

MATH 1070-E01 College Algebra for Business
Department of Mathematical and Statistical Sciences
University of Colorado Denver
COURSE SYLLABUS

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| Term: | Spring 2018 |
| Instructor: | Lance Lana |
| Class Meeting Info: | Online Course – There are no in class meetings. |
| Instructors Office: | SC-4116 (4th floor Student Commons Bldg.) |
| Office Hours & Help Sessions: | I have open office hours and help sessions in my office (SC-4116) during the following times. If you are on campus then feel free to drop in with your questions! Note: These times are subject to change. See the course web page for the most current times. Tuesdays & Thursdays: 10:00 – 10:45 AM and 1:00 – 2:45 PM Wednesdays: 10:00 - 11:45 am Other times are available by appointment - call or e-mail first! |
| Email: | Lance.Lana@ucdenver.edu Note: e-mail is the best way to reach me. |
| Web Page | https://ucdenver.instructure.com/ |
| Math Dept. Office | Student Commons Building (4th floor) Phone: (303) 315-1700 |
| Course Captain | Lance Lana: Office: SC-4116 Email: Lance.Lana@ucdenver.edu |
| Dept Associate Chair | Prof. Steve Billups: Office SC-4309 Phone: (303) 315-1735; email: stephen.billups@ucdenver.edu |

Description: This is a mathematics course that was designed to fulfill the CORE University requirements. Functions, graphs, scatter plots, curve-fitting, polynomial and rational functions, exponential and logarithmic functions and selected other topics. Graphics calculator required. Acceptable calculators include the TI-83, TI-84 and TI-nSpire. *Note: No co-credit with MATH 1110 or MATH 1130. Semester Hours: 3*

Prerequisites: It is important that you have a good understanding of the mathematical concepts found in an Intermediate Algebra course taught at a college or a high school Algebra II or Precalculus course. If you don't already have this understanding then you should not be taking Math 1070. To save yourself time and to save your GPA please enroll in "MAT 055 – Algebraic Literacy" at any Colorado Community College. After you have successfully completed Algebraic Literacy you should come back and take Math 1070 at UCD. Note: as a UCD student you can directly enroll through the UCD registration system in classes taught on campus at the Community College of Denver (CCD). You do not need to apply or be accepted at CCD. Please see your counselor for assistance.

Course Goals and Learning Objectives: As a CORE course in mathematics, it is expected that by the end of the semester all students will be able to meet certain CORE learning objectives. These objectives will be demonstrated and assessed within specific learning objectives for this course. A detailed list of the learning objectives can be found at the end of this syllabus. You are encouraged to reference these objectives as a guide to your studies. In particular you may find them useful when studying for the exams.

Required Materials:

Text and MyMathLab: *College Algebra in Context* (5th Edition) by Harshbarger & Yocco. A hard copy of the text is not absolutely required since an eBook comes with the purchase of MyMathLab which we will use for the online homework, quizzes and exams. If you haven't taken Math 1070 before then there are two options.

Option 1 - Textbook (Hard Cover or 3-Hole Punched) plus MyMathLab Access Code (includes eBook)

Option 2 – Just the MyMathLab Access Code (includes eBook).

Option 1 is probably best since you will have easier access to the text. However if you don't mind using the eBook instead of a hard copy of the text then MyMathLab is all that you absolutely need. You can purchase MyMathLab online by going to <http://pearsonmylabandmastering.com>. Under REGISTER click on STUDENT. You will need your university email address (which you check regularly), the COURSE ID which is **lana62395** (note the first character is a lower case L, not a one) and either a student access code or a valid credit card. If you purchase MyMathLab online with a credit card it will cost you approximately \$110. If you purchase the textbook then we recommend that you purchase it **new**, bundled with the student access code that gives you access to the MyMathLab software. Note that a used textbook will probably not come with an unused access code. Each access code can only be used once!!! If you purchase a used text then you will probably still need to purchase MyMathLab online.

***** Note to students who are retaking this course:** If you are retaking Math 1070 and you took the course last semester with the same textbook then you do not need to pay for MyMathLab again! To retake a course:

1. Go to <http://pearsonmylabandmastering.com>
2. Select **Student** in the Register section.
3. Enter the COURSE ID: **lana62395** then select **Continue**.
4. Enter the username and password used in the previous course, then select **Sign In**.
5. If the new course is based on the same material, you will receive confirmation and be able to enter the course.

Graphics Calculator: You will also need a graphing calculator for this course. This calculator will be used on the homework, and on parts of each exam. The recommended calculator is one of the TI-84 Calculators. The TI-83 is older but is also fine. The TI-89 or the TI-nSpire are also sufficient calculators but the syntax for these calculators will not be supported. The TI-85, TI-82, and the TI-81 are not sufficient since they are outdated and do not handle data collection and data analysis.

How you will be evaluated:

Tests: There will be three exams and a comprehensive uniform common final exam. You must take each exam in a proctored setting (see list of approved proctors below).

Exam #1: Monday February 12 – Sunday February 18

Exam #2: Monday March 12 – Sunday March 18

Exam #3: Monday April 16 – Sunday April 22

Final Exam: Monday May 7 – Sunday May 13

Acceptable Proctors: Each examination you take in this course must be administered via a pre-approved proctor. There are several different options available for proctoring and you can choose which option works best for you.

Option 1: MERC Lab- (*Works well for students in the Denver area who can take the examination during normal business hours*).

