FATE & TRANSPORT OF CHEMICALS IN THE ENVIRONMENT University of South Florida

Prof Cunningham Spring 2022

Is Coronavirus over yet? – Spring 2022 USF policies:

(from www.usf.edu/coronavirus/updates/spring-2022-covid-protocols.aspx)

Spring 2022 COVID-19 Protocols:

- COVID-19 Vaccines: We strongly encourage vaccines, including boosters, as they are our most
 reliable means of stopping the spread of COVID-19. Vaccines are widely available on our
 campuses and at sites throughout Tampa Bay. All of USF's faculty, staff, and students are now
 eligible for the vaccine; therefore, if someone chooses not to be vaccinated, they are assuming
 significant risk for the community and for themselves.
 - The vaccine minimizes the possibility that students face any disruption to their studies or social activities. Please contact vaccine-info@usf.edu with any questions about the vaccines.
- COVID-19 Case, Exposure, or Symptom Reporting: Beginning Jan. 3, 2022, COVID-19 symptoms or positive test results should no longer be reported to assesscovid@usf.edu as this inbox will be retired. Anyone with symptoms or who may have been exposed should get tested. Positive test results will be communicated by the testing site to the Florida Department of Health (FDOH). Similar to other infectious diseases, FDOH will only contact the university if they believe we need to take any particular measures to mitigate the spread of the virus.
 - Students with symptoms or who test positive are encouraged to seek medical attention from Student Health Services (Tampa campus) or the Wellness Center (St. Petersburg and Sarasota-Manatee campuses). Any student testing positive should notify their professors immediately.
- Isolation and Quarantine: Any student testing positive must isolate, follow instructions from the Florida Department of Health, and notify their professors immediately. Housing will offer limited isolation spaces through the spring semester for residential students who are unable to safely return home or go off campus to isolate.
 - Unvaccinated individuals who have been exposed to a positive case may be directed by the Florida Department of Health to quarantine for seven days -- if tested negative on day six -- or for 10 days if not tested. The university cannot accommodate exposed unvaccinated individuals who need to be quarantined. Vaccinated individuals who are exposed do not need to quarantine unless they are symptomatic and directed to do so.
- Masks / Face Coverings: USF expects masks to be worn when indoors, especially in a crowded setting. Some people will choose to wear masks, others will not. Each individual's decision should be respected.
- Testing: We continue to offer voluntary COVID-19 testing for students and employees through Student Health Services and the USF Morsani Clinic on the Tampa campus, and the Wellness Centers on the St. Petersburg and Sarasota-Manatee campuses. We will no longer offer free COVID-19 testing as it is covered under most insurance plans. Questions regarding the costs of testing should be directed to the facility from which you are requesting the test.

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• **Healthy Habits**: Every member of our university community is encouraged to maintain the healthy behaviors that [have] enabled us to keep case numbers low on our campuses. Always stay at home when you don't feel well. Wash your hands regularly for 20 seconds with warm soapy water whenever moving from one place to another. If you are unvaccinated, consider avoiding large crowds and wearing a mask when indoors.

And also...here is some wording that the Provost recommended in Fall 2021, which I think is still valid for Spring 2022...

I will deliver this class, as scheduled, in person. I will <u>attempt</u> to provide a flexible component for students who are asked to isolate or quarantine, or are unable to attend a class in-person for an extended period of time. Please note: All students may be required to attend in-person classes, especially to complete assessments and examinations. For students planning to attend in-person, I will teach in-person classes in the assigned classroom and on the scheduled day and time. For students who are unable to attend a class in-person, I will <u>attempt</u> to provide course content in a flexible format to support the student's academic progression and success. Please contact me directly if you have questions.

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And now for the "regular" syllabus stuff:

Course Description (from USF Course Inventory)

Investigates how chemical properties, physical processes, and environmental characteristics all influence the fate and transport of chemicals in natural and engineered systems. Includes theory, practical examples, and laboratory experiment.

OK, but why would I want to take this class?

Our lives are impacted on a daily basis by the presence of hazardous chemicals in our water, in our air, in our food, or in other compartments of our environment. We even make movies about it! – *A Civil Action, Erin Brockovich*, and *Dark Waters* are all based on real-life events. To understand the risks posed by chemicals in the environment, and (if necessary) to protect the public from harm, first we must understand how chemicals move and react.

