

## Course Information

Course Number:	Math 365
Course Title:	Structure of Math I
Time/Location:	Section 501 meets Tuesdays and Thursdays from 8:00 – 9:15 AM in MPHY 203 (not via Zoom) Section 502 meets Tuesdays and Thursdays from 9:45 – 11:00 AM via Zoom (check the course page in eCampus for the Zoom link) All times listed in this course are Central Standard Time (CST) unless noted otherwise.
Credit Hours:	3

## Instructor Details

Instructor:	Tamara Carter, Instructional Associate Professor
Office:	Blocker 322C
Phone:	Math Department: 979-845-3261. There is no phone in my office, so email is the best way to reach me.
E-Mail:	tcarter@tamu.edu
Office Hours:	Online Mondays 4:15 to 5:00 PM, Tuesdays 11:00 AM to noon, Wednesdays 11:00 – 11:45 AM and Thursdays 11:00 AM to 12:30 PM (check the course page in eCampus for the Zoom link) and by appointment.

## Course Description

*Math 365 Structure of Mathematics I*, Credits 3. Informal logic, sets, relations, functions, whole numbers, numeration systems, binary operations, integers, elementary number theory, modular systems, rational numbers and the system of real numbers. Designed primarily for elementary teacher certification. Others must have consent of instructor.

## Course Prerequisites

Prerequisite: Must have completed University Core Curriculum mathematics requirements with a grade of C or better.

## Course Learning Outcomes

The purpose of taking the MATH 36X series of courses (MATH 365, 366, and 367) is for preservice elementary and middle school teachers to:

- Acquire knowledge of the mathematics topics beyond elementary school mathematics that can aid in developing deeper knowledge of elementary school mathematics;
- Gain experience in using this deeper understanding of the content to answer EC-8 students' math questions (at both a conceptual and procedural level), interpret EC-8 students' possible confusion about mathematics, and trouble-shoot EC-8 students' possible mistakes;
- Develop the disposition and ability to look at a problem from different points of view;
- See connections between different topics and branches of mathematics;
- Acquire knowledge of where to find potential material for enrichment for more advanced elementary students.

The overall goal of MATH 365 is to provide preservice elementary and middle-school teachers with the mathematical knowledge necessary to provide effective classroom instruction related to numbers and operations. MATH 365 is a mathematics CONTENT course for students working toward a teaching certificate that allows them to teach mathematics from Early Childhood through Grade 8. It IS NOT a methods course in which the main focus is on how to TEACH mathematics. It IS a course in which you will be asked to DO AND LEARN mathematics by engaging in logical mathematical thinking about numerical concepts so that you will have a strong content-knowledge base from which you can draw to make appropriate instructional decisions and generate appropriate mathematical questions as a mathematics teacher in elementary or middle school.

Students who participate in this course should improve their ability to:

- Appropriately represent in multiple ways the content related to numbers and operations that they are expected to teach;
- Develop and explain (verbally, pictorially, and in writing) their own mathematical thinking about numbers and operations;
- Use logical reasoning in the context of numbers and operations, including making conjectures and justifying them or providing counterexamples to disprove them; and
- Analyze and evaluate the mathematical reasoning of others.

The development of these broad outcomes will be supported by the accomplishment of more specific outcomes that will be articulated during the course.

During the semester, you will be expected to do homework that has been assigned to promote class discussion. There will be frequent in-class discussions of concepts and language that you will see again on the exams. It is impossible to replicate these experiences outside of the classroom environment; therefore, class attendance (either in person for section 501 or on Zoom for section 502) and participation are extremely important.

In addition, you are encouraged to schedule some time to work with other classmates outside of class. The majority of the content of this course focuses on the vocabulary and language of mathematical reasoning. The best way to learn vocabulary and language is to **use** it! In previous semesters, students in this course have found it very helpful to form small study groups, or at least to have a study partner, with which to discuss the ideas and homework problems. Office hours (or times you schedule by appointment) are also available for extra discussion and questions. They are also a great place to establish a study group.

## Textbook and/or Resource Materials

### *Textbook*

Billstein, R., Boschmans, B., Libeskind, S., & Lott, J. *A Problem Solving Approach to Mathematics for Elementary School Teachers* (Thirteenth Edition).

