Math 1010-090 Intermediate Algebra (4 cr)

Summer 2020 Syllabus

Instructor: Predrag Krtolica, PhD
Online Office Hours: M 1:30 pm - 2:20 pm; H 5:30 pm - 6:20 pm
Office Location: JWB 121
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Website: Canvas

Dates:

M 5/11	First Day of Class	6/11 - 6/13 (wk 5)	Exam 1
F 5/15	Last Day to Add w/o Permission	7/9 - 7/11 (wk 9)	Exam 2
W 5/20	Last Day to Drop/Add/Audit		
M 5/25	Memorial Day		
F 7/3	Independence Day		
F 7/24	Pioneer Day		
F 6/19	Last Day to Withdraw	7/30 - 8/1	Final Exam
W 7/29	Last Day of Semester		

Exams: Students are asked to fill out polls found in the Week 1 module to determine the exam times and dates. Exam dates will be set in Week 2 of the course.

COURSE DESCRIPTION: Mathematics is a sense making activity to understand the world we live in. Scientists, social scientists, engineers, business leaders, health care providers, and politicians require a high degree of quantitative literacy to accomplish their goals. In this course, students will become adept at working with linear, exponential, basic logarithmic, quadratic, square root, and power functions, and see how these functions can be used to describe and analyze some of the most difficult problems our society faces. Along the way, functions are used to motivate important topics including evaluating expressions, solving equations and inequalities, graphing, and analyzing graphs.

COURSE INFORMATION: Math 1010, Intermediate Algebra is a 4-credit semester course. Math 1010-90 is an online section. There are no required class meeting times. Students will be provided with materials in Canvas including videos, notes, homework, quizzes and discussions. There are weekly deadlines. There are two proctored exams and one proctored final.

PREREQUISITES: Prerequisites: "C" or better in MATH 990 OR Accuplacer EA score of 54 or better OR ACT Math score of 18 or better OR SAT Math score of 470 or better. Important Note: The mathematics department DOES enforce prerequisites for all undergraduate courses. If you were able to register for this class based on your enrollment in the prerequisite course last semester and you did not receive the minimum grade in that course to enter this class, then you will be dropped from this class on Friday of the first week of classes. If you are in this situation, it is in your best interest to drop yourself from this class and enroll in a class for which you have the prerequisites before you are forcibly dropped.

AFTER MATH 1010: Math 1010 is designed to prepare students who are entering STEM, business, and education fields for their future math classes. Math 1010 is also a prerequisite for such courses. The following grades in Math 1010 are needed to proceed:

- C in Math 1010 for Math 1050 (College Algebra) or Math 1090 (Business Algebra)
- B- in Math 1010 for Math 4010 (Mathematics for Elementary School Teachers I)
- B in Math 1010 for Math 1080 (Precalculus which is an accelerated College Algebra-Trig course)

Note, Math 1010 is not THE prerequisite. You can also enter the above courses with certain ACT or Accuplacer scores or other class scores. Use this link for information about prerequisites: http://catalog.utah.edu/preview_entity.php?catoid=14&ent_oid=1782&returnto=1554.

If you are in a major with no math requirement other than the university's QA requirement, then MATH 1030 (Introduction to Quantitative Reasoning), is likely the best math class for you. Note, the prerequisite cut-offs for Math 1010 and Math 1030 are close to each other: an ACT score of 18 gets you into Math 1010; an ACT score of 19 gets you into Math 1030. If you were able to register for Math 1010 based on your ACT score but want to be in Math 1030, consider taking the Accuplacer placement exam, and trying to test into Math 1030 using your Accuplacer score (the Accuplacer placement exam is used by and given at the University of Utah.) You can find information about it here: http://testingcenter.utah.edu/students/placement-tests/newstudents.php. Also, to do your best on the Accuplacer, do use the review material (also available from the link).

If you are intending to take Math 1030 (Intro to Quantitative Reasoning) or Math 1040 (Intro to Statistics and Probability), and would like to use a course as your prerequisite, it is suggested that you take Math 980 instead of Math 1010. While Math 1010 is a prerequisite for these classes, it also covers many topics that will not be used in Math 1030 or Math 1040.