Course Objectives

Throughout this course, we will:

- Derive and apply equations (e.g., Henry's Law) to quantitatively estimate the distribution of chemicals between phases or compartments in environmental systems at equilibrium.
- Derive and apply equations to quantitative estimate the rate at which chemicals move between phases or compartments in environmental systems not at equilibrium.
- Derive and apply equations to quantitatively estimate the transformation or reaction of chemicals in environmental systems.
- Apply the mass balance equation for the quantitative analysis of environmental systems.
- Apply the idealized/theoretical models of batch, plug-flow, and completely-mixed-flow reactors for the quantitative analysis of environmental systems.
- Derive and apply equations for quantitatively describing the transport of chemicals in environmental systems by the processes of advection, diffusion, and dispersion.

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Learning Outcomes (ABET outcomes)

The work completed by students in this course will help those students to develop:

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics,
- an ability to communicate effectively with a range of audiences,
- 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,
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions, and
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

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Spring 2022

Lectures: Mondays and Wednesdays, 11:00–12:15, in-person, NES 102

Credit: 3 units, letter grade

Prof Cunningham

Instructor: Professor J A Cunningham

> E-mail: cunning@usf.edu

Voice mail: (813) 974-9540 – voice-mail only, not a live telephone number

Office: ENC (Engineering III) 3215

Office hours: The instructor and the teaching assistant (TA) will each hold office hours for

about 2 hrs/wk (thus a total of about 4 hrs/wk).

Times will be announced during the first or second week of class.

Text book: Integrated Environmental Modeling: Pollutant Transport, Fate, and Risk in the

Environment. A Ramaswami, JB Milford, MJ Small. John Wiley & Sons, Inc.:

Hoboken, NJ. 2005.

Pre-requisite: ENV 4001 (Environ. Systems Eng.) or ECH 3023 (Material/Energy Balances)

E-Mail: Outside of class, I will use e-mail to disseminate information. This will be done

> through the Canvas program so I can reach all students at once. If you use more than one e-mail address, make sure Canvas forwards to your primary e-mail

address.

Grading: 22.5% homework, 22.5% midterm exam, 10% laboratory, 45% final exam

Web site: Course documents – including homework assignments – will be posted on

Canvas. I will also attempt to maintain a course web site:

http://www.eng.usf.edu/~cunning/ENV4053C/Fate&Transport.htm

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Course Schedule

The course schedule below is tentative. It is possible that the actual pace could be a little faster or a little slower than what I have estimated here. We will try to adhere to this schedule, but not to the point of detracting from students' learning the material.

| Week # | Dates | Topics Covered | Reading | Assignment |
|---------|----------------------------|--|-------------------------|--------------|
| Week 1 | January 10 January 12 | Course introduction Overview: chemicals in the environment | syllabus 1–17, 23–27 | |
| Week 2 | January 17 January 19 | no class – Martin Luther King, Jr., holiday Review of env. chemistry and units of concentration | 28–47 | |
| Week 3 | January 24 January 26 | Equilibrium partitioning Equilibrium partitioning | 72–90 90–105 | Homework 1 |
| Week 4 | January 31 February 2 | Equilibrium partitioning Equilibrium partitioning | 105–111 | Homework 2 |
| Week 5 | February 7 February 9 | Inter-phase mass transfer Inter-phase mass transfer | 115–134 134–148 | Homework 3 |
| Week 6 | February 14 February 16 | Inter-phase mass transfer Chemical reactions | 48–67 | Homework 4 |
| Week 7 | February 21 February 23 | Chemical reactions Chemical reactions | | Homework 5 |
| Week 8 | February 28 March 2 | catch-up day or ad-hoc topic Review of mass (and energy) balances | 67–71 17–22 | Homework 6 |
| Week 9 | March 7 March 9 | Midterm exam Review of mass (and energy) balances | | Midterm exam |
| | March 14 March 16 | no class – spring break | | |
| Week 10 | March 21 March 23 | Reactor theory Reactor theory | 17–22 | Homework 7 |
| Week 11 | March 28 March 30 | Reactor theory Lab experiment: preparation | | Homework 8 |
| Week 12 | April 4 April 6 | Lab experiment Lab experiment | | |
| Week 13 | April 11 April 13 | Transport by advection, diffusion, and dispersion Transport by advection, diffusion, and dispersion | 165–184 184–194 | Lab report |
| Week 14 | April 18 April 20 | Transport by advection, diffusion, and dispersion Tying it all together | 111–114 | Homework 9 |
| Week 15 | April 25 April 27 | Tying it all together Tying it all together | 148–164 | Homework 10 |
| Week 16 | May 2 May 4 | Final exam, 10:00–noon | | Final exam |

