



**Math 1050: College Algebra**  
Fall Semester 2021  
MWF, 8:05 AM-9:25 AM; in zoom

**Instructor:** Predrag Krtolica

**Email:** [krtolica@math.utah.edu](mailto:krtolica@math.utah.edu)

**Office Location:** JWB 121 (but I will not be holding office hours there)

**Zoom Office Hours:** M 12:00 PM-12:50 PM, H 5:00 PM-5:50 PM

### **Required Materials**

The textbook for this course is available at no cost over Canvas.

### **Course Description**

This course covers functions, inverses, and graphs; polynomial, rational, radical, exponential, and logarithmic functions; systems of equations and matrices; applications; arithmetic and geometric sequences and series.

### **Course Outcomes**

1. Sketch the graphs of quadratic and cubic polynomials, rational, radical, exponential, logarithmic, and piecewise functions with or without transformations. Be able to identify important points such as  $x$ - and  $y$ -intercepts, maximum or minimum values; domain and range; and any symmetry.
2. Given the graph of a function, be able to identify the domain, range, any asymptotes and/or symmetry,  $x$ - and  $y$ -intercepts, as well as find a rule for the function if it is obtained from a standard function through transformations.
3. Perform composition of functions and operations on functions
4. Find the inverse of a function algebraically and graphically.
5. For polynomial, rational exponential and logarithmic functions, identify the  $x$ -intercepts, asymptotes, end behavior and domain from algebraic and graphic representations. Convert back and forth between algebraic, graphical and verbal representations.
6. Solve polynomial, rational, exponential, and logarithmic equations and inequalities.
7. Represent and interpret physical world situations using exponential and logarithmic functions.
8. Define  $i$  as the square root of  $-1$  and know the complex arithmetic necessary for solving quadratic equations with complex roots.
9. Perform matrix arithmetic computations.
10. Solve systems of linear and non-linear equations in two or three variables, including the use of Gaussian elimination and matrix inverses in the linear case.
11. Understand sequences and be able to differentiate between geometric, arithmetic and others such as Fibonacci-type sequences, giving direct formulas where available or a numeric representation.
12. Understand series notation and know how to compute sums of finite arithmetic and finite and infinite geometric series.

## University Policies

- 1. *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 this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.
- 2. *University 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](http://safeu.utah.edu).
- 3. *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).
- 4. *COVID-19 Fall 2021 Statement***  
*University leadership has urged all faculty, students, and staff to **model the vaccination, testing, and masking behaviors** we want to see in our campus community.*

*These include:*

- *Vaccination*
- *Masking indoors*
- *If unvaccinated, getting weekly asymptomatic coronavirus testing*

### ***Vaccination***

- ***Get a COVID-19 vaccination*** if you have not already done so. Vaccination is proving highly effective in preventing severe COVID-19 symptoms, hospitalization and death from coronavirus. Vaccination is the single best way to stop this COVID resurgence in its tracks.
- *Many in the campus community already have gotten vaccinated:*
  - *More than 80% of U. employees*

- Over 70% of U. students
- Visit <http://mychart.med.utah.edu/>, <http://alert.utah.edu/covid/vaccine>, or <http://vaccines.gov/> to schedule your vaccination.

### **Masking**

- While masks are no longer required outside of Health Sciences facilities, UTA buses and campus shuttles, **CDC guidelines now call for everyone to wear face masks indoors.**
  - Check the CDC website periodically for masking updates—  
<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/fully-vaccinated-guidance.html>
  - Treat masks like seasonal clothing (i.e. during community surges in COVID transmission, masks are strongly encouraged indoors and in close groups outside).

### **Testing**

- **If you are not yet vaccinated, get weekly asymptomatic coronavirus tests.** This is a helpful way to protect yourself and those around you because asymptomatic individuals can unknowingly spread the coronavirus to others.
  - Asymptomatic testing centers are open and convenient:
    - Online scheduling
    - Saliva test (no nasal swabs)
    - Free to all students returning to campus (required for students in University housing)
    - Results often within 24 hours
    - Visit [alert.utah.edu/covid/testing](http://alert.utah.edu/covid/testing)
- **Remember: Students must self-report if they test positive for COVID-19** via this website: <https://coronavirus.utah.edu/>.

**5. Undocumented Student Support Statement.** 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](http://dream.utah.edu).

