

# SE 312                      Instrumentation and Testing Laboratory      SPRING 2022

## Course Outline

Prof. Henrique Reis  
Lecture: Tu-Th 8:00 a.m.  
Room 103, Transportation Bldg.

Office: 217 Transpt. Bldg.  
e-mail: h-reis@uiuc.edu  
Telephone: 217-233-1228

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### Required Text and Supplies

SE 312 Instrumentation and Test Laboratory Notes. You can purchase these notes at the Illini Union Bookstore (IUB). In the Lab Notes you will find the following:

- Instructions on lab procedures, analysis instructions, and questions for discussion. You should review these manual carefully prior to each lab. You will be told ahead of time which “points for discussion” are to be completed in your lab reports.
- A list of grading criteria for the labs and guidelines for technical writing.
- Instructional material explaining the theory behind the labs.

Safety glasses with side shields. Safety glasses are available at ECE Stores

Two additional texts on reserve in the library:

- Norman E. Dowling, “*Mechanical Behavior of Materials,*” 2<sup>nd</sup> Edition, Prentice Hall Inc., 1999.
- William D. Callister, Jr., “*Materials Science and Engineering – An Introduction,*” 6<sup>th</sup> Edition, John Wiley and Sons, Inc., 2003.

### Laboratory Exercises

Jan. 18-Jan. 21	No Lab.
Jan. 24-Jan. 28	Lab 1: The Tension Test
Jan. 31-Feb. 04	Lab 2: Compression and Hardness Tests
Feb. 07-Feb. 11	Lab 3: Bending and Torsion Tests
Feb. 14-Feb. 18	Lab 4: Notch Sensitivity
Feb. 21-Feb. 25	Lab 5: Impact Testing & Fracture Toughness

### Grading

10% per lab report; 10% attendance of lectures; 40% Final Exam;

*Note: Date and time of Final Examination will be announced in class.*

### Laboratory Attendance Policy

Everyone is expected to attend his or her assigned laboratory section. If you must miss a laboratory section *for a good reason*, contact Professor Reis by e-mail as soon as possible, but no later than the day of the laboratory, to obtain an official excuse. Due to heavy laboratory usage, the experiments we perform are in place for only a week at a time. If you miss a laboratory without an official excuse from the instructor, a **zero** will be given. If you have an official excuse granted by Professor Reis, you may obtain the data for the missed laboratory, write the report, and submit it for grading according to the schedule for your laboratory section (see below).

Unacceptable reasons for missing a laboratory include, but are not limited to, the following: job interviews; “I forgot to attend lab”; “I overslept”. Official excuses are normally given for, but are not limited to, the following: emergencies such as death or severe illness of a family member; illness, supported with a note from the McKinley Health Center or other medical provider; attendance at an off-campus meeting to present research results or as an official representative of a UIUC Registered Student Organization, provided the request is made during the first week of class; family events, such as a wedding, provided the request is made during the first week of class.

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### Late Policy

Reports are due exactly one week after the laboratory at 4:30 PM on the day of your assigned laboratory section. Late reports turned in by 4:30 PM the next business day after they are due will lose 10%. *Any reports turned in later than one day will not receive credit.*

***MANDATORY: Make a **Hard Copy** of your report and deposit it following the instructions of the Head TA. In addition make a PDF copy of your report and submit it to CANVAS. For purpose of "late policy," the time reported in CANVAS is the official time of the reported submission.***

### Teaching Assistant (TA) Information

The following TAs will be teaching and grading the laboratory portion of this course. Any questions regarding lab policies should be directed to the Head TA, Mr. Joshua Love. Any questions on the laboratory experiments should be discussed first with fellow students, but ultimately your TA is your resource for information.

