Freshman Research Initiative: Computational Materials CH369K-Techniques of Research
Fall 2018 (Unique Number: 50895)

Time and Place: M 5:00-6:00pm in Welch 2.140 *(Time and place is subject to change)*

Research Educator/Instructor
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Office hours: by appointment

Course Overview:
The purpose of this course is to expand upon the skills learned in the spring semester FRI course by performing research in the computational materials field. Students will either continue with their individual research projects from the previous semester, or choose new projects to investigate. The goals of the course are for students to:
  • gain the skills needed to conduct an individual research project
  • learn to effectively communicate research results verbally, visually, and in writing
  • gain skills needed to apply for future internships and research opportunities

Course Requirements:
The major course requirements are attending all meetings and completing assignments as outlined below. Additionally, students should have their laptop fully charged and ready to go at each meeting and during lab time. There are no required textbooks for this course, as most reading will come from peer-reviewed literature relevant to students research topic.

Course Format:
In this course you will be required to attend a weekly lab subgroup and individual meetings. A specific time for these meetings will be determined in the first two weeks of classes and will be posted on the course webpage. This course will require that students work on research in lab for a set number of hours per week. Below are the details of all the weekly meeting requirements in this course:

1. **Mandatory weekly meetings**: There will be two mandatory weekly meetings: one lab group meeting, and one individual or small group meeting.
   a. **Lab Group Meetings**: This weekly lab group meeting will be scheduled to discuss: 1) information relevant to each research project, 2) troubleshooting of stubborn research problems, and 3) other topics as needed. Students will be required to give presentations on their research projects at these meetings, including a final project presentation the last week of class. A tentative outline for group meetings is listed on the course webpage.
   b. **Individual/Small Group Meetings**: Another small group meeting with the instructor or mentor will take place. This is to ensure that all students are making progress throughout the semester and to give the students opportunities to ask questions.
2. **Required Group Research Time**: All students will be required to work on research with their groups in the computer lab for **four** hours per week.
Course Assignments:
Included below is an outline of the assignments that will be due throughout the semester. A schedule with due dates will be posted on the course webpage.

- **Research Presentations:** Students will be required to give a total of four research presentations at weekly group meetings throughout the semester. The final presentation at the end of the semester will be a significant portion of the final grade (see below).
- **Progress Reports:** A very brief report will be written and handed in every week. This report will primarily include the data accumulated in the previous week. A progress report template will be posted on the course webpage.
- **Final Research Paper:** A research paper will be written at the conclusion of the semester. This paper will include a cover page and at least 6 pages of typed 12-font text that is double-spaced with a 1” margin excluding tables and figures, and a bibliography. The report will be in ACS format. This paper is due on the last day of class at 8:00 am.
- **Research Paper Draft:** You will be required to turn in a draft of each section of your final research paper prior to the final due date. The due dates will be posted on the course website. You will also be required to participate in peer review exercises in class.
- **Miscellaneous assignments:** There will be a few extra assignments meant to give students the skills to prepare for their next internship or research opportunity.

Research Project:
Students will select an independent project at the beginning of the semester. Research projects will be discussed in our first individual meetings.

Grading:
- 10%: Participation in required lab time and weekly meetings
- 15%: Progress reports
- 15%: First three oral presentations
- 10%: Miscellaneous assignments
- 15%: Final oral presentation
- 35%: Final paper (10% rough draft/peer-review; 25% final draft)

Course Webpage:
All important course updates and information can be found on the course webpage: [http://fri.cnm.utexas.edu/fri/](http://fri.cnm.utexas.edu/fri/).

Independent Inquiry:
This course carries the Independent Inquiry flag. Independent Inquiry courses are designed to engage you in the process of inquiry over the course of a semester, providing you with the opportunity for independent investigation of a question, problem, or project related to your major. You should therefore expect a substantial portion of your grade to come from the independent investigation and presentation of your own work.

Writing:
This course carries the Writing Flag. Writing Flag courses are designed to give students experience with writing in an academic discipline. In this class, you can expect to write regularly during the semester, complete substantial writing projects, and receive feedback from your instructor to help you improve your writing. You will also have the opportunity to revise one or more assignments, and you may be asked to read and discuss your peers’ work. You should therefore expect a substantial portion of your grade to come from your written work. Writing Flag
classes meet the Core Communications objectives of Critical Thinking, Communication, Teamwork, and Personal Responsibility, established by the Texas Higher Education Coordinating Board.