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Class Policies: 1, Grading

- Each student in the class will be assigned a letter grade at the end of the semester.
- Assigned grades can potentially range from A+ to F, or FF for academic dishonesty.
- Plus/minus modifiers will be used as deemed appropriate by the instructor (e.g., A-, B+, etc.).
- Your overall grade will be a weighted average of your homework grade (22.5%), your midterm exam grade (22.5%), your laboratory grade (10%), and your final exam grade (45%).
- Attendance in class does not factor into your semester grade other than helping you to perform well on assignments and exams (i.e., there are no "class attendance points" awarded).
- This class does *not* use a fixed grading scale (e.g., 90=A, 80=B, etc.). The grading scale will be set depending on student performances on the exams and the homework assignments. That way, if the exams are particularly difficult or particularly easy this year, the grading scale will take that into account. Throughout the semester, I will give feedback to students so that you will know how you are performing in the class and so that you know how to interpret your numerical scores.
- Students who cheat or plagiarize should expect to receive a grade of F or, more likely, FF.

Class Policies: 2, Laboratory Experiment

- We will conduct one lab experiment during the semester that is closely tied to the lecture material from the course. Details of the laboratory experiment will be provided in separate documents.
- Depending on the size of the class, the experiment will likely be conducted by pairs or teams of sudents. The size of the teams will be determined after we know the class enrollment.
- The lab experiment is intended to foster or inculcate multiple skills and competencies: teamwork, data analysis, effective written communication, hands-on skill with common lab equipment, and ability to apply theoretical concepts to actual data.
- Your grade on the lab will depend mostly on your participation and on the quality of your lab write-up, rather than on the quality of the data you gather. The quality of the data might be a minor consideration in the determination of your grade.

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Class Policies: 3, Problem Sets / Homework

- There will be 9 or (more likely) 10 homework sets to be performed during the semester.
- Depending on how many students are enrolled in the class, I might require assignments to be completed in groups. All students in the group will receive the same score on the assignment. During the first week of class, once the enrollment is set, we will determine if homework assignments will be completed individually, in pairs, or in groups.
- Even if assignments are completed by a group, it is recommended that *all* students work industriously to complete the homework assignments to maximize their mastery of the material covered this semester. If you do a good job on the homework assignments, you are likely to perform well on the exams. If you don't spend the time on the homework, then you are likely to have difficulty on the exams.
- The instructor and the TA will both have office hours during the week to help students with homework problems.
- Students may discuss the homework with each other. However, whatever work is submitted by a group should represent work actually completed by that group. You must conduct the actual computations and write up your own work without referring to the solutions of people outside your group. Copying the work of others (including text, computations, figures, tables, sections of computer programs, spreadsheets, or sections of lab reports) will be considered cheating.
- You may not refer to a previous year's solution sets when completing the homework. That constitutes referral to somebody else's work and is therefore considered cheating.
- Assignments will usually be distributed at least one week before the due date.
- Assignments are due in class on their due date unless otherwise noted. Occasionally, assignments
 will be due on a non-class day. In those cases, I will provide instructions on how to submit the
 completed work.
- Homework solutions will be provided, usually after the next class following the due date.
- Each group is allowed one late homework submittal during the semester -- no questions asked. Late assignments must be submitted by the beginning of the next class after the original due date. After one late submittal, no late homework will be accepted from that group regardless of reason or excuse. You get one "freebie," and then that is it!
- Homework should be neat and legible, on standard 8.5-by-11-inch or A4 paper, stapled.
- Report numerical answers to a reasonable number of significant digits. The point of this is that you should consider the level of uncertainty associated with your reported answer.
- Your homework solutions must include at least enough detail that I can follow your reasoning and calculations. An answer provided without this level of detail will be considered insufficient.
- Helpful hint: when performing calculations, be careful of your units. You will catch about 90% of your mistakes (yes, really) if you take proper care of your units.

