 pm) |
| CHEM 1181-003 #90770 | Thurs. | 1 - 4:50 pm | PKH 107 (1 - 2 pm)CPB 132 (2 - 4:50 pm) |
| CHEM 1181-004 #90771 | Thurs. | 1 - 4:50 pm | PKH 107 (1 - 2 pm)CPB 132 (2 - 4:50 pm) |

 **Description of Course Content:** General, analytical, and synthetic chemistry concepts will be reinforced through problem- and inquiry-based laboratory activities. The Advanced Chemical Technologies track for majors will introduce research and scientific methods in the context of instructor and student-selected research problems. Hands-on experience in the laboratory will be supplemented with mini-lectures, modules, and web resources to increase student readiness for scientific discovery. Students will also learn about contemporary challenges and advances in chemistry and biochemistry. If a student withdraws from CHEM 1181, the student must also withdraw from CHEM 1341. Prerequisite: Concurrent enrollment in CHEM 1341 or equivalent credit. *Completion of this course in conjunction with CHEM 1341 is equivalent to the completion of CHEM 1441.*

**Student Learning Outcomes:** To provide students with the theories and skills needed to participate in modern scientific research, and to introduce students to the frontiers of advanced chemical technologies and current research challenges, each student in this course will:

1. Propose and evaluate the importance of questions that guide research,

2. Create and execute research plans that test student-generated hypotheses,

3. Work responsibly in small research teams (2-4) and as a part of a larger cohort of students (<18), pursuing various aspects of a broader research project,

4. Communicate with their peers, through 15 min research presentations, about the significance and specific motivation of a student-selected research project, experimental results and an interpretation of those results, and how this experience has informed their view of science,

5. Provide a written reflection/response to at least one current topic in chemistry and biochemistry

6. Identify the motivation, methods, results, and implication of research shared by guest lecturers

**Required Textbooks and Other Course Materials:**

Personal LinkedIn Account (free), Chromacademy Account (free), Laboratory Notebook (provided)

**Descriptions of major assignments and examinations:**

**LinkedIn Profile and Interactions**: Each student should have a personal LinkedIn account. Students should request to join the “ACT 2: Advanced Chemical Technologies at UTA 2018” and “UT Arlington Department of Chemistry and Biochemistry” groups. In the ACT 2 LinkedIn group, a series of news articles and commentaries relevant to the course and modern chemistry topics will be posted. We encourage constructive discussion through the LinkedIn forum on all postings. However, as a minimum, throughout the semester, each student is expected to make at least three - five substantive and thoughtful comments in response to the various postings. Original posts of interest can also be shared by ACT students to the ACT 2 page, and these will count towards LinkedIn participation for the course.

We envision that your interaction with your ACT 2 group on LinkedIn (and your peers in this course) will continue through your time at UT Arlington. Further, we envision that your profile can become a place where you can disseminate and brand your efforts and experiences (a sort of “research profile”), so that your involvement in ACT becomes a multiplier in your eventual efforts to seek further schooling and employment.

**Online Learning Modules and Assessments**: In addition to learning how to work and communicate in science, we must continually learn the tools that modern chemists use in their research. There are no defined course materials to match the curriculum you will follow in this lab course. As such, it is important to start to familiarize yourself with relevant topics that might be more advanced than you have covered thus far in your schooling. The instructors have chosen a series of online learning modules and videos that should be completed weekly before coming to lab. Many of these will be taken from an online resource called Chromacademy ([www.chromacademy.com](http://www.chromacademy.com)). A free registration is afforded to the resources for all university students for a period of five years (click the “University Sponsorship” tab in the middle panel of the homepage to subscribe). Each assigned module is accompanied by an assessment that must be completed prior to lab meeting in the week assigned. *A screenshot of your dashboard should be emailed to the GTA before noon on Wednesday/Thursday (the day that your lab meets).*

A schedule of learning modules and assessments can be found in the detailed schedule below. Some modules will be videos or readings, with an appropriate link provided, and a separate assessment will be provided electronically. Expect to be able to discuss the techniques and theories introduced in the modules during our briefing. You will learn these techniques at a deeper level of understanding as you implement them in your CMBs and SAPs.