The MERC Lab is located on campus in the North Classroom, room 4015. They provide free proctoring services to UCD students during their open proctoring hours. The MERC Lab Proctoring Hours vary based upon when their testing room is available. It is best to check directly with the MERC Lab (and look in the threaded discussions in our Canvas shell) on their availability for proctoring BEFORE you plan on taking the examination. I will also provide the best hours for MERC Lab proctoring when they make them available to me.

Option 2: Local Libraries/Testing Centers/Community Colleges or Universities (*Works well for students outside of the Denver metro region and those students who have difficulty making it to the MERC during regular proctoring hours*).

Many local libraries, testing centers, community colleges, local universities, etc. provide proctoring services free of charge or for a small fee. If you would like to use one of these options as your proctor please provide me by email with the name, phone number, email address and affiliation of your intended proctor at least one week ahead of time. (Please check with them first to ensure that they do provide a proctoring service).

Option 3: ProctorU (*Works well for students who have a busy schedule and want to take the exam at their leisure*).

ProctorU is a web-based proctoring service that provides proctoring for our University (cost is approximately \$30 per exam if you choose this option). This service allows you to sign up for the examination during any hour of the day during the examination week (you could take the exam from 2:00-4:00 in the morning if you like). This service requires the student to have a webcam and microphone during the examination in order to ensure the exam protocols are being followed. Advance reservations are required so you need to set up your ProctorU account and reserve a time to take an exam ahead of schedule!

MyMathLab Homework : MML Homework will be assigned over MyMathLab (CourseCompass) and will be automatically graded by the computer. With this software you have unlimited attempts at a problem so you have every possibility of attaining a 100% on each of these assignments! Late assignments will be accepted over MyMathLab up until the start of the exam which covers that material, but will accrue a 20% penalty if they are turned in late (this penalty will be automatically induced by the program if you work on the assignment after the deadlines but will only be taken on individual problems worked after the deadline has passed). Online assignments are due each Sunday by the end of the day (11:59 p.m.)

MML Homework Quizzes: The second portion of the assignment will be a MML quiz over a short set of problems from the week's homework assignment. This weekly quiz will give you an opportunity to work problems in the same online setting that you will be under for the exams. These quizzes are intended to help you gauge your understanding of the week's material and refresh where appropriate. You may take each quiz up to two different times. Hint: Successfully work all of the online homework before you take the quiz! The questions on the quizzes are similar to the online homework questions but the online help features are disabled on the quizzes. There will be approximately 11 quizzes throughout the semester and your *lowest score will be dropped*.

Threaded Discussions/Activities: Threaded discussions are online discussions that make an online course feel more like a classroom. There will be one to two different threaded discussion topics each week. These threaded discussions give you an opportunity to explore and discuss applications of the material we are studying and also ask and answer content questions from the current homework assignments.

Content Questions. These threaded discussions are located in each module and give you a place to ask and answer any questions you are having over the current material and/or homework assignment. Asking or answering questions is worth 5 points each. If your question is about how to solve one of the homework problems then include the full statement of the problem in your question. Don't expect others to go to MML and look up what the question is asking you to do. Also include the work that you have done so far. If you have done no work and can't get started then state this in your question. If you are answering another student's question then don't just give the solution. This is not appropriate. Instead, make a suggestion for what the student should try next.

Weekly Discussion about course videos. These threaded discussions are also located in each weekly module and are worth 5 points each. Videos will be posted for you to watch. You may review these videos or add to another student's review of a video. You could also find a different video or website that helps illustrate the same concept of interest and post a link to your video. It is not enough to just post a link to your video, you also should summarize the video and explain how it is different (better?) than the other videos.

Each of the weekly threaded discussion topics is worth five points.

To receive full credit, you must post at least twice each week. You may post more than twice but only your best two posts will count with a maximum weekly point total of 10 points per week. It is very important to realize early that you must be actively participating in the threaded discussions in order to receive full credit. Two simple one line posts that reflect little or no thought about the course material and/or questions asked will receive little or no credit. Plan accordingly, watch the videos and participate fully and often in the discussions in order to receive full credit. Your lowest weekly threaded discussion score will be dropped at the end of the semester.

Grade Summary: In-Class Exams: 45% (15% each)
 Final Exam: 25%
 MML Homework Assignments 10%
 Quizzes 10%
 Threaded Discussions 10%

Grading Scale: Your final grade will be determined by the percentage of these points you have actually received

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|-----------------|-----------------|-----------------|
| A 92.0 – 100% | A- 90.0 – 91.9% | |
| B+ 88.0 – 89.9% | B 82.0 – 87.9% | B- 80.0 – 81.9% |
| C+ 78.0 – 79.9% | C 70.0 – 77.9% | |
| D 55.0 – 69.9% | | |
| F below 60.0% | | |

Late Work and Exam Makeup Policy:

Successful performance in college courses is dependent upon regular student attendance and participation. It is the University’s expectation that students will participate in every class, independent of whether attendance is formally part of the course grade. The University recognizes there will be occasions when students must miss classes that contain examinations, graded assignments, projects, and general class participation. Excused absences are authorized by the University. Anticipated excused absences must be cleared with the instructor prior to the event, and religious observances must be declared at the beginning of the semester. An independent official should verify unanticipated or emergency excused absences. Examples of excused absences and the required documentation and verification are offered below:

| <u>Anticipated</u> | <u>Required Documentation</u> |
|-----------------------------------|---|
| Official university holiday | No verification required, calendar from Registrar |
| Official university function | University official authorizing the absence |
| Required court or jury appearance | Clerk of the Court |
| Required military obligation | Copy of orders, or commanding officer |
| Religious observances | Student initiated request |

| <u>Unanticipated or Emergency</u> | <u>Required Documentation</u> |
|-----------------------------------|---|
| Extraordinary illness or injury | Physician (student authorization may be required) |
| Death of family member | Copy of obituary, family relationship |
| Closed campus/inclement weather | No verification required |
| Open campus/inclement weather | Highway department closed road verification |
| Required employment travel | Immediate supervisor |

Makeup Tests: I expect you to take all of the tests. If an excused absence causes you to miss a test, we will deal with it in such a way that you are not penalized. We will discuss the details if this happens. If at all possible, please make arrangements with me beforehand. If you miss a test due to an unexcused absence, you will in all likelihood receive a zero on that test.