**6. Drop/Withdrawal Policies.** Students may drop a course within the first two weeks of a given semester without any penalties. Students may officially withdraw (W) from a class or all classes after the drop deadline through the midpoint of a course. A “W” grade is recorded on the transcript and appropriate tuition/fees are assessed. The grade “W” is not used in calculating the student’s GPA. For deadlines to withdraw from full-term, first, and second session classes, see the U’s Academic Calendar.

7. Other important information to consider including:
  - a. Student Code: <http://regulations.utah.edu/academics/6-400.php>
  - b. Accommodation Policy (see Section Q): <http://regulations.utah.edu/academics/6-100.php>
8. **Student Mental Health Resources**
  - *Rates of burnout, anxiety, depression, isolation, and loneliness have noticeably increased during the pandemic. If you need help, reach out for [campus mental health resources](#), including counseling, trainings and other support.*
  - *Consider participating in a [Mental Health First Aid](#) or other [wellness-themed](#) training provided by our Center for Student Wellness and sharing these opportunities with your peers, teaching assistants and department colleagues*
9. ***Diverse Student Support.*** Your success at the University of Utah is important to all of us here! If you feel like you need extra support in academics, overcoming personal difficulties, or finding community, the U is here for you.

#### *Student Support Services (TRIO)*

TRIO federal programs are targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities.

Student Support Services (SSS) is a TRIO program for current or incoming undergraduate university students who are seeking their first bachelor's degree and need academic assistance and other services to be successful at the University of Utah.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

#### **Student Support Services (TRIO)**

801-581-7188

[trio.utah.edu](http://trio.utah.edu)

Room 2075

1901 E. S. Campus Dr.

Salt Lake City, UT 84112

#### *American Indian Students*

The AIRC works to increase American Indian student visibility and success on campus by advocating for and providing student centered programs and tools to enhance academic success, cultural events to promote personal well-being, and a supportive “home-away-from-home” space for students to grow and develop leadership skills.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**American Indian Resource Center**

801-581-7019

[diversity.utah.edu/centers/airc](http://diversity.utah.edu/centers/airc)

Fort Douglas Building 622

1925 De Trobriand St.

Salt Lake City, UT 84113

*Black Students*

Using a pan-African lens, the Black Cultural Center seeks to counteract persistent campus-wide and global anti-blackness. The Black Cultural Center works to holistically enrich, educate, and advocate for students, faculty, and staff through Black centered programming, culturally affirming educational initiatives, and retention strategies.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**Black Cultural Center**

801-213-1441

[diversity.utah.edu/centers/bcc](http://diversity.utah.edu/centers/bcc)

Fort Douglas Building 603

95 Fort Douglas Blvd.

Salt Lake City, UT 84113

*Students with Children*

Our mission is to support and coordinate information, program development and services that enhance family resources as well as the availability, affordability and quality of child care for University students, faculty and staff.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**Center for Childcare & Family Resources**

801-585-5897

[childcare.utah.edu](http://childcare.utah.edu)

408 Union Building

200 S. Central Campus Dr.

Salt Lake City, UT 84112

*Students with Disabilities*

The Center for Disability Services is dedicated to serving students with disabilities by providing the opportunity for success and equal access at the University of Utah. They also strive to create an inclusive, safe, and respectful environment.

For more information about what support they provide and links to other resources, view their website or contact:

**Center for Disability Services**

801-581-5020

[disability.utah.edu](http://disability.utah.edu)

162 Union Building

200 S. Central Campus Dr.

Salt Lake City, UT 84112

*Students of Ethnic Descent*

The Center for Ethnic Student Affairs offers several programs dedicated to the success of students with varied cultural and ethnic backgrounds. Their mission is to create an inclusive, safe campus community that values the experiences of all students.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**Center for Ethnic Student Affairs**

801-581-8151

[diversity.utah.edu/centers/cesa/](http://diversity.utah.edu/centers/cesa/)

235 Union Building

200 S. Central Campus Dr.

Salt Lake City, UT 84112

*English as a Second/Additional Language (ESL) Students*

If you are an English language learner, there are several resources on campus available to help you develop your English writing and language skills. Feel free to contact:

**Writing Center**

801-587-9122

[writingcenter.utah.edu](http://writingcenter.utah.edu)

2701 Marriott Library

295 S 1500 E

Salt Lake City, UT 84112

**English for Academic Success (EAS) Program**

801-581-8047

[linguistics.utah.edu/eas-program](http://linguistics.utah.edu/eas-program)

2300 LNCO

255 S. Central Campus Dr.

Salt Lake City, UT 84112

## **English Language Institute**

801-581-4600

[continue.utah.edu/eli](http://continue.utah.edu/eli)

540 Arapeen Dr.

Salt Lake City, UT 84108

### *Undocumented Students*

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 that prevent you from 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.

