Pre-Calculus and Introductory Differential Calculus
(first semester of year-long Calculus)
Course Information and Policies
all times shown are in Eastern time zone

Description
MATH 1040 and MATH 1070 constitute the year-long calculus sequence. The sequence introduces the theory and practice of the calculus of one variable to model phenomena in engineering and science. MATH 1040 covers relevant pre-calculus and algebra review, limits, continuity, and introduction to differential calculus. The combination of MATH 1040 and MATH 1070 covers the same calculus material as MATH 1060. MATH 1040 is 4 credit hours and is graded on a pass/fail scale. The MATH 1040 final course average will be incorporated into the MATH 1070 final course average. MATH 1070 is 4 credit hours and is graded on an A, B, C, D, F scale.

Prerequisites
• 1040 Prerequisites:
Demonstrated proficiency in college algebra, either by
1) a score of 640 or higher on the math portion of SAT, **OR**
2) a score of 27 or higher on the math portion of ACT, **OR**
3) a score of 65 or higher on the Clemson Math Placement Test, CMPT, **OR**
4) credit for any MATH course, obtained either at Clemson University, through transfer, or AP or IB credit

• MATH 1040 is not open to students who have received credit for MATH 1060.
• 1060 Prerequisite:
  SATmath score $\geq$ 680 OR ACTmath score $\geq$ 29 OR CMPT score $\geq$ 80.
 • Students who score a 65 or higher on the CMPT and who do not meet prerequisites for MATH 1060 should remain in MATH 1040.

Learning Outcomes
Upon completing this course, it is expected that a student will be able to do the following:
1. **Pre-Calculus**: Demonstrate mastery of algebra including properties of numbers, polynomials, rational expressions, and radicals. Demonstrate mastery of functions, graphs, and transformations as well as solving, factoring, and simplifying linear, quadratic, and rational functions equations.

2. **Trigonometry:** Demonstrate mastery of the unit circle and right triangle trigonometry, trigonometric functions, trigonometric identities and equations.

3. **Limits and Continuity:** Explain the concept of a limit, apply the $\varepsilon - \delta$ definition of a limit, evaluate limits involving elementary functions, including indeterminate forms, and apply limits to determine the continuity of a function at a point.

4. **Derivative:** State and apply the limit definition of the derivative, recognize when a function is not differentiable, and use derivative theorems to calculate derivatives.

5. **Implicit Functions:** Distinguish between implicitly and explicitly defined functions and calculate derivatives for implicit functions.

General Education Competency
This course meets the Mathematical general education competency.

B. Mathematics - Demonstrate mathematical literacy through solving problems, communicating concepts, reasoning mathematically, and applying mathematical or statistical methods using multiple representations where applicable.

H. Critical Thinking - Demonstrate the ability to assemble information relevant to a significant, complex issue, evaluate the quality and utility of the information, and use the outcome of the analysis to reach a logical conclusion about the issue.

Pre-Calculus and Introductory Differential Calculus
(first semester of year-long Calculus)
Topical Outline and Objective Skills
Students should refer to the tentative daily schedule course calendar at the MATH 1040 course website for a listing of sections covered in MATH 1040, and the days when they will be covered. Also posted is a course objectives document, which gives a detailed listing of the skills that students are expected to master. Note: *Students should expect test questions which require a synthesis of objective skills.*

Required Materials
Text:
Calculus. Early Transcendentals by Briggs, Cochran, Gillett, Schulz, 3rd Edition, Pearson, 2019 – required (electronic book through MyLab Math is acceptable.)

Just-in-Time Algebra & Trigonometry for Early Transcendentals Calculus by Mueller, Brent, 4th Edition, Pearson, 2013 – required (paperback)

MyLabMath:
Note: Two electronic version of Brigg's Calculus is also accessible through MyLabMath. The interactive version contains worthwhile interactive figures. The pdf version is best for looking up specific exercises. Note: If you have used MyLabMath *with this edition of the text* before, your access should still be valid. If you have not used MyLabMath *with this edition of the text*, access can be purchased at the bookstore on campus or on-line through Pearson.

Canvas:
 www.clemson.edu/canvas Canvas provides the organizational structure of this course - learning resources, assignments, grades, virtual class meeting links, announcements, etc.

It is also important to regularly check for e-mail communication from your instructor.