Uniform Final Exam: **The final exam must be taken the week of Monday May 8th.** Taking the final exam is mandatory. Having the final rescheduled is extremely rare and is not permitted for reasons such as a plane ticket that was purchased earlier or attendance at weddings. In all cases where a makeup is requested, you MUST MAKE ARRANGEMENTS BEFOREHAND if at all possible. Note that taking the final exam early is not possible.

Late Online Homework and Quizzes: Technical difficulties are always possible when working with computers so plan ahead and get your online homework and quizzes done early! I am very hesitant to give extensions on the online homework or quizzes. However, if an excused absence makes it impossible for you to complete an online homework assignment or quiz then extensions may be granted.

Unexcused Absences:

Student absences that do not meet the criteria for an excused absence are classified as unexcused. Faculty are under no obligation to allow students to make up, or to provide any grading adjustment for, a missed assignments as a result of an

unexcused absence. A student who believes a faculty member's attendance policies are inconsistent with University policies or unfair for the circumstances, should discuss the situation with the instructor.

Excessive Excused Absences:

The University recognizes that excessive excused absences will make it impossible to evaluate a student's performance in a class based on attendance and participation or in a class with multiple missed graded assignments. Under these circumstances, an administrative solution should be explored with the student to drop the course(s) before the end of the semester.

Frequently Asked Question: How much time should I be spending on my Math 1070 each week?

A "full-time job" is considered to be 40 hours per week and a "full-time student" is considered to have a schedule of 15 credit hours per week. If you subtract 15 hours of class time from the 40 hours, that leaves 25 hours of studying per week. $3/15 = 1/5$ of 25 hours is 5 hours of studying Math 1070, outside of class time per week. **Warning:** If your last math class was several years ago or if your prerequisite math skills are weak then you are not well prepared and you will need to spend considerably more time on this class in order to be successful!

CLAS Academic Dishonesty Policy: Students are required to know, understand, and comply with the CU Denver Academic Dishonesty Policy as detailed in the Catalog and on the CLAS website. Academic dishonesty consists of plagiarism, cheating, fabrication and falsification, multiple submission of the same work, misuse of academic materials, and complicity in academic dishonesty. If you are not familiar with the definitions of these offenses, go to

<http://www.ucdenver.edu/academics/colleges/CLAS/faculty-staff/policies/Pages/DefinitionofAcademicDishonesty.aspx>

This course assumes your knowledge of these policies and definitions. Failure to adhere to them can result in possible penalties ranging from failure of this course to dismissal from the University; so, be informed and be careful. If this is unclear to you, ask your professor.

Cheating: Examples of cheating include (but are not limited to): using unauthorized references (e.g. another individual, notes, texts...) during a quiz or exam, using a calculator on an exam where a calculator is not allowed, altering a graded quiz or exam and coming back to request more points, turning in duplicate homework assignments, and plagiarism. The penalty for cheating will depend on the evidence and the intent of the student.

At a minimum, the penalty for deliberate cheating on an exam will be a zero on the exam. A letter will also be sent to the department Chair and the CLAS associate Dean and it is likely that depending on the circumstances, cheating of this kind will result in a course grade of **F** as well as possible expulsion from the university. It isn't worth it, so don't do it!

Student Code of Conduct: As members of the University community, students are expected to uphold university standards, which include abiding by state civil and criminal laws and all University policies and standards of conduct. These standards are outlined in the student code of conduct which can be found at:

<http://www.ucdenver.edu/life/services/standards/Documents/CUDenver-CodeofConduct.pdf>

Complaints about the Course: Students who have complaints about the course or instructor should: 1) meet with the instructor face-to-face; 2) if not satisfied, meet with the Associate Chair of the math department/unit, Prof. Steve Billups; 3) if not satisfied, appeal to the Associate Dean. Be aware that no step in this process may be skipped. See "Procedures for Student Grievances about Courses or Faculty, CLAS."

Incomplete Grades: Incomplete grades (I) are not granted for low academic performance. To be eligible for an Incomplete grade, students must (1) *successfully* complete at least 75 percent of the course, (2) have special circumstances (verification may be required) that preclude the student from attending class and completing graded assignments, and (3) make arrangements to complete missing assignments with the original instructor using a CLAS Course Completion agreement.

Email – Students can communicate with me via email regarding attendance, meeting arrangements, grades, and/or questions regarding the course content, assignments, and due dates. You may also send me a message via Canvas. I will check my CU Denver email and Canvas daily, excluding weekends.

MyMathLab Technical Difficulties – Please contact Pearson Support. You can find a link on

<http://www.pearsonmylabandmastering.com/northamerica/> In most cases I will not be able to help with these types of issues, but feel free to email me so that I can be more lenient with due dates if necessary.