For more information about what support they provide and links to other resources, view their website or contact:

### **Dream Center**

801-213-3697

[dream.utah.edu](http://dream.utah.edu)

1120 Annex (Wing B)

1901 E. S. Campus Dr.

Salt Lake City, UT 84112

### *LGBTQ+ Students*

The LGBTQ+ Resource Center acts in accountability with the campus community by identifying the needs of people with a queer range of [a]gender and [a]sexual experiences and responding with university-wide services.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

### **LGBTQ+ Resource Center**

801-587-7973

[lgbt.utah.edu](http://lgbt.utah.edu) (Links to an external site.)

409 Union Building

200 S. Central Campus Dr.

Salt Lake City, UT 84112

### *Veterans & Military Students*

The mission of the Veterans Support Center is to improve and enhance the individual and academic success of veterans, service members, and their family members who attend the university; to help them receive the benefits they earned; and to serve as a liaison between the student veteran community and the university.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

#### **Veterans Support Center**

801-587-7722

[veteranscenter.utah.edu](http://veteranscenter.utah.edu) (Links to an external site.)

418 Union Building

200 S. Central Campus Dr.

Salt Lake City, UT 84112

### *Women*

The Women's Resource Center (WRC) at the University of Utah serves as the central resource for educational and support services for women. Honoring the complexities of women's identities, the WRC facilitates choices and changes through programs, counseling, and training grounded in a commitment to advance social justice and equality.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

#### **Women's Resource Center**

801-581-8030

[womenscenter.utah.edu](http://womenscenter.utah.edu)

411 Union Building

200 S. Central Campus Dr.

Salt Lake City, UT 84112

### *Inclusivity at the U*

The Office for Inclusive Excellence is here to engage, support, and advance an environment fostering the values of respect, diversity, equity, inclusivity, and academic excellence for students in our increasingly global campus community. They also handle reports of bias in the classroom as outlined below:

*Bias or hate incidents consist of speech, conduct, or some other form of expression or action that is motivated wholly or in part by prejudice or bias whose impact discriminates, demeans, embarrasses, assigns stereotypes, harasses, or excludes*



*individuals because of their race, color, ethnicity, national origin, language, sex, size, gender identity or expression, sexual orientation, disability, age, or religion.*

For more information about what support they provide and links to other resources, or to report a bias incident, view their website or contact:

**Office for Inclusive Excellence**

801-581-4600

[inclusive-excellence.utah.edu](http://inclusive-excellence.utah.edu) (Links to an external site.)

170 Annex (Wing D)

1901 E. S. Campus Dr.

Salt Lake City, UT 84112

*Other Student Groups at the U*

To learn more about some of the other resource groups available at the U, check out:

[getinvolved.utah.edu/](http://getinvolved.utah.edu/)

[studentsuccess.utah.edu/resources/student-support](http://studentsuccess.utah.edu/resources/student-support)

**Course Policies**

*Participation:* participation is not required but it is strongly encouraged. Students who regularly attend my classes perform significantly better than students who rarely attend.

*Electronic Devices in Class:* having your camera on during the lectures is mandatory.

***Communication:***

- All course materials, such as lecture slides, assignments, solutions, grades, etc. will be posted on the Course Canvas site. Class announcements will be done via Canvas. You will be responsible for any information contained in them as well as the information announced in class.
- It is also your responsibility to check your Canvas messages regularly. There will be occasions during the semester that we may need to reach out to you individually (e.g. regarding a grade or assignment) and it is in your best interest to respond promptly.
- Feel free to contact me by email or Canvas message. I will do my best to answer emails promptly. I would like to encourage you to email me only if it is something personal that requires individual attention, if instead you have questions about logistics of the class, course material and assignments, and anything else your classmates may wonder as well, please post a question on the Discussions Board instead. This way the information is shared quickly to the entire class, and each of you can benefit from seeing other classmates' questions.
- I will always do my best to ensure the communication relevant to the course is clear and transparent, it is your responsibility as well to keep yourself updated by regularly checking: the announcements on Canvas, your Umail, the posts on the Discussions Board, and pay attention to the announcements given in class and Discussion Section.
- Students are expected to log in and check Canvas every day for posted announcements and

assignments. Students are also strongly advised to set up notifications for Canvas so they do not miss any important notifications.

