Fluid and Energy Transfer Operations Laboratory

(Unit Operations Lab 1)

ECH 4224L

Sections: 2449 (Wednesday), 3535 (Thursday), and FETL (Friday)

Class Periods: 2 - 5 (8:30 am – 12:35 pm)

Locations: Unit Operations Lab (CHE 100, 200, 300), and CHE 220

Academic Term: Spring 2023

Instructor:

Dr. Fernando J. Mérida Figueróa

You can call me Prof./Dr. Mérida, or Fernando if you feel comfortable doing it.. Remember that calling your instructors by their names must encompass the same level of professionalism and respect than using professional titles.

- **e-mail:** fmerida@ufl.edu
- **Office Hours:** Mondays, 9:00 – 11:00 AM (room CHE 217 or via Zoom).
  Reservation of time slots for office hours is required. A Google Calendar will be used for this purpose.

Contacting Dr. Mérida:

- E-mail is the primary communication platform. Make sure the subject line of your message has the label **"ECH 4224L -Day- Question"** ("day" refers to your day/section; you can use the first three letters of the day that corresponds to your section. You should expect a response within 48 hours (M-F) and within 72 hours (weekend). Failure to use the label described above might lead to an overlooked message which can take more time to be responded.
- Announcements will be periodically posted on Canvas. All students must be signed-up to receive Canvas notifications during the term.

Peer Tutors:

- Please use *peer tutor* (or just "tutor") for students who will assist you in experiments. Avoid the use of "TA" since this title refers to a graduate student in a different role.
- Contact peer-tutors through the Canvas message or via e-mail (see Table 1). Modifications in the list below may be required and will be announced through Canvas if necessary.

Table 1. Peer-tutors for Unit Ops 1

Module	Wed	Thu	Fri
TFE *(Thin Film Evaporator)*	**Gabrielle Russo** gabriellerusso@ufl.edu	**Joshua Matzner** joshua.matzner@ufl.edu	**Phong Quach** phong.quach@ufl.edu
FLU *(Fluid Flow)*	**Mei Ng** mng1@ufl.edu	**Zohi Dreyfuss** zdreyfuss@ufl.edu	**Mei Ng** mng1@ufl.edu
CUR *(Flow Charact. Curves)*	**Victor Rivera** riverallabres.v@ufl.edu	**Logan Kieran** logan.kieran@ufl.edu	**Victor Rivera** riverallabres.v@ufl.edu
FIL *(Filtration)*	**Kaylee Conrad** k.conrad@ufl.edu	**Nathan Blackburn** nathanblackburn@ufl.edu	**Mei Ng** mng1@ufl.edu
HEX *(Heat Exchangers)*	**Phong Quach** phong.quach@ufl.edu	**Henry Nguyen** duchuynguyen@ufl.edu	**Phong Quach** phong.quach@ufl.edu
BED *(Fixed/Fluidized Beds)*	**Taskina Jui** jui.taskinazaman@ufl.edu	**Ashley Landry** ashleylandry@ufl.edu	**Victor Rivera** riverallabres.v@ufl.edu

Additional point persons:

- Lab Engineer: Mr. Preston Towns, ptowns@che.ufl.edu (Office: CHE 118)
- Unit Ops 2 course instructor: Dr. LiLu Funkenbusch, lilu.funkenbusch@ufl.edu (Office: CHE 219)

Course Description

(2 credits) Experimental work in fundamentals of Unit Operations involving heat and momentum transfer.

Course Pre-Requisites

ECH 3101 (Process Thermodynamics), ECH 3203 (Fluid and Solid Operations), ECH 3223 (Energy Transfer Operations), ENC 3246 (Professional Communication for Engineers)

Course Co-Requisites

ECH 4714 (Chemical Process Safety)

Materials and Supply Fees: $100.24

Course Objectives

1. Reinforce classroom theory by the collection and use of data in practical experiments with all their inherent problems and limitations.
2. Gain proficiency in writing technical reports and/or oral presentations.
3. Gain experience in working in teams.
4. Create a sense of professional responsibility for the quality and integrity of engineering work.
5. Learn the importance of working under Safety guidelines thus promoting a safe environment for others.
6. Learn equipment, instrumentation, and procedures not covered in lectures
7. Learn and apply basic concepts of statistical analysis and Design of Experiments whenever is possible.