Various required technology:
The following materials are required for successful participation in the course:
- Adobe Reader.
- Computer with speakers or headphones. (This course includes audio components.)
- Web camera and microphone (integrated with laptop is sufficient)
- Printer to print out daily learning activity documents, etc. or a tablet to write on pdf documents.
- The ability to scan multiple pages into a SINGLE pdf document. You may use a scanner or an alternate technology such as the CamScanner App on your smart phone.
  - (Need to make a SINGLE pdf document - NOT one document per page)
- Various internet group participation, testing, and grading apps and websites, many through Canvas (for example: Zoom, GoBoard, VoiceThread, LockDown Browser, Respondus Monitor and Gradescope)

Comments on other materials:
Calculator -- Students will be expected to use either laptop computers or a basic scientific graphing calculator or a graphing app for homework and classroom exercises. **Students will not be permitted to use calculators, computers, smart phones, or any other technology on any unit test or the Final Exam except for the apps/programs needed to administer the test/exam.**

Informational Websites
http://mthsc.clemson.edu/ug_course_pages/MATH1040 -- General MATH 1040 site which includes this syllabus, a daily schedule including instructional objectives, announcements, and other useful information.

http://catalog.clemson.edu -- Detailed information about Clemson University undergraduate class regulations including academic integrity, attendance policy, mid-term grades, final examinations, and posting of grades.

Pre-Calculus and Introductory Differential Calculus
(first semester of year-long Calculus)

Additional Requirement for Students not in Eastern Time Zone
The student must be able to attend class meetings and testing times (virtually) at scheduled Eastern time and meet other assignment deadlines in Eastern time.

Additional Requirement for Students Studying Abroad
Students wishing to take this course while out of the US must receive special permission from the instructor. The student must be able to attend class meetings and testing times (virtually) at scheduled Eastern time and meet other assignment deadlines in Eastern time. Or special testing circumstances could be considered with a proctor but instructor/proctor communication must be in English and there must be at least one instructor/proctor video conference.

Academic Dishonesty
Students are expected to adhere to the following official Clemson academic integrity statement. You may not obtain unauthorized help on any examination. You may get and give help with your classwork and homework (as allowed by your instructor), but do not submit another student's work or work that is not your own, i.e. copying from an internet resource.
Giving someone else access to an academic website that requires your password (like Canvas or MyLab Math) violates the code of student conduct computer use policy.

> "As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a "high seminary of learning"; Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form."

The penalties for academic integrity violations can be severe and any student found to be "in violation" will be subject to penalties as outlined in the Undergraduate Academic Integrity Policy.

Accessibility
Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the professor know, and make an appointment to meet with a staff member in Student Accessibility Services as soon as possible. You can make an appointment by calling 864-656-6848 or by emailing studentaccess@lists.clemson.edu. Students who receive Academic Access Letters are strongly encouraged to request, obtain, and present these to their instructor as early in the semester as possible so that accommodations can be made in a timely manner. It is the student's responsibility to follow this process each semester. You can access further information here: http://www.clemson.edu/campus-life/campus-services/sds/
If you have a letter stating specific testing accommodations to which you are entitled, please turn in a copy to your instructor at least **one week prior to the test** or final exam. Your instructor will keep you informed as to how your accommodations will be handled. Please be aware that accommodations are not retroactive and new Academic Access Letters must be presented each semester.

Copyright Statement
Some of the materials in this course are possibly copyrighted. They are intended for use only by students registered and enrolled in this course and only for instructional activities associated with and for the duration of the course. They may not be retained in another medium or disseminated further. They are provided in compliance with the provisions of the Teach Act. Refer to the Use of Copyrighted Materials and "Fair Use Guidelines" policy on the Clemson University website for additional information: http://clemson.libguides.com/copyright Clemson students, faculty, and staff are expected to comply fully with institutional copyright policy as well as all other copyright laws.

Pre-Calculus and Introductory Differential Calculus
(first semester of year-long Calculus)

COVID-19 related information for in-person classes:

While on campus, face coverings are required in all buildings and classrooms. Face coverings are also required in outdoor spaces where physical distance cannot be guaranteed. Please be familiar with the additional information on the Healthy Clemson website, such as the use of wipes for in- person classes. If an instructor does not have a face covering or refuses to wear an approved face covering without valid accommodation, students should notify the department chair. If a student does not have a face covering or refuses to wear an approved face covering without valid accommodation, the instructor will ask the student to leave the academic space and may report the student's actions to the Office of Community & Ethical Standards as a violation of the Student Code of Conduct. If the student's actions disrupt the class to the extent that an immediate response is needed, the instructor may call the Clemson University Police Department at 656- 2222.