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Class Policies: 4, Tests / Exams

- There will be a midterm exam given in class and a final exam given at the time set by the registrar.
- The midterm exam will probably be on Monday, March 7. The date could be changed to March 2 or March 9 if there is a compelling reason. I will announce a firm date in plenty of time for you to prepare.
- The final exam will be on Monday, May 2, from 10:00-12:00, as determined by the registrar. Re-scheduling the final exam is not possible because the date and time are set by the registrar.
- The format of the examinations (quantitative, qualitative, problem-solving, multiple choice, true/false, essay, etc.) will be left to the discretion of the instructor. I expect that most of the questions will be quantitative problem-solving, but there could be qualitative discussion questions too.
- Exams will be closed-book, but students are permitted to use a *personal note sheet*: one double-sided 8.5-by-11-inch sheet for the midterm, two for the final. On these sheets students may write whatever they like. Sheets must be hand-written no laser printing, scanning, photocopying, etc. Retrieval of information by other means during the examination will be considered cheating.
- If USF requires us to move to on-line teaching and exams, administering and proctoring the tests becomes challenging. In such a situation, *probably* we will move to open-book format, and *probably* you will be allowed to use the internet for tests, but it is not guaranteed. For in-person tests, text books and internet are not allowed.
- Students who will not be available for an exam should inform me far enough *before* the exam to make alternate arrangements.
- Students who miss an exam unexpectedly (e.g., due to sudden illness, family emergency, or other unforeseen circumstances) must provide documentation or evidence of the reason for missing the exam. It will then be *up to my discretion* whether a "make-up" exam will be offered.
- My intention is to design exam questions such that students who have attended the class and who have diligently completed the homework assignments will be familiar with all the material needed to answer the questions. It will not be my intention to surprise you, only to challenge you.
- Generally, exam questions are intended to test the most important concepts of the class. A good exam should require the students to demonstrate their mastery of the material by synthesizing and applying the most important concepts of the course. Exam questions are not likely to test students on their recall of minutiae.
- Helpful hint: when performing calculations, be careful of your units!! You will catch about 90% of your mistakes (yes, really) if you take proper care of your units.

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Class Policies: 5, Attendance

- Attendance in class lectures is recommended but not required. It is likely that diligent attendance
 in class lectures will improve your understanding of the course material, and, hence, improve your
 semester grade.
- Attendance in class does not factor into your semester grade other than helping you to perform well on assignments and exams (i.e., there are no "class attendance points" awarded).
- If you miss class, there is no need to inform me or to provide me with documentation for your absence. (I don't take it personally, really.) However, I do recommend that you acquire the lecture notes from a classmate.
- If you choose to attend class, I require that you do not engage in behavior that distracts me or that disrupts the class for others in attendance:
 - Please make sure mobile phones are turned off. <u>NO TEXTING DURING CLASS!</u>
 - Laptop computers should be used only for taking notes, not for e-mail, web browsing, or any other activity that might distract your classmates or your instructor.
 - Please do not chat with your classmates, read the newspaper, work on homework for other courses, or engage in any other behavior that is distracting to your classmates or to your instructor.
 - If you need to do something other than participate in the class lectures, then please do so outside the classroom.
 - Students who are engaged in such activities will be asked to leave the classroom.

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Class Policies: 6, Academic Honesty

- All materials generated for this class (including, but not limited to, syllabi, notes, tests, exams, in-class materials, review sheets, and problem sets) are copyrighted. This includes materials that are posted on Canvas as well as materials distributed in class. You may use the materials as a student in the class, but you do not have the right to copy, post, or distribute these materials unless the instructor (or other copyright holder) expressly grants permission.
- Students may record class for their own private, personal use. Recordings may not be given, sold, or otherwise distributed to anybody who is not registered in the class this semester.
- No form of scholastic dishonesty (cheating, plagiarism, etc.) will be tolerated. As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have permission of that person. This includes copying material from books, reports, journals, pamphlets, handouts, other publications, web sites, etc., without giving appropriate credit for those ideas and/or without identifying material as quotations when taken directly from another source.
- All tests and exams must be completed individually without the aid of any other person.
- You may discuss assignments with students who are not in your group. However, when you
 prepare your assignments, you must do so without referring to the work of students who are
 not in your group. Copying assignments from a student outside your group is considered
 plagiarism. See also Class Policy #3, above.
- It is the responsibility of each student to understand what constitutes plagiarism. Claiming ignorance will not gain you leniency.
- Students who cheat or plagiarize will be assigned a semester grade of FF.
- Violation of these rules -- *even unintentionally!* -- can result in disciplinary action including a grade penalty, up to and including an F or FF in the course, suspension, dismissal, and expulsion from USF. If you have any questions regarding plagiarism or other forms of scholastic dishonesty, consult the relevant sections of the USF student catalogs, and/or ask the instructor.
- I am not bluffing. Students have failed my classes because of cheating. Don't cheat.