Head Teaching Assistant: Joshua Love [jlove1321@gmail.com](mailto:jlove1321@gmail.com)

Lab Assistants: Parth Bansal [parthb2@illinois.edu](mailto:parthb2@illinois.edu)  
Alina Aurora Lusebrink [alinaal@illinois.edu](mailto:alinaal@illinois.edu)  
Akash Singh [akashs@illinois.edu](mailto:akashs@illinois.edu)

### Office Hours

Times and locations TBA

### Laboratory Times, Locations, and Ground Rules

There are five lab sections this semester: AB1, meeting 10:00-11:50 a.m. on Tuesdays; AB2, meeting 6:00-7:50 p.m. on Tuesdays; AB3, meeting 10:00-11:50 p.m. on Thursdays, AB4, meeting 4:00-5:50 p.m. on Thursdays, and AB5 6:00-7:50 p.m. on Thursdays. All meet in room 200 of Talbot Lab. Please be aware of the following lab ground rules:

- You must read your laboratory write up (online, see below) for that week's experiments **prior** to coming to your laboratory section, otherwise you will not have enough time to complete the assignment.
- It is imperative that you be on time to your laboratory section. **Anyone arriving more than 10 minutes late will not be permitted entry.**
- Safety glasses with side shields are the responsibility of the student to purchase and bring to the laboratory each week; **you must remember your safety glasses or you will not be permitted entry;** no excuses will be accepted.
- If you are not allowed entry to your laboratory section for **either** reason listed above, it shall be considered a missed laboratory and **you will receive a zero for that laboratory assignment.**
- **For reasons of safety, you must dress appropriately and behave professionally.** No baggy attire or sandals will be permitted; there is moving machinery and we want to prevent injury by entanglement with loose clothing. Sandals do not protect the tops of your feet as do enclosed shoes. Also, loud joking or horseplay will not be tolerated. Such behavior can be distracting to others in the lab and may cause them to lose concentration. The laboratory manager, at his discretion, may remove a person from the lab for either of these reasons. If that occurs, ***the person removed will receive a zero for that laboratory assignment.***
- **No Cell Phones or Cameras allowed in the classroom or in the Laboratory.** Students are not allowed to use cell phones or cameras within the classroom or within the Laboratory.
- **Your Data:** You can access your experimental data one hour later after finishing your lab. The web site is: <http://mtil.illinois.edu/data>

## **General Course Policies:**

### **Tips for Success**

To do well in the course, please remember the following:

- Do your work frequently. If you let the work pile up, you may become overwhelmed.
- Consider using a word processor to save all your work so that you have an automatic back up of all your assignments. This will be useful in an unlikely event that your computer/served goes down and you are unable to submit your work.
- It is very important that you communicate throughout the course. Should you have difficulties with some work or are going to be away because of illness or a family emergency (or similar difficulties), please inform the instructor as soon as possible. This will keep the instructor from worrying about your whereabouts.
- When possible provide tips and suggestions to your peers in the class. As a learning community, we can help each other learn and grow. One way of doing this is by helping to address the questions that your peers pose. By engaging with each other, we will all learn better.

### **Request for special Accommodations**

If you require special accommodations, please contact the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES, you may visit 1207 S. Oak Street, Champaign, call 217.333.4603, or email [disability@illinois.edu](mailto:disability@illinois.edu). Please note accommodations are not retroactive to the beginning of the semester, but begin the day you contact your professor with a current letter of accommodation from DRES.

### **Emergency Dean**

“Help is only a phone call away.” A university-wide Emergency Dean is always available to provide you with personal assistance in times of emergency, such as serious illnesses, hospitalizations, accidents, deaths or other major crises. Emergency Dean Service: 217-333-0050.

### **Statement Regarding Anti-Racism/Diversity & Inclusion**

The Grainger College of Engineering is committed to the creation of an anti-racist, inclusive community that welcomes diversity along a number of dimensions, including, but not limited to, race, ethnicity and national origins, gender and gender identity, sexuality, class and religion. All students should be treated with respect, so that they can live and learn without marginalization and racism being instigated by other members of our community. Both overt racism and the micro-aggressions threaten inclusivity and hence, have no place at the University of Illinois.

The effectiveness of this course is dependent upon each of us to create a safe and encouraging learning environment that allows all students equitable opportunities and respect. All of us are expected to help establish and maintain an environment where you and your peers can contribute without fear of ridicule or intolerant or offensive language. If you witness or experience racism, discrimination, micro-aggressions, or other offensive behavior, I encourage you to bring this to my attention if you feel comfortable. You can also report these behaviors to the Office for Student Conflict Resolution (<http://www.conflictresolution.illinois.edu/>), or to the Bias Assessment and Response Team (BART) (<https://bart.illinois.edu/>). Based on your report, the staff will reach out to students to make sure they have the support they need to be healthy and safe.