Where to Get Additional Help: There are Teaching Assistants available to answer your questions in the MERC lab in the North Classroom Building (NC) room 4015. This is an excellent resource! Check with the lab to see their schedule. Try to form a study group to study and learn with; it really works for some people. Realize that there are many ways of learning and a study group may be helpful for you. Listening to a lecture and asking questions may work for someone else. The Learning Resource Center (see below) may be able to assist you in setting up a study group. And don't forget about me! Please, don't be afraid to ask me questions. Don't think "I must be the only one who doesn't understand." Feel free to ask questions before, during, or after class. You are always welcome to drop in and see me during my open office hours (see page 1), or you can ask questions by email. If your email contains math symbols, just type them as you would on your calculator.

Other Resources:

[Academic Success and Advising Center](#) Helps new freshmen and transfer students through academic advising, schedule planning, time management, personal support and referrals to other on-campus resources. Student Commons Building (Academic Building), Suite 1113. **Phone:** (303) 315-1940 **E-mail:** ASAC@ucdenver.edu

[Career Center](#) The center assists and guides students with understanding and leveraging their skills, personality, values and interests as they choose an academic major and determine a career direction. Services include job search and strategies, resume development and writing, practice interviews and salary negotiation. Employers may benefit from online job posting, resume referrals, on-campus interviewing, career fairs, employer presentations, and networking events. Tivoli building, Room 267 **Phone:** (303) 556-2250.

[Disability Resources and Services Office](#) DRS serves the needs of a large and diverse community of students with disabilities, providing accommodations including: assistance in identifying volunteer note-takers, alternative testing, textbooks in alternate format, priority registration, interpreters and referral to the Access center. Student Commons Building (Academic Building), Suite 2116. **Phone :** (303) 315-3510 **E-Mail:** Disabilityresources@ucdenver.edu

[Office of Diversity and Inclusion](#) The center assists faculty, students and staff with educational resource materials and training about diversity and inclusion issues. The center is also home to the successful Educational Opportunity Programs (consisting of the American Indian Student Educational Programs and Outreach, the Asian American Student Educational Programs and Outreach, the Black Student Educational Programs and Outreach, the Hispanic Student Educational Programs and Outreach, and the Student Advocacy Center) and the Women's Resource Center

[First-Year Experience](#) The First Year Experience (FYE) is a comprehensive approach to ensure first year students make a successful transition to college. Office of Undergraduate Experiences **Phone:** 303-315-2133

[Experiential Learning Center](#) Live your learning! Get real life experience through internships, cooperative education, service learning, community engagement and undergraduate research. Tivoli Student Center, Suite 260 **Phone:** 303-556-6656

[Learning Resource Center](#) The Center provides individual and group tutoring, Supplemental Instruction (SI), study skills workshops and ESL support. UCD students are eligible for 1 hour of free tutoring per class per week. Student Commons Building (Academic Building) Room 2105 **Phone:** (303) 315-3531 **E-mail** tutorialservices@ucdenver.edu

The University of Colorado Denver provides many other services and resources. See <http://www.ucdenver.edu/life/services/Pages/index.aspx>

Spring 2018 CLAS Academic Policies

The following policies, procedures, and deadlines pertain to all students taking courses in the College of Liberal Arts and Sciences (CLAS). They are aligned with the Official University Academic Calendar found on the [Registrar's website](#).

Schedule Verification

It is each student's responsibility to verify that their official registration and schedule of courses is correct in UCDAccess (*not* Canvas) before courses begin and by the university census date. Failure to verify schedule accuracy is not sufficient reason to justify post-census date adds. Access to a course through Canvas is not evidence of official enrollment.

Email

Students must activate and regularly check their official CU Denver email account for university related messages. Note: Canvas is not the location to access your CU Denver email account. Log into <http://www.ucdenver.edu/email/Pages/login.aspx>

Administrative Drops

Students may be administratively dropped if they do not meet the pre- and/or co-requisites for a course as detailed in the UCDAccess registration system. Students may also be administratively dropped from a course if the course syllabus articulates attendance expectations prior to census date and they do not meet those attendance expectations. Please note: this procedure does not apply to all courses and students should not rely upon it; if students plan to no longer complete a course, they are responsible to drop or withdraw from the course.

Post-Census Date Adds and Late Withdrawals

Post-census date adds (i.e., adding a course after census date) require a written petition, verifiable documentation, and dean's approval via CLAS Advising. Late withdrawals (i.e., withdrawing from one or more full-semester courses after the withdrawal deadline but before the late withdrawal deadline) require a [Late Withdrawal Petition](#) submitted to CLAS Advising (NC 1030 – 303-315-7100). If petitioning to late-withdraw from individual courses, instructor signatures are required. If petitioning to late-withdraw from the entire semester, instructor signatures are not required. Contact CLAS Advising (NC 1030 – 303-315-7100) for more information on post-census date adds and late withdrawals.

Co-Requisites and Drops/Withdrawals

Students dropping a course with co-requisite(s) before or by census date must drop the course and co-requisite(s). After census date, students withdrawing from a course with co-requisite(s) before or by the withdrawal deadline must withdraw from the course and co-requisite(s). After the withdrawal deadline, until the late withdrawal deadline, students may be able to withdraw from a course or co-requisite(s) based on instructor permission and approval of a [Late Withdrawal Petition](#).

Waitlists

The Office of the Registrar notifies students via their CU Denver email account if they are added to a course from a waitlist. Students will have access to Canvas when they are on a waitlist, but this does not indicate that the student is officially enrolled or guaranteed a seat in the course. If a student is not enrolled in a course after waitlists are purged, instructor permission is required for the student to enroll in the course. The student must complete a [Late Add Form](#) and submit it to the Registrar's Office (SCB 5005) by census date in order to enroll in the course.