Relation to Program Outcomes (ABET):

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex problems by applying principles of engineering, science, and mathematics	High
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	
3. An ability to communicate effectively with a range of audiences	High
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	Low
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	High
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	High
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Medium

*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not covered or assessed in the course.

Course websites

- ***Canvas website: http://elearning.ufl.edu/***
  Canvas will be used as the main repository of information and other resources for preparation of experiments, submission of reports/memos, projects, and other assignments. It will also be used for posting of grades, announcements, and general information for the class. Please note that due to the inability of Canvas to properly weigh assignments with special points or bonus given to assignments, final grades will be computed externally by the course instructor.

- ***CATME***
  This software will be used for two purposes: a) group formation (first week of the semester), and b) team evaluations (every two weeks). Additional instructions are available in Canvas.

Recommended Literature:

There is no required textbook for this class. The following titles are recommended to support fundamentals and theoretical background, physical constants, empirical correlations, and other concepts:

1. Geankoplis, C. J., *Transport Processes and Unit Operations* [On reserve in the Science Library].
2. Incropera, F. P. and D. P. DeWit, *Fundamentals of Heat and Mass Transfer* [On reserve in the Science Library]
3. Gerhart, Philip M., Gerhart, Andrew L., and Hochstein, John I, *Munson's Fluid Mechanics* [On reserve in the Science Library]
4. McCabe, W. L., J. C. Smith, and P. Harriet, *Unit Operations of Chemical Engineering* [On reserve in the Science Library]

Course overview

- The course consists of six experimental modules; each module lasts for two weeks. This two-week period is called ***rotation.*** In each rotation, students will be performing one or more experiments corresponding to a given module.
- Each course section is divided into teams of 4 students, and teams *rotate* through all six modules. A few teams might have 5 members depending on final enrollment at the end of the add/drop period. Any student switching sections, or adding to the class during the add/drop week must notify the course instructor.

Teams

Team formation will be performed via CATME's team building algorithms according to instructor-determined criteria aiming to optimize the student team composition thus making groups more diverse, heterogenous, and having similar meeting times outside the class. Each student must complete a CATME Team Maker survey by the date indicated in the Orientation Meeting (first day of classes). If a student cannot attend the Orientation Meeting due to justifiable reasons or the student got enrolled in the class during the add/drop period (but after the Orientation Meeting), the student must contact the course instructor as soon as possible. Completion of CATME Team Maker survey by all students must be done no later than the end of the add/drop period. **Failure to complete the survey by the end of the add/drop period will lead to students dropped from the class**.

- Once teams are formed, each team will prepare and sign a team contract to define the team's mission, overall goals, commitment, resources, boundaries, constraints, etc. Team contracts will be prepared and signed by each member of a team on the second week of classes.
- Each team member will have *rotating* roles throughout the semester (e.g., leader, recorder, analyst, planner). Tasks associated to each role and strategies to monitor role effectiveness will be discussed in class.
- Regardless of individual contributions, each team member is responsible for understanding all elements of each experiment including theory, experimental design, system configuration, experimental protocol, etc. in the different modules.

Module description

The six experimental modules may be subdivided into one or more experiments (see more information in Canvas) to be conducted within the two-week period (rotation). The only exception to the two-week duration will be Rotation 4 which will last for one week only. More information about logistics for this rotation will be provided later and posted on Canvas. Teams will complete six rotations across the six modules throughout the semester. Names and nomenclature for experimental modules are provided below.

