

MA 493-601: CALCULUS II BRIDGE COURSE
FALL 2021 - FIRST 8-WEEK SESSION
NORTH CAROLINA STATE UNIVERSITY

★ UPDATED AUG 23, 2021 ★

1. IMPORTANT DETAILS

- Instructor: Jiewen Sheng
- Email: jsheng4@ncsu.edu
- Office: SAS 4223 (This course will have office hours online only)

Please be respectful and professional during Zoom meetings and when sending emails. NO email will be read or answered unless the email includes

- ★ a specific detailed subject line (for example: *MA 493 Self-Check Quiz 4 Problem 3*),
- ★ the course and section number,
- ★ your name, and
- ★ what you have already attempted to do to resolve the issue.

I will read all thoughtful and signed emails but will not promise to be able to answer all of them. Try to find the information on your own first.

- Moodle page: <https://moodle-courses2122.wolfware.ncsu.edu/course/view.php?id=4138>
 - Any announcements posted on the Moodle page will also be sent to your NC State email.
 - Please check your email notification settings in Moodle to ensure that you receive course announcements, and please check your NC State email often.
- Student/Office hours: Online office hours are available throughout the semester by appointment. Email your instructor ahead of time to make an appointment. Office hours will occur online via Zoom - **please see the “Zoom Instructions” document on our course Moodle page before attending online office hours.** During office hours, you can ask your questions regarding lecture videos, notes, self-check quizzes, graded homework problems, and general course material.
- Textbook: Calculus for Engineers and Scientists, Volume I by John E. Franke, John R. Griggs, and Larry K. Norris, First Edition (Required)
 - Textbook available as an electronic-book through your MA 241 WebAssign: since you are also enrolled in MA 241, you will purchase MA 241 WebAssign Access Code for textbook and homework assignments for MA 241: webassign.ncsu.edu
 - The MA 141 textbook (*Calculus for Engineers and Scientists, Volume I*) is available under the *Resources* tab through your MA 241 WebAssign.
 - I expect you to read sections of the textbook around the time of lectures and attempt homework from those sections. The textbook has additional examples and discussion that you may find helpful. Some test questions may resemble examples from the textbook.
- Grades: Available on course Moodle page.

2. COURSE DETAILS

2.1. **Course Description.** MA 493 is a 1-hour credit corequisite course.

- This course is designed to prepare students with the advanced prerequisite concepts and skills needed for MA 241.
- This bridge course is for students who have previously earned 3-credit hours of Calculus 1 (MA 131 or equivalent) but need the MA 141-241-242 sequence due to changes in academic plans.
- MA 493 is a corequisite course: students will enroll in 1-credit MA 493 along with 4-credit MA 241.
- Prerequisite: MA 131 or equivalent 3-credit hour calculus 1 course and department approval.
- Corequisite: MA 241.
- Topics include derivatives and integrals of trigonometric, inverse trigonometric, logarithmic, and exponential functions; implicit and logarithmic differentiation; integration by substitution and integration by parts; formal definitions of calculus concepts; applications of derivatives and integrals.
- This self-paced, bootcamp-style, online, 8-week, corequisite course is *fast paced*, and it may become difficult to catch up if you fall behind. All learning materials (videos, blank templates, and filled-in notes) are available on the course Moodle page.

2.2. **Course Learning Objectives (CLOs).** Upon successful completion of this course, students will be able to

- (1) Determine derivatives of complicated functions;
- (2) Use varying techniques, including substitution and integration by parts, to evaluate indefinite and definite integrals;
- (3) Apply differentiation in diverse contexts to solve problems graphically, symbolically, and numerically;
- (4) Set up and solve integration problems in various applications;
- (5) Write and apply formal limit definitions of calculus concepts;
- (6) Recall precalculus knowledge to gain insight into limits, derivatives, indefinite and definite integrals.

2.3. **Course Phases.** First portion of MA 493: designed to prepare students with the advanced prerequisite concepts and skills needed for MA 241. Students will cover topics pertaining to differentiation and integration that are necessary during the first weeks of MA 241 (derivatives and integrals involving trigonometric, inverse trigonometric, exponential, and logarithmic functions, implicit and logarithmic differentiation, and the integration techniques of substitution and integration by parts).