Applicable Forms

| Schedule Adjustment Form | Submit to Registrar (SCB 5005) | |
|--|---|---|
| Purpose: <i>Receive an academic overload</i> | Approval Signatures Required: <i>Student and CLAS Advising signatures</i> | Dates: <i>before Jan. 31 (5pm)</i> |
| <i>Receive a time conflict override</i> | <i>Student and instructor signatures</i> | <i>before Jan. 31 (5pm)</i> |
| <i>Designate a course pass/fail or no credit</i> | <i>Student signature</i> | <i>before Jan. 31 (5pm)</i> |
| <i>Withdraw from an intensive course before the withdrawal deadline</i> | <i>Student signature</i> | <i>Feb. 1 – April 1 (5pm)</i> |
| Late Add Form | Submit to Registrar (SCB 5005) | |
| Purpose: <i>Add a course after the add deadline but before census date</i> | Approval Signatures Required: <i>Student and instructor signatures</i> | Dates: <i>Jan. 22 – Jan. 31 (5pm)</i> |
| Post-Census Date Add Petition | Visit CLAS Advising (NC 1030) for more information | |
| Purpose: <i>Petition to add one or more full-semester courses after census date (verifiable documentation required)</i> | Approval Required: <i>Submitted petitions are reviewed by the CLAS Assistant Dean</i> | Dates: <i>after Jan. 31</i> |
| Late Withdrawal Petition | Submit to CLAS Advising (NC 1030) | |
| Purpose: <i>Petition to late-withdraw from a course after the withdrawal deadline but before the late withdrawal deadline</i> | Approval Signatures Required: <i>Student and instructor signatures</i> | Dates: <i>April 2 – May 2 (5pm)</i> |
| <i>Petition to late-withdraw from <u>all courses</u> in the semester after the withdrawal deadline but before the late withdrawal deadline</i> | <i>Student signature</i> | <i>April 2 – May 2 (5pm)</i> |

Spring 2018 CLAS Academic Calendar

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|----------------------------------|---|
| January 16 | Beginning of Semester – First day of classes. |
| January 21 (11:59 pm) | Add Deadline – Last day to add or waitlist a course using UCDAccess. After the add deadline but before census date, instructor permission on a Late Add Form is required to add courses. |
| January 22 (11:59 pm) | <p>Drop Deadline – Last day to drop a course without \$100 drop fee, including section changes (i.e., changing to a different section of the same course). Students may drop courses using UCDAccess.</p> <p>No Adding of Courses is Permitted Today</p> <p>Waitlists Purged – All waitlists are eliminated today. Students should check their schedule in UCDAccess to confirm the courses in which they are officially enrolled. Canvas does not reflect official enrollment.</p> |
| January 31 (5 pm) | <p>Final Add Deadline (Instructor Permission Required) Last day to add full-semester courses. To add a full-semester course between the first add deadline and census date, instructor permission on a Late Add Form is required. Students may submit a completed Late Add Form to the Registrar’s Office (SCB 5005). After census date, a written petition, verifiable documentation, and dean’s approval via CLAS Advising (NC 1030 – 303-315-7100) are required to add a full-semester course. If a student’s post-census date add petition is approved, the student will be charged the full tuition amount. College Opportunity Fund (COF) may not apply to courses added late, and these credits may not be deducted from students’ lifetime hours.</p> <p>Final Drop Deadline Last day to drop full-semester courses with a financial adjustment. Each course dropped, including section changes, between the first drop deadline and census date generates a \$100 drop fee. Students may drop courses in UCDAccess. After census date, withdrawal from courses appears on transcripts with a grade of “W,” and no financial adjustment is made. After census date but before the withdrawal deadline, students may withdraw from full-semester courses using UCDAccess (instructor permission is not required).</p> <p>Graduation Application Deadline Last day to apply for graduation. Undergraduates are expected to make an appointment to see their academic advisors before census date to apply for graduation. Graduate students must complete the Intent to Graduate and Candidate for Degree forms.</p> <p>Pass/Fail, No Credit Deadline – Last day to request No Credit or Pass/Fail grade for a course using a Schedule Adjustment Form.</p> |
| March 19 – 25 | Spring Break – No classes. Campus open. |
| April 1 (11:59 pm) | <p>Withdrawal Deadline After census date, students may withdraw from full-semester courses using UCDAccess (instructor permission is not required). To withdraw from an intensive course, students may use a Schedule Adjustment Form. Withdrawal from courses appears on transcripts with a grade of “W” and no financial adjustment is made. After the withdrawal deadline but before the late withdrawal deadline, students may late-withdraw by submitting a Late Withdrawal Petition to CLAS Advising (NC 1030 – 303-315-7100). Contact CLAS Advising (NC 1030 – 303-315-7100) for more information. After census date, students withdrawing from a course with co-requisite(s) before or by the withdrawal deadline must withdraw from the course and co-requisite(s). After the withdrawal deadline, until the late withdrawal deadline, students may be able to withdraw from a course or co-requisite(s) based on instructor permission and approval of a Late Withdrawal Petition.</p> |
| May 2 (5 pm) | <p>Late Withdrawal Deadline Last day to petition to late-withdraw from one or more full-semester courses. Students may petition to late-withdraw by submitting a Late Withdrawal Petition to CLAS Advising (NC 1030 – 303-315-7100). If petitioning to late-withdraw from individual courses, instructor signatures are required. If petitioning to late-withdraw from the entire semester, instructor signatures are not required. Contact CLAS Advising (NC 1030 – 303-315-7100) for more information. After the withdrawal deadline, until the late withdrawal deadline, students may be able to withdraw from a course with co-requisite(s) based on instructor permission and approval of a Late Withdrawal Petition. After the late withdrawal deadline (or after grades are posted, whichever is sooner), only retroactive withdrawals are considered and verifiable documentation is required. Contact CLAS Advising (NC 1030 – 303-315-7100) for more information on retroactive withdrawals.</p> |
| May 7 – 12 | Finals Week |
| May 12 | <p>End of Semester</p> <p>Commencement Ceremony</p> |
| May 17 | Final Grades Available – Official grades available in UCDAccess and transcripts (tentative). Canvas does not display final grades. |
| June 22 | Degrees Posted – Degrees posted for graduating students on transcripts. |