### *Calculator*

Calculators are not needed or allowed on exams. You may use a calculator as you reason through material in class or on homework questions, but make sure you know how to work the problems without a calculator by exam time.

### Other Technology

You will need a computer that meets TAMU's Bring Your Own Device policy (<https://it.tamu.edu/services/academics-and-research/teaching-and-learning-tools/computer-requirements/>).

You will need to scan and upload written work as a PDF (this can be achieved with a cell phone or other technology – directions will be provided in eCampus).

Online assessments will be completed electronically using a combination of eCampus and Gradescope and proctored over Zoom. In order to do this, the following technical requirements are needed:

Appropriate hardware (laptop or desktop computer, a second device such as a mobile phone, and high-speed internet connection)

Appropriate software (PDF reader, Zoom on both your phone and computer, and the latest update on an internet browser - Chrome or Firefox is recommended)

### Texas A&M Student ID

Bring your student ID to each class/exam. If you have a question about your grade, please bring your ID when we talk.

### Texas Essential Knowledge and Skills for Mathematics (Revised)

Available here: <http://ritter.tea.state.tx.us/rules/tac/chapter111/index.html>

### Grading Policy

The course grading will be based on the tables below. At the end of the semester, you will receive the grade you *earned*, according to the scale given. Due to FERPA privacy issues, I cannot discuss grades over email or phone. If you have a question about your grade, please schedule an individual Zoom meeting or breakout room with me and bring your TAMU ID.

### Grade Breakdown

Activity	Date	Percentage
Daily Grades	Regularly	10%
Quizzes	Regularly	10%
Formal Explanation I	By 8 AM on 3/10/21	10%
Formal Explanation II	By 8 AM on 4/19/21	10%
Exam I	2/25/21	20%
Exam II	4/13/21	20%
Final Exam	See below	20%
<b>TOTAL</b>		<b>100%</b>

Range	Grade
$90 \leq \text{Average} \leq 100$	A
$80 \leq \text{Average} < 90$	B
$70 \leq \text{Average} < 80$	C
$60 \leq \text{Average} < 70$	D
Average < 60	F

### Appeal Policy

Students have one week upon the return of individual grades to notify the instructor of any inaccuracies in their graded work. Students should bring all grade disputes to their instructor in an individual Zoom meeting. Due to FERPA privacy issues, grade disputes will not be discussed over email or in the classroom.

### *Daily Grades*

You will have a daily grade (DG) in eCampus between most class sessions. Daily grades will typically be assigned one class and due at 6 AM on the date of the next class (for most students, that means that they are due before they go to bed the night before class). For Daily Grades, you may use your book, notes, calculators, internet sources, and even help from other people as long as you can explain the answers that you submit. This is an opportunity for you to interact with the material with as much support as you need to understand the answers you submit.

### *Quizzes*

Quizzes will be administered most week through eCampus and Gradescope. You will need to download each quiz, write on the quiz (electronically, on blank paper, or on the paper you print out), and upload a PDF of your work. For quizzes (unless stated otherwise on the quiz instructions) you may use your book and your notes. However, you may NOT use internet sources, humans, calculators, or any other sources that are not specifically approved. This is an intermediate step of independence from resources to help prepare you for exams.

### *Formal Explanations*

Explanations (both verbal and written) are vitally important for effective communication of mathematics. Sometimes in your teaching career, you will need to thoroughly explain a topic in writing (to send home to a student who is ill, to send home to explain to parents, or as a replacement for a textbook) at a more complete level than the quizzes. You will work in groups and submit two formal explanations for this course. I suggest that you start early and work through multiple drafts of the assignment before submitting it.

### *Exams*

There will be two proctored midterm exams administered during published class times. Everything discussed in class, experienced within an activity or assignment, or found in the homework, reading assignments, or explanations is eligible content for an exam. **You will be expected to show all of your work, and many items will require expository writing (such as explanations).** No calculators, cellphones or other electronic devices are allowed (other than for proctoring purposes). You will need to have your ID available at each exam. The exams will be proctored in person (section 501) or through Zoom (section 502). For exams proctored on Zoom, you will be required to set up a streaming video camera (cell phone or USB webcam) in such a way that the proctor will be able to view your workspace during the exam. The online proctoring sessions may be recorded.

### *Final Exam*

The final exam will be comprehensive and is required for all students. You will need to bring your ID to your final exam. If your final exam grade is higher than your lowest test grade, the grade on your final will also replace your lowest test grade in the final grade calculation.