Second portion of MA 493: designed to introduce topics that may not have been covered in MA 131 but are covered in MA 141. Students will cover applications of differentiation and integration (related rates, L'Hôpital's Rule, linear approximation, Newton's method, the Mean Value Theorem, and areas between curves).

Third portion of MA 493: designed to introduce topics that may not have been covered in MA 131 but are covered in MA 141. Students will use formal definitions to gain insight into limits, continuity, derivatives, and definite integrals.

2.4. **Structure.** This course will be delivered *asynchronously online*.

MA 493 is organized as 16 modules for 16 days of learning, with each day covering 1-2 modules (except for Day 1 orientation). Learning Days for this 1-credit course are scheduled to be equivalent to two class days per week during this 8-week session; however, **some weeks will have three Learning Days**, and some weeks will have one Learning Day. There are three tests in addition to the 16 Learning Days.

This course consists of

- Learning Days: Each Learning Day has three components:

- ★ *Online Module*: This is a page of learning content, including prior knowledge, learning objectives, lecture videos, notes, and related textbook sections. *You need to start each Learning Day by studying all the materials on this page.* Note: numbering for the modules and lecture videos/notes traces back to the MA 141 textbook sections.

Pre-recorded videos for each module will be available on the course Moodle page; blank templates for notes and filled-in notes accompany each lecture video. **I expect you to view the videos according to the schedule posted on the Moodle page.**

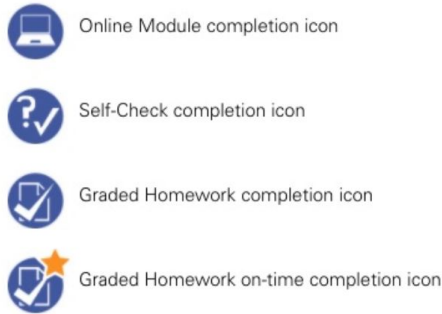
Since the lecture videos were not recorded in front of a live student audience, there may be occasional minor typos in the handwritten notes. If you have a question regarding the lecture videos or notes, feel free to email me, and I can include short errata files correcting any extra/missing pen-strokes from lectures.

- ★ *Self-Check*: There is a non-graded Moodle quiz for each module to help you check your understanding of newly learned concepts and skills on each Learning Day. Please complete the self-check quiz immediately after studying an online module before you move on.
- ★ *Graded Quiz/Homework*: There is a graded Moodle quiz for each Learning Day. The main purpose of homework is practicing individual methods through problem solving; this helps you assess how well you have learned the material.

Due dates for each graded homework are posted on the course Moodle page; graded homework assignments will close at the end of the corresponding testing window. *I highly recommend using separate notebooks for your lecture notes and your written work/solutions for each quiz/homework problem.* It is important to keep up with this work and not save it for the last minute: the system can be finicky, but more importantly, timely completion will help your understanding. If needed, extensions may be available, but there is a small penalty to help motivate you to keep up with your work in a timely manner. On-time completion of each homework earns a special icon on the MA 493 Road Map. *When calculating your final grade for this class, the two lowest homework/quiz grades will be dropped.*

You may not post self-check or graded homework questions (or similar questions) online or use any internet/online resources, including, but not limited to, Chegg, Photomath, WolframAlpha, Desmos, Symbolab, Google, Mathway, Course Hero, any derivative/integral calculators, or any other resource with worked solutions. If you feel like you are struggling with homework, please seek out help from the tutoring centers (see information under Course Resources below).

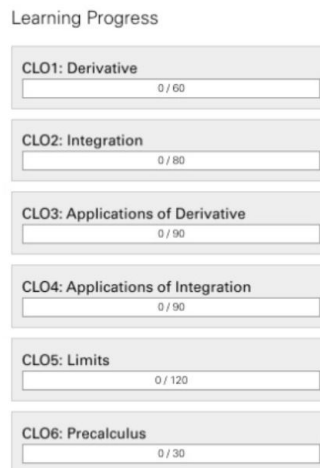
- Road Map and Learning Progress Points: Your learning completion progress is visually represented in the MA 493 Road Map at the top of our course Moodle page and in the Learning Progress block on the side of the course Moodle page. As you complete the Online Module, Self-Check, and Graded Homework for each day, you will earn a colored icon for each component. Graded Homework must be completed by the due date listed in the Moodle main page. By completing a Graded Homework quiz on-time, you will earn a special version of the icon! See below:



You should be aiming for a fully completed MA 493 Road Map, as shown:



Along with earning the icons, you will also earn Learning Progress points as you complete the modules and activities tied to each course learning objective. These points give you a sense of the weight of the course learning objectives and where you are in the learning process. But they will NOT impact your course grades.