Census Date

Tentative Schedule Spring 2018

| Week | Beginning | Sections to be covered |
|------|-------------|---|
| 1 | January 16 | 1.1 – Functions and Models 1.2 – Graphs of Functions |
| 2 | January 22 | 1.3 – Linear Functions 1.4 – Equations of Lines 2.1 – Algebraic and Graphical Solutions of Linear Equations |
| 3 | January 29 | 2.2 – Fitting Lines to Data Points: Modeling Linear Functions 2.3 – Systems of Linear Equations in Two Variables |
| 4 | February 5 | 2.4 – Solutions of Linear Inequalities 3.1 – Quadratic Functions; Parabolas |
| 5 | February 12 | Exam 1 (Sections 1.1 - 1.4, 2.1 - 2.4) |
| 6 | February 19 | 3.2 – Solving Quadratic Equations 3.3 Piecewise-Defined Functions and Power Functions |
| 7 | February 26 | 3.4 – Quadratic and Power Models 4.1 – Transformations of Graphs and Symmetry |
| 8 | March 5 | 4.2 – Combining Functions; Composite Functions 4.3 – One-to-one Functions and Inverse Functions |
| 9 | March 12 | Exam 2 (Sections 3.1-3.4, 4.1 – 4.3) |
| | March 19 | Spring Break |
| 10 | March 26 | 4.4 – Additional Equations (Skip Additional Inequalities) 5.1 – Exponential Functions |
| 11 | April 2 | 5.2 – Logarithmic Functions; Properties of Logarithms 5.3 – Exponential and Logarithmic Equations |
| 12 | April 9 | 5.4 – Exponential and Logarithmic Models 5.5 – Exponential Functions and Investing |
| 13 | April 16 | Exam 3 (Sections 4.4, 5.1-5.5) |
| 14 | April 23 | 6.1 – Higher Degree Polynomial Functions 6.2 – Modeling with Cubic and Quartic Functions |
| 15 | April 30 | 6.3 – Solutions of Polynomial Equations 6.5 Rational Functions and Rational Equations |
| | May 7 | Finals Week. Cumulative Final Exam available this week. |

NOTE: I don't anticipate changing this schedule. However, if necessary I do reserve the right to make changes during the semester. Any changes will be announced in class and posted to the online syllabus on the course CANVAS page.

Math 1070 Learning Objectives and Outcomes

University of Colorado Denver (2018)

Learning Objectives and Outcomes are listed below in two parts. Part 1 lists the Colorado Commission of Higher Education's Learning Objective. Part 2 lists the University of Colorado at Denver Course Learning Outcomes for MATH 1070. Students may find the specific Learning Outcomes found in Part 2 helpful in guiding their studies.

Part 1 – Colorado Commission on Higher Education Learning Objectives

The Colorado Commission on Higher Education has approved MATH 1070 for inclusion in the Guaranteed Transfer (GT) Pathways program in the GT-MA1 category. For transferring students, successful completion with a minimum grade of C-grade guarantees transfer and application of credit in this GT Pathways category. For more information on the GT Pathways program, go to <http://highered.colorado.gov/academics/transfers/gtpathways/curriculum/html>.

I. GT Pathways Mathematics (GT-MA1) Content Criteria:

- a) Demonstrate good problem-solving habits, including:
 - Estimating solutions and recognizing unreasonable results.
 - Considering a variety of approaches to a given problem, and selecting one that is appropriate.
 - Interpreting solutions correctly.
- b) Generate and interpret symbolic, graphical, numerical, and verbal (written or oral) representations of mathematical ideas.
- c) Communicate mathematical ideas in written and/or oral form using appropriate mathematical language, notation, and style.
- d) Apply mathematical concepts, procedures, and techniques appropriate to the course.
- e) Recognize and apply patterns or mathematical structure.
- f) Utilize and integrate appropriate technology.

II. GT Pathways Mathematics (GT-MA1) Competencies:

A. Quantitative Literacy: Competency in quantitative literacy represents a student's ability to use quantifiable information and mathematical analysis to make connections and draw conclusions. Students with strong quantitative literacy skills understand and can create sophisticated arguments supported by quantitative evidence and can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc.).

Students should be able to:

1. Interpret Information.

- a. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).

2. Represent Information.

- a. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).

3. Perform Calculations.

- a. Solve problems or equations at the appropriate course level.
- b. Use appropriate mathematical notation.
- c. Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.

4. Apply and Analyze Information

- a. Make use of graphical objects (such as graphs of equations in two or three variables, histograms, scatterplots of bivariate data, geometrical figures, etc.) to supplement a solution to a typical problem at the appropriate level.
- b. Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.

c. Make judgments based on mathematical analysis appropriate to the course level.