CU Title IX

Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran's status, genetic information or protected activity (e.g., opposition to prohibited discrimination or participation in any complaint process, etc.) in employment, educational programs and activities, admissions, and financial aid. Thus includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. This policy is located at http://www.clemson.edu/campus-life/campus-services/access/title-ix/ . Ms. Alesia Smith is the Clemson University Title IX Coordinator and Executive Director of Equity Compliance. Her office is located at 110 Holtzendorff Hall, (864) 656-3181 (voice) or (864) 565-0800 (TDD).

Safety

Clemson University is committed to providing a safe campus environment for students, faculty, staff, and visitors. As members of the community, we encourage you to take the following actions to be better prepared in case of an emergency:

1. Ensure you are signed up for emergency alerts (https://www.getrave.com/login/clemson),
2. Download the Rave Guardian app to your phone (https://www.clemson.edu/cusafety/cupd/rave-guardian/)
3. Learn what you can do to prepare yourself in the event of an active threat (http://www.clemson.edu/cusafety/EmergencyManagement/)

Pre-Calculus and Introductory Differential Calculus
(first semester of year-long Calculus)

Course Structure
All sections of MATH 1040/1070 in Fall 2020 will be conducted as flipped classrooms. Students will listen to the lecture videos and take notes prior to attending the class meeting time.

Class meeting times will consist of a variety of learning activities, many of which will be group activities. Class meetings will be conducted through Zoom and/or in the classroom based on the overall University teaching modality and social distancing requirements.
Class attendance is expected each class day either virtually (likely through Zoom) or in the classroom. Students will be informed later in the semester as to when they may attend class in the classroom.
It is strongly recommended that students attending class virtually do so with their video on – it is much easier to discuss and learn math together when you can see each other.

In either class meeting format, there will be a daily Lecture Check assignment to demonstrate that the student listened to the lecture before class meeting time. If you are unable to attend class both virtually or in the classroom (illness, conflicts, internet issues, technology issues, etc.) please contact your instructor as soon as possible to determine together if you are eligible for an excused Lecture Check assignment. If you are attending class virtually and your connection is lost, you are expected to reconnect as soon as possible. If the instructor's connection is lost, students are expected to work together until the end of the class meeting time even if the instructor is not able to reconnect.

Students will be allowed to attend class virtually the entire semester if that is their preference.

Paper will not be exchanged, but students are welcome to print and use their own paper. Students are also welcome to write daily assignments with a tablet if that is their preference. All assignments will be submitted virtually.

All instructor office hours will be virtual. Be sure to find your instructor's virtual office hours listed in their supplement to the course policies.

It is the student's responsibility to master the objectives of the course. Resources available to you include the instructor, class teaching assistants (potentially), Peer Assistance Learning (PAL), your fellow students, the course Canvas site, the MATH 1040 web site, the library, on-line course resources, and other Academic Success Center resources such as tutoring and workshops.

Dedicated student effort and study is needed to master the learning objectives of the course. Students are expected to actively participate in their own learning by regularly attending and participating in class (virtually and/or in person as appropriate), reading the textbook, working homework, practicing course objective skills, and seeking assistance in a timely manner when necessary.

Attendance
You are expected to be regular and punctual in your class attendance (virtually and/or in the classroom). You are responsible for all notes, assignments, and announcements made during class or in Canvas. You must provide your instructor with proper documentation for university sanctioned absences. If the instructor does not arrive in the classroom virtual or physical space within 15 minutes after the scheduled start time, class is dismissed for the day.
A student with an excessive number of absences may be withdrawn at the discretion of the course instructor. For the Fall 2020 semester, "excessive absences" may be applicable to students that do not engage in class activity (in person and/or online).
Any assignment(s) due at the time of a class cancellation due to inclement weather (or any university cancellation) will be due at the next class meeting unless contact by your instructor via e-mail or Canvas. In the event of a university cancellation during a scheduled test or exam, your instruction will notify you as to the date of the rescheduled exam.