The final exam will be held on **Wednesday, May 5<sup>th</sup>. Section 501 will meet at 5 PM. Section 502 will meet at 8 AM.**

You can check the time for all of your final exams at <https://registrar.tamu.edu/Courses,-Registration,-Scheduling/Final-Examination-Schedules>

### *Attendance and Make-up policies*

Attendance is essential to complete this course successfully. “Attending” class is not just physically being present in the room (section 501) or on the Zoom session (section 502). To really attend class, you

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should have your preparation work completed by the beginning of class, present your work to the class or your group when requested, share ideas with classmates, and listen attentively when other people share their ideas. **Please attend and participate in all classes.**

### *Excused Absences*

University student rules concerning excused and unexcused absences, as well as makeups, can be found at <http://student-rules.tamu.edu/rule07>. In particular, make-up exams and quizzes or late Daily Grades will NOT be allowed unless a **University approved reason is given to me in writing**. It is **highly recommended** that you notify me before an absence when possible so appropriate arrangements can be made ahead of time. Otherwise (e.g. accident, or emergency), you must notify me **within two business days** of the missed exam, quiz, or assignment to arrange a makeup. I understand that there are some reasons to miss an assignment that are not listed as excused absences, so I will drop one daily grade and one quiz grade when I calculate grades at the end of the semester.

### *Technical Difficulties*

If you experience internet connection issues during class time (for section 502), please contact me as soon as possible to make sure you have access to content or activities you missed. In addition, if you experience technical difficulties while completing or submitting work, email me immediately. We all know that technology is not 100% reliable. Please have a backup plan in place so that minor technical issues do not prevent you from completing work on time. For instance, you should copy Zoom links to a file that you can access from your phone and have a plan of where to go if your normal internet provider or computer is having issues.

### *Make-up Exams and Quizzes*

Makeup exams/quizzes will only be allowed due to excused absences and the makeup must be taken as soon as possible after the missed exam/quiz. You will need to schedule to make up your exam/quiz within 3 business days of the originally scheduled time to allow for grades to be returned in a timely manner. If you know ahead of time you will be absent during an exam, please notify me in advance.

- It is YOUR responsibility to learn what you missed from class, obtain any notes and assignments, and complete assignments by the regularly scheduled due date. In other words, **missing class on the day work was assigned is not a reason for an extension**.
- If class is officially cancelled for any reason, you can expect that the assignments due/taken on the missed class day will be due/taken the next time the class meets. Please also check eCampus for additional information.
- No rule can cover every situation. If you encounter extenuating circumstances, **please communicate** with me as soon as possible.

### *Late Work Policy*

Late work will NOT be accepted unless you have a University approved reason and contact me within 2 working days of the missed assignment.

## Tentative Course Schedule

Week	Topic	Sections
Week 1: 1/18 – 1/22	Introduction to the course Logic Describing Sets	Introduction 2.1 2.2
Week 2: 1/25 – 1/29	Other Set Operations Numeration Systems	2.3 3.1
Week 3: 2/1 – 2/5	Numeration Systems Addition of Whole Numbers Subtraction of Whole Numbers	3.1 3.2 3.3
Week 4: 2/8 – 2/12	Subtraction of Whole Numbers Multiplication of Whole Numbers <del>Division of Whole Numbers</del> (moved to video)	3.3 3.4 <del>3.5</del>
Week 5: 2/15 – 2/19	<b>Campus Closed</b>	
Week 6: 2/22 – 2/26	Introduction to Integers Set of Rational Numbers  <b>Exam 1 – Thursday, February 25, 2021</b>	Overview of Chr. 5 6.1 <b>Exam 1</b>
Week 7: 3/1 – 3/5	<b>NO CLASS on TUESDAY – Texas Independence Day Holiday</b> Division of Whole Numbers Set of Rational Numbers	3.5 (video) 6.1
Week 8: 3/8 – 3/12	<b>Formal Explanation 1 due WEDNESDAY by 8 AM, 3/10/21</b> Set of Rational Numbers Terminating Decimals Addition, Subtraction, and Estimation with Rational Numbers	<b>FE1</b> 6.1 7.1 6.2
Week 9: 3/15 – 3/19	Addition, Subtraction, and Estimation with Rational Numbers Operations on Decimals part 1 <b>NO CLASS on THURSDAY – Redefined Friday</b> Proportional Reasoning Percents	6.2 7.2 part 1  6.4 (video) 7.4 (video)
Week 10: 3/22 – 3/26	Multiplication, Division, and Estimation with Rational Numbers	6.3
Week 11: 3/29 – 4/2	Multiplication, Division, and Estimation with Rational Numbers Operations on Decimals part 2 Repeating Decimals	6.3  7.2 part 2 7.3
Week 12: 4/5 – 4/9	Real Numbers Wrap up Module 2	7.5
Week 13: 4/12 – 4/16	<b>Exam 2 – Tuesday, April 13</b> Addition and Subtraction of Integers Multiplication and Division of Integers Divisibility	<b>Exam 2</b> 5.1 (video) 5.2 (video) 4.1