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Appendix: USF Academic Policies

On the pages that follow are a number of policies that USF has asked instructors to include in their syllabi. Students should read these policies carefully as they apply to *all* classes at USF.

For most of the policies that follow, only an abbreviated form of the official policy or regulation is provided in this syllabus. Complete details are generally available to students on-line. Specifically, USF's official wording for some of these policies is available at the following web sites.

https://www.usf.edu/provost/faculty/core-syllabus-policy-statements.aspx

http://regulationspolicies.usf.edu/policies-and-procedures/

https://www.usf.edu/undergrad/students/academic-policies.aspx

Finally, USF has suggested that I include the following wording in my syllabus, which is kind of repetitive with what I just wrote above...but I don't want to get in trouble with the university, so here it is:

Policies about accessibility, religious observances, academic grievances, academic misconduct, and several other topics are governed by a central set of policies, which apply to all classes at USF:

https://www.usf.edu/provost/faculty/core-syllabus-policy-statements.aspx

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Academic Integrity (USF System regulation 3.027)

Academic integrity is the foundation of the University of South Florida's commitment to the academic honesty and personal integrity of its university community. Academic integrity is grounded in certain fundamental values, which include honesty, respect, and fairness. Broadly defined, academic honesty is the completion of all academic endeavors and claims of scholarly knowledge as representative of one's own efforts. The process for faculty reporting of academic misconduct, as well as the student's options for appeal, are outlined in detail in <u>USF Regulation 3.027</u>.

Academic Grievance Procedure (USF System policy 10-002)

The purpose of these procedures is to provide all undergraduate and graduate students taking courses at the University of South Florida an opportunity for objective review of facts and events pertinent to the cause of the academic grievance. An "academic grievance" is a claim that a specific academic decision or action that affects that student's academic record or status has violated published policies and procedures, or has been applied to the grievant in a manner different from that used for other students.

Disability Access (USF System policy 0-108)

Students with disabilities are responsible for registering with Student Accessibility Services (SAS) (SVC 1133) in order to receive academic accommodations. SAS encourages students to notify instructors of accommodation needs at least five (5) business days prior to needing the accommodation. A letter from SAS must accompany this request. Please visit the **Student Accessibility Services website** for more information.

[Special note: Because of the COVID-19 pandemic, SAS may alter its typical procedures for Fall 2021. For instance, I do not know if SAS will offer in-person exam proctoring for the 2021 fall semester. Check with SAS to learn about other changes from typical operation.]

(*Instructor's note*: The Americans with Disabilities Act is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact SAS as soon as possible.)

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Disruption of Academic Process (USF System regulation 3.025)

Disruptive students in the academic setting hinder the educational process. Disruption of the academic process (<u>USF Regulation 3.025</u>) is defined as the act, words, or general conduct of a student in a classroom or other academic environment which in the reasonable estimation of the instructor: (a) directs attention away from the academic matters at hand, such as noisy distractions, persistent, disrespectful or abusive interruption of lecture, exam, academic discussion, or general University operations, or (b) presents a danger to the health, safety, or well-being of self or other persons.

Food and Housing Insecurity

We recognize that student facing financial difficulty in securing a stable place to live and/or in affording sufficient groceries may be at risk of these financial issues affecting their performance in classes. Students with these needs are urged to contact Feed-A-Bull (<u>feedabull@usf.edu</u> or <u>their website</u>), or Student Outreach and Support (<u>socat@usf.edu</u> or <u>their website</u>).

Intellectual Freedom and Viewpoint Diversity Act (House Bill 233)

Preliminary Guidance Document

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal, educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach enrolled students about a particular subject. Recording class activities other than class lectures, including but not limited to lab sessions, student presentations (whether individually or part of a group), class discussion, clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, private conversations between students in the class or between a student and the faculty member is prohibited. Recordings may not be used as a substitute for class participation and class attendance and may not be published or shared without the written consent of the faculty member. Failure to adhere to these requirements may constitute a violation of the **USF Student Conduct Code**.