If you have any questions about which math class to take, you should check with your advisor or meet with a math department advisor. The math department advisors are there for all students at the university who have questions about math classes, not just math majors. You can find information about them at http://www.math.utah.edu/ugrad/advising.php.

REQUIRED COURSE MATERIALS: For both quality learning and proctored testing, you are required to have access to the following equipment:

- **internet** (in order to access course materials and take exams);
- a **webcam on your computer or camera on your phone** (this is necessary for taking exams in Zoom; it is useful for online meetings);
- a **scanning device** (smartphones can be used as scanning devices) which is different than the device you are using for your camera.

The following are recommended, but not required:

- a **microphone** (used for online meetings);
- **a printer** (if you don't have one, you will need to make hand-written templates);
- A four-function or scientific **calculator.**

We also use this text and online HW website:

- ***Intermediate Algebra*, 4th Edition** by Julie Miller, Molly O'Neill, Nancy Hyde and with online HW done in **ALEKS**. You can use the E-book within ALEKS or purchase a loose-leaf version of this textbook through ALEKS or at the UofU bookstore. The latter is bundled with ALEKS access. The price of ALEKS and the E-book is about $95. There is a 14-day free trial, so it is recommended you wait until you are certain you will be in the course before purchasing ALEKS. More information can be found here: http://www.math.utah.edu/schedule/bookInfo/index.html

Expected Learning Outcomes:

Below at the learning objectives for all Math 1010 Courses at the University of Utah. A few topics have been removed for the online course. These are indicated with the strike-through font.

1. Work with functions presented in tables, graphs, with algebraic expressions, or in words. Determine if relations presented in any of these formats are functions. The functions covered in this course are linear, exponential, logarithmic, quadratic, square root, power, and nth-roots.
2. Find the domain, -intercepts, -intercepts, output given input, and input given output for all functions presented with tables, graphs, or algebra. Find the range of functions presented graphically.
3. Know the shapes of the graphs of all the above functions. Be able to recognize when a sufficient portion of the graph is sketched in order to indicate the graph shape.
4. Decide if a given function is linear, quadratic, exponential, or none of the above for functions presented algebraically, graphically, or in tables.
5. Graphing Techniques Vary by Function
    - Graph linear functions using either two points or one point and a slope.
    - Graph quadratic functions using either of these approaches:
        1. the -intercepts and the vertex (or line of symmetry);
        2. the vertex and an efficient table (be able to use symmetry and possibly the -intercept).
    - Graph logarithmic functions with no transformations using the meaning of the logarithm.
    - Graph exponential and square root functions, when given in transformation form, using efficient tables.
    - Graph power functions and nth-root functions> with no transformations using tables.
6. Solve linear, quadratic, exponential, logarithmic and square root equations.

    - Solve quadratic equations using factoring and the zero-product property, completing the square, and the quadratic formula.
7. Solve linear inequalities and give answers in inequality, interval, and graphical (number line) format.
8. Determine the slope of a line; find the equations of lines given information about them. Decide if lines are parallel, perpendicular, or neither.
9. Solve 2x2 systems of linear equations and functions using graphical and substitution methods.
10. Be able to factor quadratic expressions or decide if they cannot be factored; complete the square.
11. Perform composition of functions presented with tables, graphs, or algebra.
12. Decide if a function presented with a table or graph is invertible and give the inverse in the same format.
13. Find the algebraic inverse of a linear function presented algebraically.
14. Make sense of exponent rules, negative exponents, and rational exponents. Use exponent rules to simplify exponential expressions.
15. Understand nth-roots, rational exponents and the connection between the two. Simplify nth roots and exponential expressions with rational exponents.
16. Construct algebraic models to describe real life situations. Be able to decide what type of model fits a situation best:
    1. Use linear functions to model constant rates of growth.
    2. Use exponential functions to model constant percent change.
    3. Use quadratic functions to model constant acceleration.
17. Analyze linear, exponential, and quadratic models to answer questions about the situations they represent. In particular, relate graphical features (like the - and -intercepts of all functions or the vertex of a parabola) to specific aspects of the situation being modeled. For quadratics, be able to rewrite the function appropriately in order to find the information desired.