- **TFE**: Thin Film Evaporator
- **FLU**: Fluid Flow
- **CUR**: Flow Characterization Curves
- **FIL:** Filtration
- **HEX:** Heat Exchangers
- **BED:** Fixed and Fluidized Bed Columns

Course schedule

Schedule is summarized in Table 2 using the module nomenclature previously defined. Modifications to the schedule may be required depending on performance of equipment/instrumentation, class cancellation due various reasons (e.g., atmospheric phenomena), or other reasons not listed in this document. Announcements will be posted in Canvas regarding any modification of the course schedule.

Table 2. Course schedule for ECH4224L

Schedule		**Team 1**	**Team 2**	**Team 3**	**Team 4**	**Team 5**	**Team 6**
	Jan 9 - 13	Orientation, Safety, and Lab Tour					
	Jan 16 - 20	DoE, Report Preparation, and Team Dynamics (DRT) workshop					
Rotation 1	Jan 23 - 27 Jan 30 - Feb 3	TFE	FLU	CUR	FIL	HEX	BED
Rotation 2	Feb 6 - 10 Feb 13 - 17	FLU	CUR	FIL	HEX	BED	TFE
Rotation 3	Feb 20 - 24 Feb 27 - Mar 3	CUR	FIL	HEX	BED	TFE	FLU
Rotation 4	Mar 6 - 10	FIL	HEX	BED	TFE	FLU	CUR
	Mar 13 - 17	Spring Break (no labs)					
Rotation 5	Mar 20 - 24 Mar 27 - 31	HEX	BED	TFE	FLU	CUR	FIL
Rotation 6	Apr 3 - 7 Apr 10 - 14	BED	TFE	FLU	CUR	FIL	HEX
	Apr 17 - 21	Rotation 6 presentations					
	Apr. 24 - 16	Lab make up					

[*] *Schedules for sections with less than six teams will include experimental rotations with the appropriate number of teams.*

Attendance Policy & Class Expectations, Tardiness, and Make-Up Policy

- **Attendance to class activities (experiments, lectures, workshops) is mandatory, *no exceptions.*** Students are required to attend all activities described in table 2. In case of foreseeing an absence due to justifiable reasons (excused absences) such as job interview, health/medical issues, etc., the student must e-mail the course instructor (with copy to the peer-tutor) no later than the day before the missed class. Excused absences must be consistent with university policies in the undergraduate catalog and require appropriate documentation. For more information click here:

  https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

  - In case of unexpected situations or other emergencies that cannot be planned ahead of time, the student must notify the course instructor, teammates, and peer-tutor no later than 10:00 am the day of the corresponding class. Depending on the type of the unexpected situation/emergency and the appropriate documentation, the course instructor will determine whether it qualifies for excused absence or not. **Failure to notify the course instructor will result in unexcused absence** (see below for unexcused absences)
  - Keep in mind that the course instructor will file a UMatter WeCare report in case the student does not notify the absence by 10 am, just to make sure that the student is safe.
  - All excused absences must be made-up. This will be coordinated between the course instructor and the student. Failure to make-up the class will result on 5% reduction of the total grade obtained in the class.
- **Unexcused absences:** One unexcused absence will result on 5% reduction of the total grade obtained in the class. In addition, the class must be made up (this will be coordinated between the course instructor and the student)
  - Failure to make-up the class will result on an additional 5% reduction of the total grade obtained in the class.
  - A second unexcused absence will result in a failing grade in the course (D; see *Evaluation of Grades*)
- **Tardiness:** students must be on time to all activities (labs, lectures, workshops, etc.)
  - A one-time tardiness within the first 10 minutes after starting the class without appropriate notification to the course instructor and teammates will involve a "warning" and will slightly affect participation grade. In case of an uncontrollable situation or emergency, the student must notify team members and course instructor as soon as possible (see above for excused absences)
  - A second case of tardiness within the first 10 minutes after starting the class without appropriate notification will result on a 3% overall grade reduction in the course.
  - A third case of tardiness within the first 10 minutes after starting the class without appropriate notification to the course instructor and teammates will result in a failing grade in the course (D; see *Evaluation of Grades)*
  - Any tardiness 10 minutes after starting the class and before 10:00 AM will become an excused absence only if appropriate notification is sent to the course instructor (before 10:00 AM) and the reason for tardiness is justifiable (see "Excused Absences"). Otherwise, tardiness will become an unexcused absence (see "Unexcused Absences").
- **Make-up classes**: Any missed lab (excused or unexcused) must be made-up. Dates and logistics for make-up labs will be coordinated between the student and the course instructor. Keep in mind that making-up a lab will not remove any grade deduction or penalty associated with the absence as explained above.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies:
https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Evaluation of Grades