“UTAchemistry” on YouTube also has a plethora of informational videos on how to use particular instruments, reviews of chemistry concepts, organic synthesis skills and techniques, etc.: <https://www.youtube.com/user/UTAchemistry/videos?disable_polymer=1>

**CheMythBusters (CMB)**: Students will select a CMB to examine, frame a good and relevant scientific question, and then design and carry out a research plan to test the veracity of the CMB. Pairs of students to work together will be randomly assigned. Each pair will rank their top 3 CMB topic to examine and submit those choices to the instructor. Choices will be considered to assign 6 total CMB projects to be examined (i.e., two pairs of students will independently investigate a common CMB). Written procedures will be prepared, requested materials (~$50 max request per group) will be acquired, experiments will be performed (over approximately 2 lab periods), and the results of the work will be presented. Groups with common CMB projects will collaborate to prepare and deliver a 10 min. presentation on their collective work and results. *Students are not allowed to consult external materials regarding ideas to design and perform the CMB project (please be reminded of the UT Arlington Honor Code regarding this and other similar requests). As with most scientific pursuits, there is not necessarily one correct answer; it is more important to develop your inquiry skills and have fun exploring an interesting topic.*

**Synthesis and Analysis Project (SAP) 1 and 2**: Students (with a new partner) will use modern synthetic and analytical techniques to investigate the scope and performance of a chemical reaction. Each group of students will be examining a different variable related to the synthesis and analysis. Approximately three lab periods has been dedicated to performing the experiments and analyzing results. Three lab periods are assigned to allow groups to test new ideas or refine their specific question through iteration of experiments. Groups will share their results with the class to paint a larger picture of the reaction and analytical results. Another new partner will be chosen for SAP 2.

**Scope of SAP 1:** Oxidation of alcohols; analysis by gas chromatography - mass spectrometry and infrared spectroscopy.

**Scope of SAP 2:** Chemical modification of amino acids; analysis by liquid chromatography-mass spectrometry and ultraviolet-visible (UV-Vis) spectroscopy

A requirement for each SAP project is preparation of a 250-word explanation of the real-world relevance of each SAP topic. One example should be chosen and briefly discussed (and referenced). Include one descriptive figure. Example(s) from your group should be used to communicate the background and significance of the topic in your Powerpoint presentation. For example, oxidation (SAP 1) is important in the degradation of environmental contaminants. The esterification or amidation of chemical species (SAP 2) is important to infer increased volatility, relative to unmodified acidic and amino groups (i.e., for improved gas chromatographic analysis). Note: Please come up with other examples than these.

*Grading*

 250-word explanation 50 pts

 Presentation 150 pts (see presentation evaluation rubric)

**CMB 2 Proposal**: Students—in pairs, and in collaboration with their instructors—will propose a topic and initial research plan to carry out a CheMythBuster during CHEM 1182 in the following semester. This proposal should be a maximum of 2 pages written—including a research question, motivation for your question, a general idea of how you might approach the problem, and expected outcomes. It will be due for grading on Friday, December 1st, 2017. This project need not be a popularized topic (such as on “Mythbusters”), but should include: A) some chemistry, B) ideally some use of techniques or concepts learned (or learnable), and C) a design that can be completed in 2 - 3 lab periods (i.e., 8 - 12 hours). We are hesitant to provide any more direction than this, because we are interested in your ideas and want you to be interested in what you choose. There will be ample time for discussion of possible projects with TAs and instructors prior to writing the proposal.