- **Course Concept Question & Answer Forum:** A forum discussion will be set up in Moodle where you may post questions or answer other students' questions related to course material and self-check quizzes. *I recommend that you take advantage of this feature, as you may get help quickly from fellow students even if I am not immediately available for help.* In terms of the content that is posted in the forum, I would like you to collaborate in such a way that is in the best interest of everybody reading the posts. If you are considering to use the forum to support your homework efforts, first honestly work on the problem. Try to combine all information you have (course notes, videos, MA 141 textbook, other online resources, etc.). If you still seem to be stuck and you want to ask the forum members, expect support in finding the answers yourself rather than solving the entire problems. *A good hint can be valuable.* Carefully describe what you have already tried to get to a result so that replies can be as specific to your problem as possible. For those kind individuals who want to answer homework questions, please support the learning process and consider helping the poster finding the answers him/her/themself.

You are encouraged to discuss course material and self-check quizzes with other students, but you must write up the solution in your own words based on your own understanding. Any marked similarity in form or notation between submissions with different authors will be regarded as evidence of academic dishonesty, so protect your work.

- **Tests:** The tests are milestones that divide the course into three phases:

Before Test 1: Day 2, Day 3, Day 4, Day 5, Day 6

Before Test 2: Day 7, Day 8, Day 9, Day 10, Day 11

Before Test 3: Day 12, Day 13, Day 14, Day 15, Day 16

You are responsible for scheduling each test. *Three timed tests must be taken during a given time slot on the following days.* **To schedule each of your tests, please contact your instructor via email at jsheng4@ncsu.edu at least two days before you would like to take each test.**

★ Test 1:	Option 1:	Wednesday, September 1 st	3:00pm-4:00pm
	Option 2:	Thursday, September 2 nd	4:00pm-5:00pm
★ Test 2:	Option 1:	Monday, September 20 th	3:00pm-4:00pm
	Option 2:	Tuesday, September 21 st	4:00pm-5:00pm
★ Test 3:	Option 1:	Wednesday, October 6 th	3:00pm-4:00pm
	Option 2:	Thursday, October 7 th	4:00pm-5:00pm

Information and instructions pertaining to each test will be announced beforehand.

<p><i>During each test, students will be required to turn on their video during a Zoom meeting and adhere to additional guidelines.</i></p>

2.5. **Grading.** This course will use the following letter grading cutoffs: 100-97 A+, 96.9-93 A, 92.9-90 A-, and similarly for B/C/D plus/minus/etc. Satisfactory/Unsatisfactory and Audit grading per NC State policy. Grades will not be curved; it is theoretically possible for everyone in the class to get an A (or an F). Your grade depends only on *your* performance, *not* on how everyone else in the class performs. Therefore, it is in your best interests to help your classmates, while keeping the academic integrity policy in mind. Your final grade in this course will be determined by grades earned:

Component	Weight
Graded Quizzes/Homeworks	40%
Tests	60%

2.6. **Corrections to the grading.** If a grading error is found on a homework assignment, quiz, or test, then you should explain the error **in writing**, attached to the original assignment/quiz/test, to your instructor via email within 2 class periods after the assignment/quiz/test was returned. **Do not alter the original work.** The entire assignment/quiz/test may be re-graded, and the grade is *subject to remain the same, increase, or decrease.*

2.7. **Make-up policy for missing one of the three scheduled tests.** Test make-up policy is in accordance with NC State policy.