### **Statement for Professional/Respectful Zoom Activities/Chats**

It is imperative to creating a productive learning environment that we practice constructive discourse when in class. This entails respecting your fellow classmates, exhibiting a willingness to listen, and tolerating opposing points of view. Our discussions will center on the integrity of how our topics are being argued, not whether or not you necessarily agree with your classmate’s topic or stance. If you argue aggressively, are rude, or are unproductively critical, you will be asked to leave and will be marked absent for that day.

### **Teaching Responses**

Assignments are hand graded, thus, please allow 1-2 weeks for complete grading of these assessments. We will respond to e-mail messages and phone calls within 24 hours of receiving them Monday through Friday 9:00 to 5:00 p.m. central time. Saturdays and Sundays, we will continue to check email, but response time may take up to 48 hours. If you leave a message, please check your e-mail for a response. Email should always be the first communication approach.

### **Academic Integrity Statement**

The University of Illinois at Urbana-Champaign Student Code should be considered as a part of this syllabus. Students should pay particular attention to article 1, part 4: Academic Integrity. Read the Code at the following URL: <http://studentcode.illinois.edu/>. Academic dishonesty may result in a failure grade. Every student is expected to review and abide by the Academic Integrity Policy <http://studentcode.illinois.edu/>. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt what constitutes plagiarism, cheating, or any other breach of any academic integrity.

### **Emergency Response**

Emergency response recommendations can be found at the following website: <http://police.elinois.edu/emergency-preparedness/>. I encourage you to review this website and the campus building floor plans website within the first 10 days of class. <http://police.illinois.edu/emergency-preparedness/bulding-emergency-action-plans/>.

**Statement on Family Education Rights and Privacy Act (FERPA)**

Any student who suppressed their directory information pursuant to Family Education Rights and Privacy Act (FERPA) should self-identify to the instructor to ensure protection of privacy of their attendance in this course. See <http://registrar.illinois.edu/academic-records/ferpa/> for more information on FERPA.

**Statement on Accommodations — Enhanced Statement with Resources**

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES, you may visit 1207 S. Oak St., Champaign, call 333-4603, email [disability@illinois.edu](mailto:disability@illinois.edu) or go to DRES website. If you are concerned you have a disability-related condition that is impacting your academic progress, there are academic screening appointments available on campus that can help diagnosis a previous undiagnosed disability by visiting DRES website and selecting “sign-Up for an Academic Screening” at the bottom of the page.

**Statement on Sexual Misconduct and Reporting**

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to University’s Title IX and Disability Office. In turn, any individual with Title IX and Disability Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options.

A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and maintain confidentiality can be found here: <http://wecare.illinois.edu/resources/students/#confidential>. Other information about resources is available here: <http://wecare.illinois.edu>.

**Statement when Using the NET (Netiquette Statement):**

In any social interactions, certain rules of etiquette are expected and contribute to more enjoyable and productive communications. The following are tips for interacting online via email or discussing board messages, adapted from guidelines originally compiled by Chuq Von Rospach and Gene Spafford (1995):

- Remember that the person receiving your message is someone like you, deserving courtesy and respect.
- Avoid typing all sentences or phrases in Caps Lock
- Be brief; succinct, thoughtful messages have the greatest effect.
- Your messages reflect your personality; take time to make sure that you are proud of their form and content
- Use descriptive subject headings in your e-mails
- Think about your audience and the relevance of your messages.
- Be careful when you use humor and sarcasm; absent the voice inflections and body language that aid face-to-face communication, Internet messages are easy to misinterpret
- When making follow-up comments, summarize the parts of the message to which you are responding
- Avoid repeating what has already been said.; needless repetition is ineffective communication
- Cite appropriate references whenever using someone else’s ideas, thoughts, or words.

**Statement Regarding Copyright**

Material associate to this course, (i.e., SE412) has been developed solely for the students enrolled in this course. Use of this material by anyone associated with SE412 course violates Copyright, and the person or persons may be subjected to the Ethics code of Conduct from the University of Illinois at Urbana-Champaign.