**Classroom Expectations:**

*Classroom Behavior:* Reading and sending emails (not related to the course), completing work for other courses in class, playing video games, streaming videos, and other activities not related to in class activities is not appropriate. Students engaging in these sorts of activities will be removed from the classroom and will not receive points for attendance that day.

*Professionalism:* Students are expected to behave in a professional manner during class. Any comments of a derogatory nature towards other students, mentors, TA, or the instructor will not be tolerated. Students engaging in these sorts of activities will be removed from the classroom. If inappropriate behaviors occur more than once or are deemed abusive, the incident will be reported to the Student Judicial Services (http://deanofstudents.utexas.edu/sjs/) and will go on the student's permit record.

**Disclaimer:** The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be by announcement in class or by written or email notice.

### Additional University Policies and Resources

**Religious Holy Days:**
By UT Austin policy, you must notify your instructor of your pending absence at least fourteen days prior to the date of observance of a religious holy day.

**Q Drop Policy:**
If you want to drop a class after the 12th class day, you’ll need to execute a Q drop before the Q-drop deadline, which typically occurs near the middle of the semester. Under Texas law, you are only allowed six Q drops while you are in college at any public Texas institution. For more information, see: [http://www.utexas.edu/ugs/csacc/academic/adddrop/qdrop](http://www.utexas.edu/ugs/csacc/academic/adddrop/qdrop)

**Student Accommodations:**
Students with a documented disability may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259 (voice) or 1-866-329-3986 (video phone). [http://ddee.utexas.edu/disability/about/](http://ddee.utexas.edu/disability/about/)
- Please request a meeting as soon as possible to discuss any accommodations
- Please notify me as soon as possible if the material being presented in class is not accessible
- Please notify me if any of the physical space is difficult for you

**Academic Integrity:**
Each student in the course is expected to abide by the University of Texas Honor Code:

“As a student of The University of Texas at Austin, I shall abide by the core values of the University and uphold academic integrity.”
You are responsible for understanding UT’s Academic Honesty Policy which can be found at the following web address:  http://deanofstudents.utexas.edu/sjs/acint_student.php

University Electronic Mail Notification Policy  
(Use of E-mail for Official Correspondence to Students):  
Electronic mail (email), like postal mail, is a mechanism for official University communication to students. The University will exercise the right to send email communications to all students, and the University will expect that email communications will be received and read in a timely manner. The complete text of this policy and instructions for updating your e-mail address are available at http://www.utexas.edu/its/policies/emailnotify.html

Counseling and Mental Health Center:  
The Counseling and Mental Health Center (CMHC) provides counseling, psychiatric, consultation, and prevention services that facilitate students’ academic and life goals and enhance their personal growth and well-being. https://cmhc.utexas.edu

Student Emergency Services:  
Student Emergency Services supports students through challenging or unexpected situations by providing outreach, advocacy, intervention, and referrals to relevant campus and community organizations.  
http://deanofstudents.utexas.edu/emergency/

The University Writing Center:  
The University Writing Center offers free, individualized, expert help with writing for any UT student, by appointment or on a drop-in basis. Consultants help students develop strategies to improve their writing. The assistance we provide is intended to foster students’ resourcefulness and self-reliance.  
http://uwc.utexas.edu/

BCAL – Behavior Concerns Advice Line:  
If you have concerns about the safety or behavior of fellow students, TAs or Professors, call BCAL (the Behavior Concerns Advice Line): 512-232-5050. Your call can be anonymous. If something doesn’t feel right – it probably isn’t. Trust your instincts and share your concerns.

Evacuation Information:  
The following recommendations regarding emergency evacuation from the Office of Campus Safety and Security, 512-471-5767,  http://www.utexas.edu/safety/

Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when an alarm or alert is activated. Alarm activation or announcement requires exiting and assembling outside, unless told otherwise by an official representative.

- Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.
- Students requiring assistance in evacuation shall inform their instructor in writing during the first week of class.
- In the event of an evacuation, follow the instruction of faculty or class instructors. Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.
- Link to information regarding emergency evacuation routes and emergency.
procedures can be found at: www.utexas.edu/emergency