RESOURCES TO HELP YOU: Contacting me by my e-mail, coming to online office hours, or setting up an appointment is the first way to get help. I am happy to talk about individual problems, mathematical concepts, or help you make a study/learning plan. Please seek help early in the term.

CANVAS DISCUSSION BOARDS

- Please post questions and answers. Your classmates are often the faster and most knowledgeable people to respond! If something is urgent, send me an e-mail too.

TUTORING HELP

- **UofU Math Tutoring Center ("drop-in" online tutoring).** The math center offers online tutoring. You can find more information here: https://utah.instructure.com/courses/613503/
- **UofU Learning Center (fomerly ASUU Tutoring; offers subsidized one-on-one tutoring)** The Learning Center offers three free tutoring sessions per student per

semester. Additional hours can be purchased after that. Scholarship assistance also available. Here is a link to more information: https://learningcenter.utah.edu/

ALEKS HELP

- Contact ALEKS customer support (search the internet under "ALEKS customer support" for contact detail) if you have issues with the online platform. If ALEKS representatives are not able to assist, e-mail your instructor with a description of the problem and the case number.

EQUIPMENT HELP

- The UofU has a laptop and mobile hotspot loan program – laptops, mobile hotspots mailed to current U students on a first-come, first-served basis. You can find out more information about this through this link: https://union.utah.edu/covid-19/

GENERAL HELP, IN PARTICULAR IN LIGHT OF COVID-19

Here is information from the University about logistics in light of COVID-19. There is also information about financial assistance, councelling, the food pantry, and much more. https://coronavirus.utah.edu/#students

WEEKLY WORKLOAD: This is an online course, but still an intense course. According to the University of Utah, a 4-unit course should have about 4 hours of lecture and 8 hours of outside study/homework time. This means that our online course, will take the average student about 12 hours per week. (In the summer when we complete the semester in 12 weeks instead of 15, students should plan to spend about 14 hours on this course per week!) Some students will be able to get by on less, and some student will need more.

Each week, we cover specific sections. You can choose when you work on the material in the week, keeping your objective and topic goals in mind, but you can't complete the course at your own pace.

COMMUNICATION EXPECTATIONS IN AN ONLINE COURSE: Most course announcements will be posted in announcement quizzes on Canvas. You are expected to take the course information quizzes at the start of the course, the weekly quizzes at the start of each week, and the exam-related quizzes when posted. In between announcement, I will send updates and reminders by e-mail in Canvas. You should check your Canvas mail approximately every 2-3 days, including late Wednesday or early Thursday (when I will send out e-mails if students need to resubmit quizzes.)

IS ONLINE RIGHT FOR YOU?

Before committing to this course, consider whether the online format matches your learning style. To aid in this, please look at: A: Online?

Most semesters, we recommend that students consider whether an online course will work for them by looking at A: Online? In Summer 2020, we know there are fewer choices, however it is still really important to think about whether you have the motivation and time to be successful in this course.

COURSE MATERIALS

COURSE WEBSITE: Canvas https://utah.instructure.com/ Since you are taking this quiz, you have found this site. It is a good idea to save this address, so that you can get to Canvas without going through CIS. Usually once or twice a term, CIS goes down, so the alternative access is useful.

ONLINE HW: ALEKS. This is the homework/practice website. There is also access to the E-book and additional learning resources. You will access the site through Canvas. You need to purchase ALEKS access. You can do so through ALEKS or at the bookstore (bundled with the loose-leaf text). See A: ALEKS for more information.

TEXT: *Intermediate Algebra*, 4th Edition by Julie Miller, Molly O'Neill, Nancy Hyde.

You can use the E-book within ALEKS or purchase a loose-leaf version of this textbook through ALEKS or at the UofU bookstore. The latter is bundled with ALEKS access. Students often ask if the textbook is necessary. My response and additional information about how to get the textbook can be found here: A: Textbook.