**Frontiers in Advanced Chemical Technologies (FACTs):** Over the course of the semester, five 1-hr presentations will be given by faculty members and industrial professionals regarding modern/important areas of chemical research. These will be presented on Fridays, as part of UNIV-SC-1131. Following the presentation, there will be some time for discussion, and it is also likely that the discussion will move to LinkedIn. The schedule of speakers for this semester are as follows:

1. F, 9/14/18, 1 pm: Curran Parpia, RCP Consulting Solutions, LLC, “Experiences with Start-Ups and Consulting”

2. F, 9/28/18, 1 pm: Dr. Zacariah Hildenbrand, Inform Environmental, LLC, “Development of Technologies for Recycling and Reuse of Produced Oilfield Waste”

3. F, 10/19/18, 1 pm: Dr. He Dong, UTA Chemistry & Biochemistry, “Nanomaterials for Anticancer and Antimicrobial Therapy Development”

4. F, 11/9/18 (Science Week), 1 pm: TBD (Keith Crandell)

5. F, 11/30/18, 1 pm: Dr. Sam Yang, Genentech, “Biopharmaceutical Drug Development, Impurity Profiling and Quality Control”

**Group Challenge Problem Sessions:** Throughout the semester we will use our laboratory briefing time to develop critical thinking and problem solving skills directly related to CHEM 1341. Challenge problems will be provided to the class and solved in groups of three, with each student playing a key role in the group. Answers will be presented publicly by the group reporter, a record of each group’s work will be collected from the group reader/recorder, and the group calculator will ensure that the proper equations and calculations are conducted. Our goal is to address problem solving strategies, common stumbling blocks, and study suggestions for preparing for advanced CHEM 1341 exam questions.

**Attendance:** At The University of Texas at Arlington, taking attendance is not required but **attendance is a critical indicator in student success**. Each faculty member is free to develop his or her own methods of evaluating students’ academic performance, which includes establishing course-specific policies on attendance. **In this laboratory course, we have deemed attendance to be imperative for the success of collaborative work. A single unexcused absence will negatively impact your final grade. Notification for excused absences should be communicated immediately to your lab partner and your GTA. Evidence of excuse should also be provided to your GTA, who will discuss the impact (and requisite make-up needed) with the course instructors.** While UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients “begin attendance in a course.” UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Blackboard. This date is reported to the Department of Education for federal financial aid recipients. **See below for Laboratory Make-Up Process.**

**Laboratory Notebooks:** Students will learn to keep careful and detailed notes of their laboratory work and preparation for research projects. A new laboratory notebook will be provided for you.

For experiments, your TA will be looking that you include the following items in pen:

 Table of Contents (TOC) entries

Date(s)

 Title/Name of Experiment

 Chemical Reaction(s) Equation, if applicable

Chemical and Reagent Details (MW, mmoles, mass, density, volume, and stoichiometry/concentration)

Theoretical and Observed Yields

Chemical Characterization Details (color, state, spectroscopic data)

Detailed Procedure

Observations during and following experiment

Conclusion(s)

Notes for Future Experiments

. . . all in a legible and logical format

You are encouraged to use your notebook to record essential non-experimental details as well: Planning and brainstorming as you prepare to perform experiments, and for taking important notes during meetings with faculty, TA’s, and outside speakers. These notes should also be dated, and a title or heading to each entry may be helpful for reference in the future. Remember to keep your TOC up to date.

Notebooks will be collected and checked at least twice during the semester. We will also be using your notebook to evaluate the effectiveness of the program; your faithful use of the notebook will improve your grade and help us improve the educational impact of the ACT courses.

**Other Requirements:**

**Mandatory Online Safety Training:** Students registered for this course must complete the University’s required “Lab Safety Training” prior to entering the lab and undertaking any activities. Students will be notified via MavMail when their online training is available. Once notified, students should complete the required module as soon as possible, but no later than their first lab meeting. Once completed, Lab Safety Training is valid for the remainder of the same academic year and must be completed anew in subsequent years. There are no exceptions to this University policy. Failure to complete the required training will preclude participation in any lab activities, including those for which a grade is assigned. Until all required Lab Safety Training is completed, a student will not be given access to lab facilities, will not be able to participate in any lab activities, and will earn a zero for any uncompleted work.