- (1) All anticipated absences must be excused in advance of the test date. These include University duties or trips (certified by an appropriate faculty or staff member), required court attendance (certified by the Clerk of Court), or religious observances (certified by the Department of Parent and Family Services): please see <https://dasa.ncsu.edu/students/absence-verification-process/>
- (2) Emergency absences must be reported within two days of the test date and must be appropriately documented (illness by an attending physician or family emergencies by Parent and Family Services).
- (3) If the absence is excused, there will be one make-up time within one week after the test date; if you cannot come to that time, then your raw final exam score will count for that test score. If you choose not to take the make-up test and the absence was excused within two days of the original test date, then your raw final exam score will count for that missing test score.
- (4) Make-ups for oversleeping, car trouble, or any other excuse not approved by the University may **ONLY** be given on the day of the test! Time of make-ups will be subject to instructor availability. **There will be an automatic 15 point deduction from the test.**

2.8. **Credit-Only, Audit, and Incompletes.** Students who wish to enroll in this class for credit-only should consult with the instructor and their advisor. It is the responsibility of the student to make appropriate and timely changes in mypack regarding their chosen course grading system. This course will use the following grading: 100-70 Satisfactory, 69.9-0 Unsatisfactory. Audit grading per University policy. An unfinished Incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) by the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an Incomplete grade is the responsibility of the student.

3. MISCELLANEOUS

3.1. Getting help. Remote learning could be hard, and students must take responsibility for their learning and seek help when needed. Communication with the instructor is essential to your success. If you have difficulties, I am here to navigate the situation with you - just reach out to me.

During semesters with on-campus classes, the Mathematics Multimedia Center (MMC) in SAS Hall has free tutoring on a first-come, first-served basis and is open throughout the week. MMC is currently physically closed while a decision is being made what type of services will be made available for the Fall of 2021. Check updates about this resource at <https://math.sciences.ncsu.edu/undergraduate/courses-faq/math-multimedia-center/>

Also consider help from the NCSU Academic Success Center which has a tutoring center online for help in Math 141: <https://asc.dasa.ncsu.edu/tutoring-and-mentoring/drop-in-tutoring/>

3.2. Students with disabilities. Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Disability Resource Office at Holmes Hall, Suite 304, 2751 Cates Avenue, Campus Box 7509, 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see <http://policies.ncsu.edu/regulation/reg-02-20-01>.

3.3. Code of Student Conduct. The NC State Code of Student Conduct will be upheld, and documentation will be submitted to the Office of Student Conduct for students who violate University regulations on academic integrity. *Sanctioning for academic dishonesty could include a zero score on the assignment, quiz, or test in question, a zero in the course, academic probation, or suspension.* By submitting any test or assignment, you indicate that "I have neither given nor received unauthorized aid on this test or assignment." See <http://policies.ncsu.edu/policy/pol-11-35-01> for a detailed explanation of academic honesty. Violations of academic integrity will be handled in accordance with the Student Discipline Procedures: <https://policies.ncsu.edu/regulation/reg-11-35-02>.

3.4. Electronically-hosted Course Components. Please be advised this course is being recorded for current and potential future educational purposes. By your continued participation in this recorded course, you are providing your permission to be recorded.

Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online forum discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

This course will use digitally-hosted course components such as Moodle, Zoom, Mediasite, G Suite tools, and proctoring software.

3.5. Non-Discrimination Policy. NC State provides equal opportunity and affirmative action efforts, and prohibits all forms of unlawful discrimination, harassment, and retaliation that are based upon a person's race, color, religion, sex, national origin, age, disability, gender identity, genetic information, sexual orientation, or veteran status. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at <http://policies.ncsu.edu/policy/pol-04-25-05>. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity.

Students are responsible for reviewing the NC State University Policies, Rules, and Regulations which pertain to their course rights and responsibilities, including those referenced both below and above in this syllabus: <https://policies.ncsu.edu/policy/pol-04-25-05> with additional references at <https://oied.ncsu.edu/divweb/policies/> and Code of Student Conduct <https://policies.ncsu.edu/policy/pol-11-35-01>.

3.6. Diversity and Inclusivity.

- Diversity and inclusivity are important to the success of our students at NC State. Everyone who comes to NC State enriches us through their varied perspectives, knowledge, and backgrounds. Our classroom is one in which every student is respected and feels heard.
- In an effort to affirm and respect the identities of transgender students in the classroom and beyond, please contact me if you wish to be referred to using a name and/or pronouns other than those listed in the student directory.

3.7. Supporting Fellow Students in Distress. As members of the NC State Wolfpack community, we each share a personal responsibility to express concern for one another and to ensure that this classroom (as well as the campus as a whole) remains a healthy and safe environment for learning. Occasionally, you may come across a classmate whose personal behavior concerns or worries you, either for your classmate's well-being, for your well-being or for the well-being of others. When this is the case, I would encourage you to report the behavior on the link located on NC State's Students of Concern website <https://prevention.dasa.ncsu.edu/nc-state-cares/about/>.