RECORDED LECTURE VIDEOS:

They are available through the modules or in both streamable and downloadable versions at http://www.math.utah.edu/lectures/math1010.html. (It's good to save this address somewhere else, in case Canvas is down)

TECHNOLOGY:

The majority of the course work can be done without a calculator (if you are curious about a particular problem, just ask). However, in order to focus on algebra and not arithmetic, four-function and scientific calculators are allowed, both for homework and exams. On exams, other types of calculators are not allowed, including graphing and business calculators and calculator apps on phones and computers.

BREAKDOWN OF COURSE:

Each week, we cover specific sections. You can choose when you work on the material in the week (as long as you meet deadlines), but you can not complete the course at your own pace, as there are specific due dates throughout the semester.

The course week starts on a Wednesday and ends on a Tuesday. Due dates for assignments and quizzes are on a Tuesday. This allows students to get more feedback on the last two days of the week. (So , Week 2 in our class spans the end of University Week 2 and the start of University Week 3).

Here is a breakdown of the components in the course and what they are worth.

- **Reading Announcements on Canvas.** Course documents and announcements are given in quiz format and have a short quiz about the content at the end. These "quizzes" begin with "A:..." Completing these is worth 2% of your grade. Suggested due dates are shown, but these can be completed at any time up to one day before the final.
- **Reading** from your **textbook**. See my comments on the textbook here: A: Textbook.
- **Watching** the **video lectures.** These were produced by the U of U math department. They are available in Canvas or on the math department website. If you find a video isn't addressing your questions, ask your instructor for additional resources.
- **Practicing in ALEKS.** ALEKS is an adaptive homework system, which means it assesses what you know and what you don't know and then customizes your assignments accordingly. In ALEKS, you will work on Objectives (the equivalent of homework assignments) and periodically take Knowledge Checks (quizzes that are not graded, but determine the customization of objectives). This is how your work in ALEKS contributes to our course:
    - 16% from Completing your Objectives. There are 14 objectives in the course, eleven weeks of content and three weeks or reivew. Their due dates are shown in ALEKS. Partial credit is awarded. Your lowest score is dropped at the end of the term
    - 5% from Weekly Time Goals. This is to encourage you to spend at least 7 hours practicing problems in ALEKS every week. A week starts on Wednesday and ends on Tuesday, with minor adjustments in the first and last week. To get full credit, you either need to spend 7 hours or have completed your objective goal for the week by the time it is due (the latter is done manually and goes in a few days after the assignment is due). If you do not meet your time or objective goal, then your score will be the percentage of time out of 7 hours that you spent in ALEKS.
    - **Weekly "On-Paper" Quizzes:** There will be quizzes weekly, except for exam weeks. You can access them on Friday (earlier by special arrangement) and they are due on Tuesdays. You will either need to print your quiz, or make a handwritten version of the quiz. (If handwriting, you need to have as many pages as the template and have the same questions in the same places on the same pages. You don't need to copy the questions.) You are responsible for submitting the assignment with the correct format and correct file extension. If you submit with the wrong format, there will either be a deduction (for small format issues) or you will be asked to resubmit by Thursday (for large issues) and there will be a late penalty. The quizzes are worth 10% of your grade. There are 12 quizzes and the lowest two quiz scores will be dropped at the end of the term. Change this for summer; there are 9 quizzes.
- **40% from Exams:** There will be two midterm exams. Exams will be given in Canvas and proctored through Zoom. A time and date will be set for each exam in the

second week of classes, based on class polls. For the exams you will need a camera (web cam or phone cam) and a separate device for scanning. You are allowed to use a scientific or four-function calculator and one page of notes. You are not allowed to use any computer or online resources (including math sites and online calculators), notebooks or books, or to communicate about the exam with other humans. Not following these rules is considered academic misconduct and will be penalized as such. See further comments about academic misconduct below.

- **Final:** The final is comprehensive and worth 30% of your grade. It will be online and proctored, just like an exam.