Week 14: 4/19 – 4/23	<b>Formal Explanation 2 due MONDAY by 8 AM</b> <b>Prime and Composite Numbers</b> GCD and LCM Variables Patterns	<b>FE2</b> <b>4.2</b> 4.3 8.1 1.2
Week 15: 4/26 – 4/30	Variables Patterns Equals Relations and Equations Functions Wrap up Module 3	8.1 1.2 8.2 8.3
Week 16: 5/3 – 5/7	<b>Final Exams:</b> <b>Section 501: Wednesday, May 5 at 5 PM</b> <b>Section 502: Wednesday, May 5 at 8 AM</b>	

## Other Course Information

### *Technology Support*

As much of our learning experience relies on technology, many students can get overwhelmed when something goes wrong or things get overwhelming. If you are looking for a curation of online learning resources, consider checking out <https://keeplearning.tamu.edu/>

If your need is specific to a course-related technology issue, consider seeking help from the 24/7 TAMU IT Help Desk. <https://it.tamu.edu/help/>

### *Classroom Environment*

Please do your part (attitudes, words, and actions) to make our class a place where everyone can feel comfortable exploring mathematical topics without distractions.

### *Remote Class Attendees (Section 502)*

When joining class via ZOOM, please join with your microphone muted so we do not hear the background noise. When you have a question during class there are a few communication options depending on the type of question you have.

- If it is a short question, feel free to use the chat window.
- If it is a longer question, you might prefer to wait until I ask for questions.
- If you cannot hear what is happening in class, you cannot see the appropriate material, or I miss your chat question, please unmute your microphone and politely interrupt. When we hear you, we will pause and give you time to let us know about the error.

It is important to me that you are involved in the class discussion even if we are not physically together in the same room, so please let me know if these methods are not allowing you to communicate effectively.

### *Office Hour Attendees*

I would like office hours to be a casual time when we can gather together in one room (Zoom room this semester) and discuss mathematics. This is like a study hall with some of your classmates and me in the room. This allows you to ask questions when you have them and lets you listen to other people's questions. You can come and go from office hours as your schedule permits.

Everyone attending office hours will be joining one room, so please mute your microphone when you are not speaking so we are not distracted by the background noise. If no one is speaking, please unmute and ask a question. If you need my attention while someone is talking, please use the chat feature. If you need to speak to me individually, let me know so we can move to a breakout room where the other students cannot hear the conversation.

### *Learning Resources*

#### Your Professor

**Communication is essential.** Many issues can be solved with effective communication. Please communicate with me before class, after class, during office hours, and via email.

#### Your Textbook

Please review your textbook and complete reading assignments PRIOR to our discussion of that section in class. This provides a framework in your brain for our discussions.

#### Your Class Notes

Please review your notes after each class and ask questions about anything that is not clear. Your notes will be very valuable as you study for exams as well.

#### Your Classmates

It is also important to communicate with your classmates. You will learn more and be able to build on each other's ideas if you discuss the material with other people. Please consider setting a regular time to meet. This is a useful idea to carry into your teaching career as well.

#### Thoughtful Practice

I strongly recommend that you practice problems from the book. These homework problems, if addressed independently, can provide an "exam-like" experience and provide background for your Formal Explanations. See the homework list posted in eCampus. You will notice that many of these problems are not like problems from the class notes. The goal is for you to have an opportunity to grapple with thought-provoking problems at your own pace. I will be happy to answer questions after you have worked with the problems. These deeper questions (especially the explanation questions) are great preparation for the exams.