Table 3. Grade distribution

Assignment	Points	% Final Grade
Assessments* (2); 5 *points each*	10	1%
Quizzes (6); *10 points each*	60	6%
Pre-labs (6); *15 points each*	90	9%
Calculations (6); *25 points each*	150	15%
Lab Reports (2); *150 points each*	300	30%
Lab Memos (3); 80 *points each*	240	24%
Presentation (1)	100	10%
Participation**	50	5%
Total Points/Final Grade Percentage	1000	100%

*Full credit is required; see *Homework, due dates, format, and policies:*
**See *Homework, due dates, format, and policies.*

Important: Grades for individual and group assignments, and other class activities as described in Table 3 will be posted on Canvas. However, the final grade will be computed outside Canvas to avoid incorrect weighing frequently observed in Canvas gradebooks.

Grading Policy

Table 4. Grading policy

Percent	Grade	Grade points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Safety

Students are expected to know and follow safe operating procedures of devices and materials used in experiments as well as proper handling of hazardous materials. Students are required to attend an orientation & safety session at the beginning of the semester (first day of classes) and to complete an assessment of the topics covered in the Orientation & Safety Meetings and other contents of the class syllabus. In addition, quiz questions will always include safety aspects. **Failure to follow safety guidelines will result in significant grade reductions.** Examples of safety violations are listed below (this list is not exhaustive).

Table 5. Examples of safety violations

Safety violation	Penalty
Leaving the lab without proper shutting down	Failing grade
Not wearing PPE required by an experiment	Letter grade reduction
Not handling/cleaning a chemical spill properly, or not disposing of hazardous waste properly	Letter grade reduction
Causing a major spill due to negligence	Letter grade reduction
Exposing food or drink inside the lab*	Letter grade reduction
Using non-intrinsically safe/non-explosion proof electronic devices in areas restricting the use of electronics	Letter grade reduction

*Food and drinks can be kept in fully closed containers/bottles, and they must remain inside backpacks. If a student needs to eat a snack or drink liquid, they will inform peer-tutors and/or course instructor and will do it outside the lab. Upon reentry to the lab, all food and drink containers/bottles must be stored inside backpacks.

Homework, due dates, format, and policies:

Instructions to prepare all assignments will be available in Canvas. Generic dates are specified below. For specific due dates, students must check the course schedule available in the Canvas Home Page along with other supporting information provided by the course instructor. Keep in mind that the course schedule might be subject to change due to class cancellation caused by uncontrollable scenarios (e.g., hurricane/tropical storm watch). Announcements will be posted on Canvas.

- ***Assessments:*** → *Format: Canvas survey; individual. Unlimited attempts will be allowed until getting full credit.*

  Two mandatory, individual assessments will be administered via Canvas Quiz to assess the understanding of topics described below. Each assessment will be open for 24 hours; you will have unlimited attempts to answer all questions correctly before the survey closes. Supporting materials will be available in Canvas (even before surveys open!) for the completion of these two assessments. **Failure to complete these two assessments with full credit will automatically drop students from the class.**

  a) Syllabus & Safety (S&S). *Due: one day after the Orientation Meeting (it varies depending on the section).*

  - ***Opens:*** *11:59 PM the day of Orientation Meeting*
  - ***Closes:*** *11:59 PM the day after Orientation Meeting.*

b) Design of Experiments, Report Preparation, and Teamwork (DRT): *Due: one day after the DRT workshop (it varies depending on the section).*

- ***Opens:*** *11:59 PM the day of DRT workshop.*
- ***Closes****: 11:59 PM the day after the DRT workshop*