EARLY POLICY

- ALEKS assignments are sequential. You can start the next assignment as soon as you have mastered all the topics in the previous one.
- You have a 5-day window to complete quizzes. Under special circumstances, you may request them up to two-days earlier than this. Please request this at least 48 hours before you would like to access the quiz.
- You can also take exams up to a week early, upon well-planned request. Please let me know at least 7 days before you wish to take the exam.
- Students are encouraged to take the departmental final. If this time or location is inconvenient, you may schedule an earlier alternative final either at the Uonline testing center or with a proctor.

COMMENTS ON THE LATE POLICY: You are expected to turn things in on time. It is your responsibility to maintain your computer and related equipment in order to participate in this online course. Equipment failures will not be an acceptable excuse for late or absent assignments. Similarly, it is your responsibility to start assignments early enough, so that even if you are in traffic, your flight gets delayed, you are called into work, your run out of ink, you do work for another class, etc., you still have time to deal with the situation and then finish the assignment.

However, because things may happen that will prevent you from turning in assignments on time, this course provides multiple types of accommodations. First, the two lowest HW and the two lowest quiz scores are dropped at the end of the semester.

THE LATE POLICY FOR HW: If you miss a homework deadline in ALEKS, you cannot return to the missed assignment without losing access to your current assignment. In order for you to stay caught up with current material, it is recommended that you focus on the current week. It will include any past topics that you need as prerequisites. You will have a chance to complete any topics previously missed through the "catch-up" assignments before exams and the final.

LATE POLICY FOR QUIZZES: Late quizzes will not be accepted.

LATE POLICY FOR EXAMS: You have a multi-day window to take exams. It is recommended that you complete these during the middle of the window, in case something arises at the end which would prevent you from completing them.

EXTREME SITUATIONS: If you have an extraordinarily severe situation, contact me, your instructor. We can discuss waiving penalties, granting longer extension periods for HW, excusing quizzes, extending exam dates, etc. Send documentation if possible. If not possible, still contact me to discuss alternatives.

THE AMERICANS WITH DISABILITIES ACT: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability & Access, 162 Olpin Union Building, 801-581-5020. CDA will work with you and the instructor to make arrangements for accommodations.

All written information in this course can be made available in alternative format with prior notification to the Center for Disability & Access.

STUDENT RESPONSIBILITIES: All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. You have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, collusion, fraud, theft, etc. Students should read the Code carefully and know you are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. http://regulations.utah.edu/academics/6-400.php.

DIVERSITY STATEMENT: It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any my meetings or entire due-date windows conflict with your religious events, please let me know so that we can make arrangements for you.

PREFERRED NAME AND PRONOUN. Class rosters are provided to the instructor with the student's legal name as well as "Preferred first name" (if previously entered by you in the Student Profile section of your CIS account, which managed can be managed at any time). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class or on assignments. Please advise me of any name or pronoun changes so I can help create a learning environment in which you, your name, and your pronoun are respected. If you need any assistance or support, please reach out to the LGBT Resource Center. **https://lgbt.utah.edu/campus/faculty_resources.php**

ADDRESSING SEXUAL MISCONDUCT: Title IX makes it clear that violence and harassment based on sex and gender (which Includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

WELLNESS STATEMENT: Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at www.wellness.utah.edu or 801-581-7776.

SAFETY STATEMENT: The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

UNDOCUMENTED STUDENT SUPPORT: Immigration is a complex phenomenon with broad impact—those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles to engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center. Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence. The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families. To learn more, please contact the Dream Center at 801.213.3697 or visit dream.utah.edu.

STUDENT VETERANS: If you are a student veteran, the U of Utah has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M---F 8---5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: http://veteranscenter.utah.edu/. Please also let me know if you need any additional support in this class for any reason.

PLAGIARISM SOFTWARE POLICY: I have elected to use a plagiarism detection service in this course, in which case you will be required to submit your paper to such a service as part of your assignment.

DISCLAIMER: The instructor reserves the right to modify this syllabus to better suit class needs at any time during this semester. Any changes that are made will be immediately communicated via Canvas.