Pre-Calculus and Introductory Differential Calculus
(first semester of year-long Calculus)

Grading
The final course grade will be determined by the scores on

- 3 Common Tests (Dates: likely 9/16, 10/14, and 11/18) weighted 17% each (51% total)
- Daily Work (average of lecture checks, L&LAs, and test review checks) weighted 10%
- Section Work (average of paper HW, Zoom sessions, discussions, surveys, quizzes, any other "in-class" work, etc) weighted 6%
- Department Homework (MyLab Math problems) weighted 10%
- Academic Success Center attendance weighted 4%
- Common Final Exam (Date: 12/7) weighted 19%

The Final Exam is mandatory and comprehensive (no exemptions). No rescheduling of the final exam will be permitted.

In order for a student's course average to be computed, a student must have either:
(a) a final exam score of 64% or higher, or
(b) a weighted average test and final exam score of 64% or higher where the weighted average is computed as
$(17*(T1 + T2 + T3 + FE - min(T1,T2,T3,FE)) + 19*FE) / (3*17 + 19)$
In the formula; T1, T2, and T3 are the percentage scores on tests 1, 2, and 3 respectively; FE is the percentage score on the final exam.

Note: The previous formula has the effect of replacing the lowest test score with the final exam score if this improves the weighted average.

If neither of the conditions (a) and (b) above are met, the final course grade is NP and the following computation of course average is irrelevant to the final grade.

If either of the conditions (a) and (b) above are met, the final course average is computed as
$(10*DW + 6*SW + 10*HW + 4*ASC + 17*(T1 + T2 + T3 + FE - min(T1,T2,T3,FE)) + 19*FE) / (10 + 6 + 10 + 4 + 3*17 + 19)$ where DW is the daily work percentage score, SW is the section work percentage score, HW is the percentage score on the department homework, ASC is the score from Academic Success Center attendance, and the other variables are as previously defined. Again, the final exam score is substituted for a single lower test score if possible.

If either of the conditions (a) and (b) above are met, the final letter grade is determined from the course average according to the grading scale:
-70% or higher: P; otherwise,
-less than 70%: NP.

Pre-Calculus and Introductory Differential Calculus
(first semester of year-long Calculus)

Academic Success Center attendance

The Academic Success Center attendance average will be 4% of the course grade. 0.5% will be earned for one attendance per service per week (up to four attendances) to a PAL sessions or ASC tutoring before Oct 2nd   Then 0.5% will be earned for one attendance per service per week (up to four attendances) to a PAL session or ASC tutoring after Oct 2nd. These ASC services are conducted online and/or in a classroom (more information to be provided later). The schedules and more information is available at the ASC website (*https://www.clemson.edu/asc/)* using the orange "View Schedule" buttons– you must log in to your g.clemson account to see the schedules. Credit for participating in the ASC PAL and Tutoring services is offered to provide multiple format options and schedule flexibility while encouraging all students in this course to develop habits for academic success. Attending often during the semester helps build success habits.

What counts for credit?
- Up to four attendances at any service before Oct 2nd (PAL, ASC tutoring)
- Up to four attendances at any service after Oct 2nd
- With the restriction of one participation credit per service per week
- Active participation for the entire PAL session for MATH 1040
- Active participation for the full 30 minute ASC tutoring session

The peer leaders facilitating each session have the right to not credit your attendance if you are not actively engaged

More than eight attendances throughout the semester or more than one attendance to a service in a week will not earn "extra credit," but are not discouraged. Students should attend ASC services as much as they desire.

Two opportunities are available to give you format and schedule options:
1. PAL leaders and ASC tutors both have content knowledge related to MATH 1040. PAL leaders have a direct connection to the instructor so they are more aware of specific approaches used in the course.
2. Tutors are able to work with you to understand the questions you bring to your tutoring sessions.

Students who have verifiable time conflicts with all of the ASC attendance options should communicate with their instructor no later than September 9, 2020 to discuss an alternate assignment.

Participating in ASC learning support is a course requirement to enrich your success in this course.   Plan ahead to schedule time to try out each resource and continue to use the resource that fits your learning style best. Use ASC attendance to improve your learning throughout a unit – not just attending the days before tests. Regular, consistent participation in these programs will sustain your learning throughout the course.

Students are responsible for making sure they fulfill and verify the requirements of ASC to be counted as present for ASC activities. It is recommended that students keep track of when, where, and leader for ASC attendance in case of discrepancies with ASC attendance records.

Peer-Assisted Learning (PAL)

Peer-Assisted Learning (PAL) sessions are available as a complement to the course sessions. PAL leaders have taken this course in the past and can share tips and tricks for success. The PAL leaders will also be working closely with MATH 1040 instructors to ensure students are equipped with the right tools to support learning. Sessions are a great way to stay current with course content and learn from other students' understanding. You can take advantage of this valuable resource by clicking on the Zoom session hyperlinked on the PAL schedule located under "View PAL Schedule" on the ASC website (*https://www.clemson.edu/asc/)*. Your leader will also be sending regular emails with information about their upcoming sessions.