- ***Pre-Labs (PL):*** → *Format: Typed; [PDF]; individual assignment submitted via Canvas.*

  Each student must prepare an assignment dealing with fundamentals behind the experiment, proposed experimental design, workflow of calculations, and safety. Materials required for the preparation of PL include (but not restricted to) lab manuals and videos. Some of the contents of PLs may be subsequently discussed during the class time with peer-tutors and course instructor via questions to students. Students will not be allowed to start experiments if the assignment was not submitted on time. This assignment is due the day before a new rotation starts (until 11:59 PM). Late submissions will be accepted only if a student was not able to complete the homework on time due to an acceptable reason (see excused absences policy)

- ***Quizzes:*** → *Format: Canvas; individual.*

  Quizzes will be given via Canvas, two days before starting week 2 experiments for a given module. For example, if you are in a Wednesday group, you have any time on Monday (12:00 am – 11:59 pm), but keep in mind that the time limit for the quiz is 20 minutes. Resources for the completion of the quiz include lab manuals, experiment videos, observations during week 1 experiments, preliminary calculations. Quizzes are individual and students cannot communicate with anyone else while taking the quiz. Any evidence that you have worked with someone on quizzes will lead to a zero grade in the quiz along with an Academic Honesty report. A second incident of this type will result in failure of the course and another Academic Honesty report. Quizzes cannot be made up.

- ***Preliminary calculations and analysis (PR):*** → *Format: Excel spreadsheet; group assignment submitted via Canvas.*

  Each group will submit an Excel file containing preliminary calculations, analyses, and short result interpretation from experiments conducted on week 1. In addition, predictions or required calculations for week 2 can also be part of PRs. This assignment is due one day before starting week 2 of each rotation (11:59 PM) For example, if you are in a Wednesday team, you have until 11:59 on Tuesday to submit your team's PR. Guidelines and rubrics will be available in Canvas assignments. PRs will be presented/discussed to/with peer-tutors and/or course instructor during class (at the beginning of week 2 experiments). Keep in mind that PR discussion will be conducted using the Excel file you submitted the day before (no further changes are allowed). Late submissions will be accepted only if a team was unable to complete the homework on time due to an acceptable reason (see excused absences policy).

- **Final Reports (FR) and Memos (MEM):** Format: *Typed; [PDF and Word] and updated Excel spreadsheet; group assignment submitted via Canvas*.

  Once experiments are finished on week 2 of rotations 1 - 5, each group will prepare either a final report (FR) or a technical memo (MEM) for the ongoing experimental module. All the modules of the class are designed to have results reported either as a FR or a MEM. FRs will have a minimum and maximum of 10 and 15 pages, respectively (main body of the report; 3 pages max for Appendices), and MEMs will have a minimum and maximum of 4 and 6 pages, respectively. Either FR or MEM, results must be presented in concise yet professional and organized fashion. These assignments are due one week after finishing experiments for a given module (until 11:59 PM) For example, if you are in a Wednesday group, you have until next Wednesday at 11:59 PM to submit your team's FR/MEM. Guidelines, key points, and evaluation rubrics for PR/MEM are available in Canvas for each module. No late submissions will be accepted unless they are consistent with the Late PR/MEM policy (see below).

Late FR/MEM Policy: throughout the semester, each group will have a maximum of two, "one-day extended deadlines" for the submission of a FR or a MEM. For example, if you are in a Wednesday group and because of a busy week you were unable to submit your FR/MEM by 11:59 on Wednesday, you can still submit it by 11:59 on Thursday without a grade penalty. Each group is encouraged to use this late homework policy wisely. No additional late submissions will be accepted in addition to those described in this box.

- **Presentation:** → Format: *oral presentation delivered in person using a PowerPoint slideshow; files to be submitted include ppt and Excel files; group assignment.*

  Rotation 6 will require each group to deliver an in-person oral presentation to summarize/discuss the results of the module. **FR or MEM are NOT required**. Presentations will be delivered during the class time one week after finishing experiments for a given module. Each group must submit the ppt and Excel files no later than 11:59 pm the night before the presentation. Specific details on presentation sections, time duration, classroom, etc. will be available via Canvas. Late submissions or absence of any of the team members will not be accepted (unless there is an acceptable reason consistent with the excused absences policy).