Additional off-campus resources available 24 hours / 7 days a week include:

- National Suicide Hotline: 1.800.273.TALK (8255)
- Hopeline (confidential local hotline): 919.231.4525 or 1.877.235.4525

4. COVID-19 PANDEMIC

Due to the COVID-19 pandemic, public health measures continue to be implemented across campus. Students should stay current with these practices and expectations through the Protect the Pack website <https://www.ncsu.edu/coronavirus/>. The sections below provide expectations and conduct related to COVID-19 issues.

4.1. Health and Participation in Class. We are most concerned about your health and the health of your classmates and instructors/TAs.

- If you test positive for COVID-19, or are told by a healthcare provider that you are presumed positive for the virus, you should not attend any hybrid or face-to-face (F2F) classes and work with your instructor on any adjustments necessary; also follow other university guidelines, including self reporting: <https://healthypack.dasa.ncsu.edu/coronavirus/>. Self-reporting is not only to help provide support to you, but also to assist in contact tracing for containing the spread of the virus.
- If you feel unwell, even if you have not been knowingly exposed to COVID-19, please do not come to a F2F class or activity.
- If you are in quarantine, have been notified that you may have been exposed to COVID-19, or have a personal or family situation related to COVID-19 that prevents you from attending this course in person (or synchronously), please connect with your instructor to make alternative plans, as necessary.
- If you need to make a request for an academic consideration related to COVID-19, such as a discussion about possible options for remote learning, please talk with your instructor.

4.2. Health and Well-Being Resources. These are difficult times, and academic and personal stress are natural results. Everyone is encouraged to take care of themselves (<https://counseling.dasa.ncsu.edu/resources/self-help-resources/self-care/>) and their peers. If you need additional support, there are many resources on campus to help you:

- NCSU Counseling Center: <https://counseling.dasa.ncsu.edu/>
- Student Health Center: <https://healthypack.dasa.ncsu.edu/>
- If the personal behavior of a classmate concerns or worries you, either for the classmate's well-being or yours, we encourage you to report this behavior to the NC State CARES team: https://cm.maxient.com/reportingform.php?NCStateUniv&layout_id=2
- If you or someone you know are experiencing food, housing, or financial insecurity, please see the Pack Essentials Program: <https://dasa.ncsu.edu/support-and-advocacy/pack-essentials/>

4.3. Community Standards Related to COVID-19. We are all responsible for protecting ourselves and our community. Please see the community standards (which have been updated for 2021) at <https://www.ncsu.edu/coronavirus/community-standards> and University regulations regarding Personal Safety Requirements Related to COVID-19 at <https://policies.ncsu.edu/rule/rul-04-21-01/>

4.4. Course Expectations Related to COVID-19.

- Face Coverings: All members of the NC State academic community are expected to follow all university policies and guidelines, including the Personal Safety Rule (<https://policies.ncsu.edu/rule/rul-04-21-01/>) and community standards (<https://www.ncsu.edu/coronavirus/community-standards/>), for the use of face coverings. Face coverings are required in instructional spaces. Face coverings should be worn to cover the nose and mouth and be close fitting to the face with minimal gaps on the sides.
- Course Attendance: NC State attendance policies can be found at: <https://policies.ncsu.edu/regulation/reg-02-20-03-attendance-regulations/>. If you are quarantined or otherwise need to miss a synchronous class meeting because you have been advised that you may have been exposed to COVID-19, you should not be penalized regarding attendance or class participation. However, you will be expected to develop a plan to keep up with your coursework during any such absences. If you become ill with COVID-19, you should follow the steps outlined in the health and participation section above. COVID 19-related absences will be considered excused; documentation need only involve communication with your instructor.
- Technology Requirements: This course may require particular technologies to complete coursework. NC State's Online and Distance Education provides additional technology requirements and recommendations for computer hardware at <https://online-distance.ncsu.edu/get-started/technology-requirements/>. *If you need access to additional technological support, please see the NC State Libraries Technology Lending program* at <https://www.lib.ncsu.edu/devices>.