Accessing Online Training:

1. Login to Blackboard at [https://elearn.uta.edu](https://owa.uta.edu/owa/bugarin%40exchange.uta.edu/redir.aspx?SURL=xVao87HX2lwmx9D0uo85H1D-55kTe9zIvJQqbjIIskzCkMXz2KTSCGgAdAB0AHAAcwA6AC8ALwBlAGwAZQBhAHIAbgAuAHUAdABhAC4AZQBkAHUA&URL=https%3a%2f%2felearn.uta.edu) with your NetID and password.

2. Under My Blackboard tab, click Lab Safety Training.

3. Click Welcome from the left pane to start and follow the instructions.

All questions/problems with online training should be directed to the Blackboard Support Center either online or by calling 1-855-308-5542. General questions about the Lab Safety Training, including content should be directed to the Office of Environmental Health and Safety at (817) 272-2185 orehsafety@uta.edu

 **Required Lab Attire:** You will be exposed to hazardous chemicals in this class. Personal protective equipment (PPE) is required. You will not be admitted into the laboratory unless you follow these guidelines.

1. Goggles, gloves and aprons (provided by UTA) must be worn at all times .
2. Your shoes must cover the entire foot (No sandals, flip-flops, open-heel clogs—even with socks).
3. Contact lenses should not be worn in the lab.
4. Long hair should be tied back.
5. Electronic Devices (including phones) must be turned off during the laboratory.
6. Long pants and sleeves (highly recommended).
7. Tight-knit and natural materials are suggested over open-knit and synthetic materials.

 **Grading**:

CMB 1 150 pts

SAP 1 200 pts

SAP 2 200 pts

CMB 2 Proposal 200 pts

Online Modules Completion 150 pts

LinkedIn Discussions 50 pts

Notebook Checks 50 pts

 **1000 pts total**

Incomplete materials will result in a score of zero. Unexcused absences will be levied a 100 point penalty each at the end of the course grading. Communicate clearly, and as early as possible, with your TAs/Instructors if a conflict arises.

**Make-up Experiments**: Attendance is critical in laboratory courses. Students who miss more than two laboratories will be required to discuss continuation in CHEM 1181. If a laboratory is missed by documented excuse, students will be allowed to “make-up” the lost points by e.g., completing an additional Module and/or begin a new LinkedIn discussion thread, as deemed suitable by the instructors. (Though this option is available for making up excused absences, there is no opportunity for extra-credit at any point in the course.)

**Expectations for Out-of-Class Study**: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional three hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc. Proper scheduling of your time and early work will ensure that you do not have to spend excess amounts of time in any one particular week.

**APPROXIMATE SCHEDULE OF EVENTS/ASSIGNMENTS**

*As the instructors for this course, we reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Frank W. Foss and Kevin A. Schug*

**WEEK 1 (8/22-8/24)**

**Pre-lab: Mandatory Online Safety Training (blackboard, see above)**

**In-lab: Syllabus/Into; Laboratory Tour/Check-in; and “What is a good scientific question?”**

**Post-lab: Course Subscriptions (LinkedIn x 2 Groups, Chromacademy)**

**WEEK 2 (8/27-8/31)**

**Pre-lab: Learning Module A1.** Sample Prep/Solid Phase Extraction/Molecular Properties

* Remember to email your GTA a screenshot of your dashboard showing the module(s) you have completed and your score. You name (as being logged-in) should be visible on the screenshot

**In-lab: “The Scientific Method, Observation, and Serendipity”; Observations of a Reaction; Introduction to CheMythBusters**

**Post-lab: Remember to consider (and perform) LinkedIn Discussion requirement**

**WEEK 3 (9/3-9/7)**

**Pre-lab: Learning Module S1.** Drawing Organic Molecules **(**<https://youtu.be/8AwKNC1texM> - ignore references to hybridization)**; Read in LinkedIn:** The Discovery of Streptomycin