Tutoring

This course is supported by the Academic Success Center tutoring program. Tutoring will be offered online via 1:1 appointments. You can schedule an appointment with any tutor that supports Math 1040 by clicking

on the link embedded in the schedule. This will allow you to complete an Appointment Information Form, providing your tutor with your specific questions and desired topics for discussion. Once your form is completed, you will gain access to our appointment calendar and can schedule a tutor session for a day and time that works for you. The ASC tutors have completed and done well in this course, and they understand the concepts well enough to help you work through questions you have. While tutors will not complete/correct homework for you or help you on take-home tests or quizzes, they will help you understand and reinforce concepts that you are learning in your class. For more information visit https://www.clemson.edu/asc/courses/tutoring/index.html.

Tests

The three unit exams (likely 9/16, 10/14, and 11/18) and final exam (12/7). Exams will be proctored virtually (through Zoom and/or using Lockdown Browser and Respondus Monitor). The regular semester tests will take place in the evening at 7:30 PM on designated Wednesdays (likely 9/16, 10/14, and 11/18). Ninety minutes will be allotted for each test and 150 minutes will be allotted for the Final Exam with up to 15 extra minutes to scan and submit your test through Canvas and Gradescope.

You will be required to have your video and microphone on during the testing. You will be asked to show your CU ID at the beginning of the testing session. You may be asked to show any papers you have in your testing area. You may be asked to pan around your testing area before testing begins. You will need to ensure that your eyes and hands show fully in the video during the entire testing time. You will be required to stay on camera during the scan & submit phase of your testing.

Students will not be permitted to use calculators, computers, smart phones, or any other technology on any unit test or the Final Exam except for the apps/programs needed to administer the test/exam.
The use of a textbook and/or notes is prohibited on all MATH 1040 tests and Final Exam.

An absence from a test or exam will result in a grade of zero. If you miss a unit test or the final exam due to an emergency that would qualify as an excused absence, **you must inform your instructor within 24 hours of the scheduled test or exam.** In the case of an excused absence for a unit test, the final exam score will be used in place of the missing test score.

Students will have 1 week from the date graded test files are returned to submit the test for re-grading or to correct a clerical error. After this one-week period, no grading appeals will be considered.

The final exam is comprehensive – it will be given Monday, 12/7 beginning at 11:30 am and will be allotted 2.5 hours.

Daily Work

The daily work portion of the grade will include almost daily lecture checks, graded Lecture & Learning Activities, and test review check grades. The grading method (accuracy/effort) will vary.   If you are unable to attend class meeting times (illness, conflicts, internet issues, technology issues, etc.) please contact your instructor as soon as possible to determine together if you are eligible for an excused absence. Some amount of low scores may be dropped as determined by the instructor.

Section Work

The Section work portion of the grade may include (but not limited to) other in-class activities, traditional individual quizzes, solving problems to be turned in, additional homework problems, projects, reading quizzes, or worksheets. These assignments will be determined by your instructor. Some amount of low scores may be dropped as determined by the instructor.

Department Work

Each student will work homework online through the web application MyLab Math (MLM). Your instructor will provide you with information about registering with MyLab Math.

MATH 1040   Fall 2020
Pre-Calculus and Introductory Differential Calculus
(first semester of year-long Calculus)

Previous Exams

A collection of previous exams is provided on the MATH 1040 course website as a courtesy to students. These exams are intended to aid you in your study and to give you a feel for the format of an exam; however, these exams are not to be interpreted as "practice exams." Students should have no expectation that the questions on a future exam will be similar to questions on a previous exam. Each semester a new exam is written and reviewed by the instructors of the course.

Midterm Grade

On or before October 9th, your instructor will give you a midterm grade. The midterm grade can be calculated as follows. Please note that your midterm is only an estimate of your grade. Your final course average could differ significantly from your midterm.
Midterm = (51*T1+10*DW+6*SW+10*HW+4*ASC)/81

Final Exam

Monday, December 7, 2020; 11:30 am - 2:00 pm

Course Coordinator

Donna Simms, dsimms@clemson.edu
Martin Hall O-311, 656-5210, but please realize all office hours are virtual so e-mail is the best contact