5. Communicate Using Mathematical Forms.

a. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).

B. Problem Solving: Competency in problem solving represents a student's ability to design, evaluate, and implement a strategy to answer a question or achieve a goal.

Students should be able to:

1. Define a Problem.

a. Construct a detailed and comprehensive problem statement or goal.

b. Identify relevant contextual factors.

2. Propose a Strategy.

a. Identify reasonable approaches to solving the problem within the given context.

3. Evaluate Potential Strategies.

a. Provide an evaluation of the potential strategy(ies) which may include:

i. the history of the problem,

ii. the logic behind the potential strategy(ies),

iii. the feasibility of the proposed strategy(ies), and

iv. the potential impacts of the proposed strategy(ies).

b. Choose a feasible strategy.

4. Apply a Strategy.

a. Implement chosen approach(es).

b. Gauge success of the chosen strategy(ies) and revise as needed.

Math 1070 Learning Objectives and Outcomes
University of Colorado Denver (2018)

Part 2 – University of Colorado Denver CORE Learning Outcomes

1. **Calculate:** Accurately and logically manipulate a mathematical representation to attain desired information.
2. **Represent:** Able to translate between representations to clearly represent information and gain insight. Representations may be expressed symbolically, graphically, numerically, or verbally.
3. **Interpret:** Draw meaningful inferences and communicate insights from mathematical representations. Mathematical representations may include statistical, graphical, algebraic, geometric, or symbolic.
4. **Model:** Develop and/or apply an appropriate mathematical model for a real-world problem. This can be demonstrated by e.g. developing a model, choosing an appropriate model from several, or explaining the primary assumptions needed to use a particular model.

Course Learning Outcomes for MATH 1070

The following section lists the Learning Outcomes specific to the course (MATH 1070). Each Learning Outcome reflects one or more of the CORE Learning Outcomes with the outcome of emphasis being listed.

1.1 Functions and Models

Students will be able to...

- Determine if a table, graph, or equation defines a function (*Interpret*)
- Find the domains and ranges of functions (*Calculate*)
- Use function notation to evaluate functions (*Calculate*)
- Apply real world information using a mathematical model. (*Model*)

1.2 Graphs of Functions

Students will be able to...

- Graph equations using the point-plotting method (*Represent*)
- Graph equations using graphing calculators (*Represent*)
- Graph data points (*Represent*)
- Align inputs and scale outputs to model data (*Interpret*)

1.3 Linear Functions

Students will be able to...

- Identify linear functions (*Represent*)
- Find the intercepts and slopes of graphs of linear functions (*Calculate*)
- Graph linear functions (*Represent*)
- Find the rate of change of a linear function (*Calculate*)
- Identify identity and constant functions (*Represent*)
- Apply linear revenue, cost, and profit functions (*Calculate*)
- Find marginal revenue and marginal profit from linear revenue and linear profit functions (*Calculate*)

1.4 Equations of Lines

Students will be able to...

- Write equations of lines using the slope-intercept form and the point-slope form (*Represent*)
- Write equations of horizontal and vertical lines (*Represent*)
- Write equations of lines parallel or perpendicular to given lines (*Represent*)
- Find the average rate of change over an interval for nonlinear functions (*Calculate*)
- Find the slope of the secant line between two points on a graph (*Calculate*)
- Find average rates of change for approximately linear data (*Calculate*)

2.1 Algebraic and Graphical Solutions of Linear Equations

Students will be able to...

- Solve linear equations algebraically (*Calculate*)
- Solve real world applications (*Model*)
- Compare solutions of equations with zeros and x-intercepts of graphs of functions (*Interpret*)
- Solve linear equations graphically using the x-intercept and intersection methods (*Calculate*)
- Solve literal equations for a specified variable (*Represent*)
- Solve direct variation problems (*Calculate*)

2.2 Fitting Lines to Data Points: Modeling Linear Functions

Students will be able to...

- Find exact linear models for data (*Model*)
- Determine if a set of data can be modeled exactly or approximately (*Interpret*)
- Create scatter plots for sets of data (*Model*)
- Find approximate linear models for data (*Calculate*)
- Visually determine if a linear model is a “good” fit for data (*Interpret*)
- Solve problems using linear models (*Model*)

2.3 Systems of Linear Equations in Two Variables

Students will be able to...

- Solve systems of linear equations graphically (*Represent*)
- Solve systems of linear equations algebraically with the substitution method (*Calculate*)
- Solve systems of linear equations algebraically by elimination (*Calculate*)
- Model systems of equations to solve problems (*Model*)
- Determine if a system of linear equations is inconsistent or dependent (*Interpret*)

2.4 Solutions of Linear Inequalities

Students will be able to...

- Solve linear inequalities algebraically (*Calculate*)
- Solve linear inequalities graphically with the intersection and x-intercept methods (*Represent*)
- Solve double inequalities algebraically and graphically (*Represent*)

3.1 Quadratic Functions; Parabolas

Students will be able to...

- Determine whether a function is quadratic (*Interpret*)
- Determine whether the graph of a quadratic function is a parabola that opens up or down (*Interpret*)
- Determine whether the vertex of the graph of a quadratic function is a maximum or a minimum (*Interpret*)
- Determine whether a function increases or decreases over a given interval (*Interpret*)
- Find the vertex of the graph of a quadratic function (*Calculate*)
- Graph a quadratic function (*Represent*)
- Write the equation of a quadratic function given information about its graph (*Represent*)
- Find the vertex form of the equation of a quadratic function (*Calculate*)

3.2 Solving Quadratic Equations

Students will be able to...