**In-lab: ; Challenge Problem 1; Developing and Following Procedures**

**Post-lab: CMB Procedure Development**

**WEEK 4 (9/10-9/14)**

**Pre-lab: Learning Module A2.** Basic Lab Skills/Errors

**In-lab: Scientific Literacy (Research Methods); 1st Semester Gen Chem. Lab. in 3 h**

**Post-lab: Remember to consider (and perform) LinkedIn Discussion requirement**

**FACT #1 (UNIV-SC-1131)**

**WEEK 5 (9/17-9/21)**

**Pre-lab: Learning Module S2.** Basic Lab Skills/Balances

**In-lab: Basic Statistics, Balances; Begin CMB Project!**

**Post-lab: Read Fun Statistics Article**

**WEEK 6 (9/24-9/28)**

**Pre-lab: Learning Module A3.** GC/Theory and Introduction of GC/Introduction

**In-lab: CMB Project Performance**

**Post-lab: Outline CMB presentation and plan for final project completion**

**FACT #2 (UNIV-SC-1131)**

**WEEK 7 (10/1-10/5)**

**Pre-lab: Learning Module S3.** TLC Basics (<https://youtu.be/e99nsCAsJrw>)

**In-lab: Challenge Problem 2; How to Make a Scientific Presentation; CMB Project Completion; Prepare Presentation**

**Post-lab: Finalize Presentation; Review Chemical Oxidation and Analysis for SAP1**

**Undergraduate Research Day (Friday October 5th)**

**WEEK 8 (10/8-10/12)**

**Pre-lab: Learning Module A4.** Infrared/Introduction to IR Spectroscopy

**In-lab: CMB presentations (8 min. each); TLC Demo (SAP 1 Context); Introduce details of CMB 2 proposal and due dates**

**Post-lab: Remember to consider (and perform) LinkedIn Discussion requirement**

**WEEK 9 (10/15-10/19)**

**Pre-lab: Learning Module S4.** Sample Prep/Solid Phase Extraction/Liquid-Liquid Extraction

**In-lab: SAP 1 Synthesis and Analysis Performance**

**Post-lab: Begin analysis of SAP 1 results and plan any final experiments/analyses**

**FACT #3 (UNIV-SC-1131)**

**WEEK 10 (10/22-10/26)**

**Pre-lab: Learning Module A5.** MS/Fundamental GC-MS/Introduction

**In-lab: Challenge Problem 3; SAP 1 Performance (retest synthesis and/or analysis); Data Analysis and Prep Presentations; Intro to SAP2**

**Post-lab: Review SAP 2 concepts; Refine SAP 1 presentations**

**WEEK 11 (10/29-11/2)**

**Pre-lab: Learning Module S5.** Filtration (<https://youtu.be/P-UBuAFxJiA>)

**In-lab: SAP 2 Synthesis and Analysis**

**Post-lab: SAP 2 data analysis and plan next experiments/analyses**

**WEEK 12 (11/5-11/9)**

**Pre-lab: Learning Module A6.** HPLC/The Theory of HPLC/Introduction

**In-lab:4 SAP 1 Presentations (8 min. each); SAP 2 Synthesis and Analysis**

**Post-lab:Prepare CMP Proposal; Recall LinkedIn Discussion Requirement**

**FACT #4 (UNIV-SC-1131)**

**WEEK 13 (11/12-11/16)**

**Pre-lab: Learning Module S6.** Reaction Work-Up I **(**[**https://youtu.be/DmvaOb1xb1o**](https://youtu.be/DmvaOb1xb1o)**)** and II **(**[**https://youtu.be/3DQj4dibr78**](https://youtu.be/3DQj4dibr78)**)**

**In-lab: Challenge Problem 4; Finish SAP 2; Analyze SAP 2 data; Prepare SAP 2 presentations; Discussion of CMB 2 proposals/procedures**

**Post-lab: Finalize SAP 2 presentations; Finalize CMB proposals**

**WEEK 14 (11/26-11/30)**

**Pre-lab: Complete course survey (SFS+)**

**In-lab: Challenge Problem 5; (study, finish projects, plan presentations)**

**Post-lab: CMB written proposals (2 page max)** **due F, 12/1/17**

**FACT #5 (UNIV-SC-1131)**

**WEEK 15 (12/3-12/7)**

**Pre-lab: Practice SAP 2 Presentations**

**In-lab: SAP 2 Presentations**

**Post-lab: Do well on your finals and enjoy the holiday break!**

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance**. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://wweb.uta.edu/aao/fao/>).