#### Office Hours

As mentioned above, office hours are a great time and place to work on your homework and communicate with your classmates and professor.



### *Academic Integrity*

You will read more about the Academic Integrity Statement and Policy in the University Policies section. It is VERY important to me that you abide by that policy: “An Aggie does not lie, cheat or steal, or tolerate those who do.” If you have any questions about whether something would be considered cheating, ask me before you do it. However, here is some general guidance.

- In this course, I encourage you to discuss homework assignments and daily grade assignments and their solutions with your classmates. Study groups are a great way to learn. However, it is NOT permissible to copy homework solutions from another student. Make sure that you understand and could rework anything that you submit for a grade.
- It is NOT permissible to communicate about any aspect of any quiz or exam until ALL students have completed the quiz or exam. The penalties for violating this policy could include an F on an assignment, exam, or the entire course.

As stated above, for Daily Grades, you may use your book, notes, calculators, internet sources, and even help from other people on as long as you can explain the answers that you submit. Therefore, you are violating the honor code if you submit an answer that you got from another source but do not understand.

For quizzes (unless stated otherwise on the quiz instructions) you may use your book and your notes. However, you may NOT use internet sources, humans, calculators, or any other sources that are not specifically approved.

For exams, you may not use any sources other than your own brain.

### *Copyright of Materials*

All class materials (notes, tests, assignments, videos, etc.) are copyrighted and may not be copied, posted, or reproduced without permission.

## University Policies

### Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

### Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to [Student Rule 7](#) in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" ([Student Rule 7, Section 7.4.1](#)).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" ([Student Rule 7, Section 7.4.2](#)).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See [Student Rule 24](#).)

### Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" ([Section 20.1.2.3, Student Rule 20](#)).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at [aggiehonor.tamu.edu](http://aggiehonor.tamu.edu).

### Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or

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visit [disability.tamu.edu](https://disability.tamu.edu). Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

## Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, a person who is subjected to the alleged conduct will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with [Counseling and Psychological Services](#) (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's [Title IX webpage](#).

## Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in healthy self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at [suicidepreventionlifeline.org](https://suicidepreventionlifeline.org).

## COVID-19 Temporary Addendum to Minimum Syllabus Requirements

The Faculty Senate temporarily added the following statements to the minimum syllabus requirements in Spring 2021 as part of the University's COVID-19 response.

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### *Campus Safety Measures*

To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, Texas A&M University has adopted policies and practices for the Spring 2021 academic term to limit virus transmission. Students must observe the following practices while participating in face-to-face courses and course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.):

- Self-monitoring—Students should follow CDC recommendations for self-monitoring. **Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely if that option is available, and should not participate in face-to-face instruction.**
- Face Coverings—[Face coverings](#) (cloth face covering, surgical mask, etc.) must be properly worn in all non-private spaces including classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is difficult to reliably maintain. Description of face coverings and additional guidance are provided in the [Face Covering policy](#) and [Frequently Asked Questions \(FAQ\)](#) available on the [Provost website](#).
- Physical Distancing—Physical distancing must be maintained between students, instructors, and others in course and course-related activities.
- Classroom Ingress/Egress—Students must follow marked pathways for entering and exiting classrooms and other teaching spaces. Leave classrooms promptly after course activities have concluded. Do not congregate in hallways and maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.
- To attend a face-to-face class, students must properly wear an approved face covering. If a student refuses to wear a face covering, the instructor should ask the student to leave. If the course includes synchronous delivery for that class session, the instructor should ask the student to join the class remotely. Otherwise, the student would miss the class session and any associated attendance related benefits. If the student does not leave the classroom, the faculty member should report that student to the [Student Conduct office](#) for sanctions. Additionally, if the class has a synchronous remote option, the faculty member may choose to teach that day's class remotely for all students or, if the class session does not have a synchronous remote option, dismiss the entire class.

### *Personal Illness and Quarantine*

Students required to quarantine must participate in courses and course-related activities remotely, if that option is available, and **must not attend face-to-face course activities**. Students should notify their instructors of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities.

Students experiencing personal injury or illness that is too severe for the student to attend class qualify for an excused absence (See [Student Rule 7, Section 7.2.2.](#)) To receive an excused absence, students must comply with the documentation and notification guidelines outlined in Student Rule 7.