- Solve quadratic equations using factoring (*Calculate*)
- Solve quadratic equations graphically using the x-intercept method and the intersection method (*Represent*)
- Solve quadratic equations by combining graphical and factoring methods (*Represent*)
- Solve quadratic equations using the square root method (*Calculate*)
- Solve quadratic equations by completing the square (*Calculate*)
- Solve quadratic equations using the quadratic formula (*Calculate*)
- Solve quadratic equations having complex solutions (*Calculate*)

3.3 Piecewise Defined Functions and Power Functions

Students will be able to...

- Evaluate and graph piecewise-defined functions (*Calculate*)
- Graph the absolute function (*Represent*)
- Solve absolute value equations (*Calculate*)
- Evaluate and graph power functions (*Represent*)
- Graph root functions and the reciprocal function (*Represent*)
- Solve problems involving direct variation as the n th power (*Calculate*)
- Solve problems involving inverse variation (*Calculate*)

3.4 Quadratic and Power Models

Students will be able to...

- Find the exact quadratic function that fits three points on a parabola (*Calculate*)
- Model data approximately using quadratic functions (*Model*)
- Model data using power functions (*Model*)
- Use first and second differences and visual comparison to determine if a linear or quadratic function is the better fit to the set of data. (*Interpret*)
- Determine whether a quadratic or power function gives better fit to a given set of data (*Interpret*)

4.1 Transformations of Graphs and Symmetry

Students will be able to...

- Find equations and graphs of functions whose graphs have been vertically shifted, horizontally shifted, stretched, compressed, and reflected (*Represent*)
- Determine if a graph is symmetric about the y -axis (*Interpret*)
- Determine if a graph is symmetric about the origin (*Interpret*)
- Determine if a graph is symmetric about the x -axis (*Interpret*)
- Determine if a function is even, odd, or neither (*Interpret*)

4.2 Combining Functions; Composite Functions

Students will be able to...

- Find sums, differences, products, and quotients of two functions (*Calculate*)
- Form average cost functions (*Calculate*)
- Find the composition of two functions (*Calculate*)

4.3 One-to-One Functions and Inverse Functions

Students will be able to...

- Determine whether two functions are inverses (*Calculate*)
- Determine whether a function is one-to-one (*Calculate*)
- Find the inverse of a function (*Calculate*)
- Graph inverse functions (*Represent*)
- Find inverse functions on limited domains (*Calculate*)

4.4 Additional Equations

Students will be able to...

- Solve radical equations (*Calculate*)
- Solve equations with rational powers (*Calculate*)
- Solve equations in quadratic form (*Calculate*)

5.1 Exponential Functions

Students will be able to...

- Graph and apply exponential functions (*Represent*)
- Find horizontal asymptotes (*Calculate*)
- Graph and apply exponential growth functions (*Represent*)
- Graph and apply exponential decay functions (*Represent*)
- Compare transformations of graphs of exponential functions (*Represent*)

5.2 Logarithmic Functions; Properties of Logarithms

Students will be able to...

- Graph and evaluate logarithmic functions (**Represent**)
- Convert equations to logarithmic and exponential forms (**Represent**)
- Evaluate and apply common logarithms (**Calculate**)
- Evaluate and apply natural logarithms (**Calculate**)
- Apply logarithmic properties (**Represent**)

5.3 Exponential and Logarithmic Equations

Students will be able to...

- Solve an exponential equation by writing it in logarithmic form (**Calculate**)
- Convert the base of logarithms using the change-of-base formula (**Represent**)
- Solve an exponential equation by using logarithms and their properties (**Calculate**)
- Solve logarithmic equations (**Calculate**)
- Solve exponential and logarithmic inequalities (**Calculate**)

5.4 Exponential and Logarithmic Models

Students will be able to...

- Model data with exponential functions (**Model**)
- Use constant percent change to determine whether data fit an exponential model (**Calculate**)
- Compare quadratic and exponential models of data (**Interpret**)
- Model data with logarithmic functions (**Model**)

5.5 Exponential Functions and Investing

Students will be able to...

- Find future value of investments when interest is compounded k times per year. (**Calculate**)
- Find future value of investments when interest is compounded continuously. (**Calculate**)
- Find the present value of an investment for both cases above (**Calculate**)

6.1 Higher Degree Polynomial Functions

Students will be able to...

- Identify the graphs of higher-degree polynomial functions (**Interpret**)
- Graph cubic functions (**Represent**)
- Graph quartic functions (**Represent**)
- Find local minima, local maxima, absolute minima, and absolute maxima of polynomial functions (**Calculate**)

6.2 Higher Degree Polynomial Functions

Students will be able to...

- Model and apply data with cubic functions (**Model**)
- Model and apply data with quartic functions (**Model**)

6.3 Solutions of Polynomial Equations

Students will be able to...

- Solve polynomial equations using factoring, factoring by grouping, and the root method (**Calculate**)
- Find factors, zeros, x -intercepts, and solutions (**Calculate**)
- Estimate solutions with technology (**Calculate**)
- Solve polynomial equations using the intersection method and the x -intercept method (**Calculate**)

6.5 Solutions of Polynomial Equations

Students will be able to...

- Graph rational functions (**Represent**)
- Find vertical asymptotes, horizontal asymptotes, and missing points (holes) in graphs of rational functions (**Calculate**)
- Solve rational equations algebraically and graphically (**Calculate**)