Keep in mind the following…

- Sections, contents and guidelines for memos and reports, report preparation, presentation, and evaluation rubrics will be available in Canvas. Reports, memos, and presentation will be graded both on technical and formatting contents, including communication effectiveness (either written or verbal whenever it applies).
- Reports, memos, and presentations must be prepared using professional writing and appropriate formatting elements for tables, figures, diagrams, etc. This is of utmost importance both for reports/memos and presentation.

- **Participation:** students will be evaluated *individually* for participation. Participation grade is a double contribution of:
  a. Active participation in experiments. This will be evaluated by peer-tutors using "*student evaluations forms*" and course instructor based on observations for each student in aspects such as initiative, preparation for experiments (theory, safety, experimental protocols), respect for others, staying on task, punctuality, and other.
  b. Submission of *peer-tutor evaluations* (via Canvas) and *CATME team evaluations** (via www.catme.org). Each student will submit these evaluations at the end of each rotation (specific deadlines will be announced/programmed in Canvas). **Participation less than 50% anytime during the semester will result in a failing course grade.**

*CATME Team Evaluations could have an impact on your grade. CATME gives out an "adjustment factor" depending on individual contributions. This factor might be applied to the grade obtained by your team. For example, if you team earns 140 points (out of 150 possible points in a FR) in a final report, but your adjustment factor is 0.95, you will earn 133 points (0.95 x 140 points). Note that, it is possible to earn an adjustment factor slightly greater than 1 or significantly less than 1.

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://www.dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

In-Class Recording
Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Video recordings and pictures in the Unit Operations Lab (rooms 100, 200, 300) will be available upon approval by the course instructor only, and it will require the use of an intrinsically safety camera

University Honesty Policy
UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Cooperation Policy
- Students are expected to work in teams on their experiments and for the preparation of reports.
- Individual assignments, such pre-labs should be completed by each student individually.
- No consultation among students is allowed during quizzes.

Plagiarism
Students are not permitted to represent as their own work any portion of the work of another person. Plagiarism includes (but is not limited to) submitting a document or assignment which in whole or in part is identical or substantially identical to a document or assignment not authored by the student. All sources used in preparation of

the reports should be cited, including the manuals provided on the Canvas webpage. Failure to do so is considered plagiarism.

Note: Self-plagiarism is also an issue and will be punished as if the student plagiarized someone else's work. You must cite any figures or information taken from other reports. This is the academic standard and is largely due to journal copyright issues when publishing papers.

Falsification of Information
Students are not permitted to use or report any invented or fabricated information or data. This includes both experimental results and theoretical calculations.

Sanctions for Violations of Honor Code
Since ethical behavior in science and engineering is equal in importance to specific knowledge, the instructor will assign a non-passing letter grade to students who violate academic honesty standards, regardless of the violator's grade performance in class.

Commitment to a Safe and Inclusive Learning Environment
The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:
• Your academic advisor or Graduate Program Coordinator
• Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
• Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
• Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use
All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Writing Requirement
This course confers 6000 words towards the Writing Requirement (WR), which ensures students both maintain their fluency in writing and use writing as a tool to facilitate learning. While helping students meet the broad learning outcomes of content, communication, and critical thinking, the instructor will evaluate and provide feedback on students' written assignments with respect to grammar, punctuation, clarity, coherence, and organization.

Course grades have two components. To receive Writing Requirement credit, a student must receive a grade of C or higher and a satisfactory completion of the writing component of the course.

Student Privacy
There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Campus Resources:

Health and Wellness

U Matter, We Care:
Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence
If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

COVID-19
- If you are sick, stay home and self-quarantine. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus.
- Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.

Academic Resources

E-learning technical suppor*t*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus*:* https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints*:* http://www.distance.ufl.edu/student-complaint-process.