**Disability Accommodations:** UTArlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA), The Americans with Disabilities Amendments Act (ADAAA),* and *Section 504 of the Rehabilitation Act.* All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of **a letter certified** by the Office for Students with Disabilities (OSD).Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting: **The Office for Students with Disabilities, (OSD)**  [www.uta.edu/disability](http://www.uta.edu/disability) or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability).

Counseling and Psychological Services (CAPS) [www.uta.edu/caps/](http://www.uta.edu/caps/) or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

**Non-Discrimination Policy:** *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit* [*uta.edu/eos*](http://www.uta.edu/hr/eos/index.php)*.*

**Title IX Policy:** The University of Texas at Arlington (“University”) is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational *programs* or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated.*For information regarding Title IX, visit* [www.uta.edu/titleIX](http://www.uta.edu/titleIX) or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.

**Academic Integrity:** Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents’ Rule* 50101, §2.2, suspected violations of university’s standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student’s suspension or expulsion from the University. Additional information is available at<https://www.uta.edu/conduct/>.

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at<http://www.uta.edu/oit/cs/email/mavmail.php>.

**Campus Carry:** Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit<http://www.uta.edu/news/info/campus-carry/>

**Student Feedback Survey:** At the end of each term, students enrolled in face-to-face and online classes categorized as “lecture,” “seminar,” or “laboratory” are directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback via the SFS database is aggregated with that of other students enrolled in the course. Students’ anonymity will be protected to the extent that the law allows. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit<http://www.uta.edu/sfs>.

**Final Review Week:** for semester-long courses**,** a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures:** Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

**Student Support Services**:UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include [tutoring](http://www.uta.edu/universitycollege/current/academic-support/learning-center/tutoring/index.php), [major-based learning centers](http://www.uta.edu/universitycollege/resources/college-based-clinics-labs.php), developmental education, [advising and mentoring](http://www.uta.edu/universitycollege/resources/advising.php), personal counseling, and [federally funded programs](http://www.uta.edu/universitycollege/current/academic-support/mcnair/index.php). For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at<http://www.uta.edu/universitycollege/resources/index.php>.

**University Tutorial & Supplemental Instruction** (Ransom Hall 205): UTSI offers a variety of academic support services for undergraduate students, including: 60 minute one-on-one [tutoring](http://www.uta.edu/universitycollege/current/academic-support/learning-center/tutoring/index.php) sessions, [Start Strong](http://www.uta.edu/universitycollege/current/academic-support/learning-center/tutoring/start-strong.php) Freshman tutoring program, and [Supplemental Instruction](http://www.uta.edu/universitycollege/current/academic-support/learning-center/si/index.php). Office hours are Monday-Friday 8:00am-5:00pm. For more information visit [www.uta.edu/utsi](http://www.uta.edu/utsi) or call 817-272-2617.

**The IDEAS Center (**2nd Floor of Central Library) offers **FREE** tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. Students can drop in, or check the schedule of available peer tutors at www.uta.edu/IDEAS, or call (817) 272-6593.

**The English Writing Center (411 LIBR)**: The Writing Center offers **FREE** tutoring in 15-, 30-, 45-, and 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at https://uta.mywconline.com. Classroom visits, workshops, and specialized services for graduate students and faculty are also available. Please see [www.uta.edu/owl](http://www.uta.edu/owl) for detailed information on all our programs and services.

The Library’s 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library’s hours of operation.<http://library.uta.edu/academic-plaza>

**Librarian to Contact:** Antoinette Nelson (nelsona@uta.edu, 817-272-7433)

Library Tutorials [library.uta.edu/how-to](http://library.uta.edu/how-to) Subject and Course Research Guides [libguides.uta.edu](http://libguides.uta.edu/)

Research Coaches <http://libguides.uta.edu/researchcoach>

Chemistry Clinic: 318 SH, (2-5431)

**Emergency Phone Numbers**: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381