**Exam Dates:**

**Exam 1:** 9/24; **Exam 2:** 11/5; **Exam 3:** 11/24; **The final exam** is on December 15, 1:00-3:00 pm. The *only* possible conflicts with this schedule occur if you are also taking Business Core 3010 or 3020 or French 1010, 1020, 2010, or 2020. If you are in one of these classes, work out final exam arrangements with your two instructors within the first two weeks of the semester.

**Official Drop/Withdraw Dates:** The last day to drop classes is Friday, September 3; the last day to withdraw from this class is Friday, October 22. Please check the academic calendar for more information pertaining to dropping and withdrawing from a course. Withdrawing from a course and other matters of registration are the student’s responsibility.

**Holidays:** There will be no class on September 6, October 10-17, and November 25-26.

| Week # | Start | Finish | Schedule Notes    | Sections | Assessments |
|--------|-------|--------|-------------------|----------|-------------|
| 1      | 8/23  | 8/27   |                   | 1.1-1.3  | Quiz 1      |
| 2      | 8/30  | 9/3    |                   | 1.3-1.5  | Quiz 2      |
| 3      | 9/6   | 9/10   | no class 9/6      | 2.1-2.3  | Quiz 3      |
| 4      | 9/13  | 9/17   |                   | 2.4-2.5  | Quiz 4      |
| 5      | 9/20  | 9/24   |                   |          | Exam 1      |
| 6      | 9/27  | 10/1   |                   | 3.1-3.2  | Quiz 5      |
| 7      | 10/4  | 10/8   |                   | 3.3-3.4  | Quiz 6      |
| 8      | 10/18 | 10/22  |                   | 4.1-4.3  | Quiz 7      |
| 9      | 10/25 | 10/29  |                   | 4.4-4.5  | Quiz 8      |
| 10     | 11/1  | 11/5   |                   |          | Exam 2      |
| 11     | 11/8  | 11/12  |                   | 6.1-6.3  | Quiz 9      |
| 12     | 11/15 | 11/19  |                   | 6.4-6.5  | Quiz 10     |
| 13     | 11/22 | 11/26  | no class 11/25-26 |          | Exam 3      |
| 14     | 11/29 | 12/3   |                   | 7.1-7.2  | Quiz 11     |
| 15     | 12/6  | 12/9   | no class 12/10    | Review   |             |
|        | 12/15 |        | 1:00-3:00 pm      |          | Final Exam  |

**Grading Policy (Evaluation Methods & Criteria)**

Semester letter grades will be converted from numerical semester scores (N) as follows:

|                 |                 |                 |
|-----------------|-----------------|-----------------|
| 100 ≥ N ≥ 93: A | 93 > N ≥ 90: A- |                 |
| 90 > N ≥ 88: B+ | 88 > N ≥ 83: B  | 83 > N ≥ 80: B- |
| 80 > N ≥ 78: C+ | 78 > N ≥ 73: C  | 73 > N ≥ 70: C- |
| 70 > N ≥ 68: D+ | 68 > N ≥ 63: D  | 63 > N ≥ 60: D- |
| 60 > N          | :E              |                 |

The numerical grade consists of several components:

- 15% of final grade: Homework. Homework is delivered online through the IMathAS system. These homeworks will be linked through Canvas and are fully online (no file uploads needed). If you think you have caught a mistake in the online homeworks, email me with an explanation of what you think is wrong.
- 15% of final grade: Quizzes. There will be weekly quizzes delivered through Canvas and submitted via file upload. There are 10 quizzes in total, which must be submitted within a given time window. The two lowest quiz scores will be dropped. Quizzes may not be retaken.
- 45% of final grade: Midterms. There will be three midterm exams which are longer than quizzes. These will also be delivered via Canvas and submitted on Gradescope. The lowest midterm exam score may be dropped and replaced by a higher final exam grade. Each midterm is worth 15%. If you do not take an exam, that score will not be dropped -- it's best for you in the course to attempt all the assigned work.
- 25% of final grade: Final Exam. The final exam is a comprehensive exam covering all topics in the course. The final exam grade will replace the lowest midterm score.

It is the student's responsibility to ensure the accuracy of all recorded homework, quizzes, online assignments, and exam grades. Also you should keep as record all your graded assignments. If you see any error in your grades on Canvas, reach out to the instructor as soon as possible, or at the latest within two weeks from when the assignment was returned.