<u>SINCE THIS COURSE USES...</u>	<u>YOU WILL NEED...</u>
Moodle	Computer and reliable Internet access
G Suite tools	Computer and reliable Internet access
Zoom	Computer and reliable Internet access with adequate bandwidth; web camera, headphones, microphone
Mediasite recordings	Computer and reliable Internet access with adequate bandwidth
Proctoring software	Computer with specific platforms/operating system; high-bandwidth Internet access; web camera, headphones, microphone

For more information about Technology Requirements, including proctoring software such as Respondus LockDown Browser, Respondus Monitor, Proctorio), please see <https://docs.google.com/document/d/1Bfrka-Y4qm3WouAG0nCm0YBAytkTjQjvEBErBkNDgc/>

4.5. Course Changes Related to COVID-19.

- **Two policies, enhanced S/U Grading Option and Late Drop, put in place at the beginning of the COVID-19 pandemic have been discontinued.**
- In some cases, an option may be to request an “incomplete” in the course. If you are experiencing difficult or extenuating circumstances, you should discuss possible options with your instructor and your academic advisor.

4.6. Other Important Resources.

- Keep Learning: <https://dasa.ncsu.edu/academics/keep-learning/>
- Protect the Pack Frequently Asked Questions: <https://www.ncsu.edu/coronavirus/frequently-asked-questions/>
- NC State Protect the Pack Resources for Students: <https://www.ncsu.edu/coronavirus/students-families/>
- NC State Keep Learning, tips for students opting to take courses remotely: <https://dasa.ncsu.edu/academics/keep-learning/>
- Introduction to Zoom for students: <https://youtu.be/5LbPzzPbYEW>
- Learning with Moodle, a student’s guide to using Moodle: <https://moodle-projects.wolfware.ncsu.edu/course/view.php?id=226>
- NC State Libraries Technology Lending Program: <https://www.lib.ncsu.edu/devices>

5. TENTATIVE SCHEDULE

Our tentative class schedule represents a flexible agreement. All course materials are expected to be completed in 16 Learning Days from the beginning of the semester. The schedule (included in the table below and on our Moodle page) outlines the modules we will cover and the order we will cover them.

The pace of the class depends on student mastery and interests. Thus, minor changes to the syllabus can occur if we need to slow down or speed up the pace of instruction. As the semester progresses, modifications to the course syllabus will be available on the course Moodle page.

Week	Day	Date	Learning Day
1	Mon	Aug 16	Day 1
	Tues	Aug 17	
	Wed	Aug 18	Day 2
	Thurs	Aug 19	
	Fri	Aug 20	Day 3
2	Mon	Aug 23	Day 4
	Tues	Aug 24	
	Wed	Aug 25	Day 5
	Thurs	Aug 26	
	Fri	Aug 27	Day 6
3	Mon	Aug 30	
	Tues	Aug 31	
	Wed	Sep 1	Test #1 Option 1 4:00pm - 5:00pm
	Thurs	Sep 2	Test #1 Option 2 4:00pm - 5:00pm
	Fri	Sep 3	Day 7
4	Mon	Sep 6	Labor Day
	Tues	Sep 7	
	Wed	Sep 8	Day 8
	Thurs	Sep 9	
	Fri	Sep 10	Day 9
Week	Day	Date	Learning Day
5	Mon	Sep 13	Day 10
	Tues	Sep 14	
	Wed	Sep 15	Day 11
	Thurs	Sep 16	
	Fri	Sep 17	
6	Mon	Sep 20	Test #2 Option 1 4:00pm - 5:00pm
	Tues	Sep 21	Test #2 Option 2 4:00pm - 5:00pm
	Wed	Sep 22	Day 12
	Thurs	Sep 23	
	Fri	Sep 24	Day 13
7	Mon	Sep 27	Day 14
	Tues	Sep 28	
	Wed	Sep 29	Day 15
	Thurs	Sep 30	
	Fri	Oct 1	Day 16
8	Mon	Oct 4	Fall Break
	Tues	Oct 5	Fall Break
	Wed	Oct 6	Test #3 Option 1 4:00pm - 5:00pm
	Thurs	Oct 7	Test #3 Option 2 4:00pm - 5:00pm

THIS SYLLABUS WAS UPDATED ON AUGUST 23, 2021