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Religious Observances (USF System policy 10-045)

All students have a right to expect that the University will reasonably accommodate their religious observances, practices and beliefs (<u>USF Policy 10-045</u>). The University of South Florida, through its faculty, will make every attempt to schedule required classes and examinations in view of customarily observed religious holidays of those religious groups or communities comprising USF's constituency. Students are expected to attend classes and take examinations as determined by the university. No student shall be compelled to attend class or sit for an examination at a day or time prohibited by his or her religious belief. However, students should review the course requirements and meeting days and times to avoid foreseeable conflicts, as excessive absences in a given term may prevent a student from completing the academic requirements of a specific course. Students are expected to notify their instructors at the beginning of each academic term if they intend to be absent for a class or announced examination, in accordance with this Policy.

Sexual Misconduct / Sexual Harassment (USF System policy 0-004)

USF is committed to providing an environment free from sex discrimination, including sexual harassment and sexual violence (<u>USF Policy 0-004</u>). The USF Center for Victim Advocacy is a confidential resource where you can talk about incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence. This confidential resource can help you without having to report your situation to the Title IX Office unless you request that they make a report. Contact the USF <u>Center for Victim Advocacy</u>: 813-974-5757. Please be aware that in compliance with Title IX and under the USF Policy, educators must report incidents of sexual harassment and gender-based crimes including sexual assault, stalking, and domestic/relationship violence. If you disclose any of these situations personally to an educator, he or she is required to report it to the Title IX Office. For more information about Title IX, a full list of resources, or to report incidents of sexual harassment, sexual violence, relationship violence or stalking visit: <u>usf.edu/title-ix</u>

Statement of Academic Continuity (or, in other words, emergencies)

In the event of an emergency, it may be necessary for USF to suspend normal operations. During this time, USF may opt to continue delivery of instruction through methods that include, but are not limited to: Canvas, Teams, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor the Canvas for each class for course-specific communication, and the USF, College, and Department websites, emails, and <u>ALERTUSF</u> messages for important general information (USF Policy 6-010).

(*Instructor's note*: examples of "emergency" could be a hurricane, an outbreak of contagious disease (!!!), etc.)

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"Incomplete" Grades (http://ugs.usf.edu/policy/IGradePolicy.pdf, accessed August 2019)

An "I" grade indicates incomplete coursework and may be awarded to graduate and undergraduate students. (Undergraduate rules apply to non-degree-seeking students.) It may be awarded to an undergraduate student only when a small portion of the student's work is incomplete and only when the student is otherwise earning a passing grade. The instructor will be required to complete the Igrade contract online when posting the semester grade at the end of the term, identifying the remaining coursework to be completed, the student's last day of attendance, and the percent of work accomplished to this point. This online contract will be automatically copied to the student's email and to the Registrar. Until removed, the "I" is not computed in the GPA for either undergraduate or graduate students. The time limit for removing the "I" is to be set by the instructor of the course. For undergraduate students, this time limit may not exceed two academic semesters, whether or not the student is in residence, and/or graduation, whichever comes first. "I" grades not removed by the end of the time limit will be changed to "IF" or "IU," whichever is appropriate. If an instructor is willing, he or she may accept work from a student after an I grade has changed to an IF or IU grade, and assign the student a final grade in the course, unless the student has graduated. Whether or not the student is in residence, any change to "IF" grades will be calculated in the cumulative GPA and, if applicable, the student will be placed on appropriate probation or academically dismissed. Students are not required to re-register for courses in which they are only completing previous course requirements to change an "I" grade. However, if a student wants to audit a course for review in order to complete course requirements, full fees must be paid.

Auditing Privilege (USF System policy 10-006, section III.A.4.)

Accepted students eligible to enroll in courses may register to audit a course strictly on a space-available basis, provided the student:

- a. requests and receives any necessary approval as determined by the instructor or other designated responsible office;
- b. understands that no exams, grades, credit or other academic evaluations may be provided;
- c. officially registers to audit the course by the end of drop/add period and does not attend any class session prior to the official registration without affirmative approval by instructor;
- d. attends the class as a listener which means instructors may limit the auditing student's participation in class including class projects or other interactive graded or ungraded activities;
- e. complies with all University Regulations and Policies of the University;
- f. complies with all conditions of audit registration and any deviation from those conditions will be considered disruptive and a student found to be disruptive to the class or academic process may be removed from the class under USF3.025 Academic Disruption; and
- g. is responsible for all fees for audit which are the same as for full enrollment for credit, except outof-state tuition is not charged.