Math 1050 : College Algebra

Section 006, Spring 2017

Time and Location	MWF 1.25PM - 2.45PM, FASB (Frederick Albert Sutton Building) 295.
Instructor	Chee Han Tan (My first name is Chee Han.)
Contact	Office : JWB (John Widtsoe Building) 129. Email : `tan@math.utah.edu` Office Hours : Tuesday 2PM - 4PM or by appointment.
Other Contacts	Course coordinator: Maggie Cummings (`cummings@math.utah.edu`) TA: Maggie Van Gulik (`maggie.vangulik@utah.edu`) SI: Cynthia Munoz (`cynmunoz@gmail.com`)
Course Website	**Canvas** will be used regularly for this course, checking the site often for updates is strongly recommended. If you do not check Canvas regularly, you should have announcements forwarded to an email address that you do check regularly. Either sign in through CIS or go to `https://utah.instructure.com/courses/426551`.
Textbook	**Precalculus, 9th edition, 2013 Larson.** The University of Utah has negotiated special pricing for the text and Webassign. You must purchase the online version of the text with Enhanced Webassign, this costs \$75 and it covers both Math 1050 and Math 1060. Additionally, you may also purchase a loose-leaf version of the text for an extra \$40. The text may be purchased at `http://www.cengagebrain.com/course/1603486`.
Calculators	Calculators will be useful for homework, but they will not be permitted on exams.
Grading	Grades for each student will be calculated using the following formula:

$$\text{Homework } (15\%) + \text{ Quizzes } (7\%) + 3 \text{ Midterms } (3 \times 18 = 54\%) + \text{ Final } (24\%).$$

Your score on the final exam will replace your lowest midterm score or you will receive a 2% bonus to your final exam grade, whichever results in the highest grade. **There will be no make-up exams. Students who miss an exam will receive a "0".**

All homework is to be completed on **Webassign**. Due dates for homework assignments can also be found on Webassign. **Late homework will not be accepted.** You will be given ample time to do your assignments, you may ask me, the SI, or TA questions; you are encouraged to work with other students. You may submit unlimited answers for each prompt. **Please note, homework is a substantial part of your grade for the course (15%), it is to your benefit to do all your homework - partial credit is better than no credit.**

There will be a total of 10 weekly quizzes (Fridays when there is no midterm). They will be approximately 15-20 minutes and given near the end of class. You must be in attendance to take the quiz. **There will be no make-up quizzes but three lowest quiz scores will be dropped.**

There will be 3 in-class midterm exams. The content will be determined based on the pace of the course. Note the time:

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Midterm Exam: February 3rd, March 3rd and April 7th.

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All students are expected to take the comprehensive final exam. The room will be announced during the last week of classes. All students are expected to arrange their personal schedule to allow them to take the exam. Note the time:

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Final Exam: Thursday, April 27th, 2017, 1PM - 3PM.

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Venue: Usual classroom FASB 295.

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Course Objectives

The goal of Math 1050 is to improve quantitative reasoning and prepare for future mathematics learning in Calculus, Linear Algebra and Discrete Mathematics.

Topics to be covered:

Numbers, functions, sequences, series, counting problems, graphs of functions, inverse functions, polynomials, rational functions, n-th roots, exponential functions, logarithms, piecewise defined functions, matrices and matrix equations.

Expected Learning Outcomes:

1. Sketch the graph of basic polynomials (second and third order), 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. For rational functions, be able to identify x and y intercepts, horizontal, vertical and oblique asymptotes (end behaviour) and domain. Use information to sketch graphs of functions.

3. For polynomial functions, be able to identify all zeros (both real and complex), factors, x and y intercepts, end behaviour and where the function is positive or negative. Use information to sketch graphs of functions.

4. Understand the connection between graphic, algebraic and verbal descriptions of functions.

5. 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.

6. Define i as the square root of -1 and know the complex arithmetic necessary for solving quadratic equations with complex roots.

7. Solve absolute value, linear, polynomial, rational, radical, exponential and logarithmic equations and inequalities.

8. Find the inverse of a function algebraically and graphically.

9. Perform composition of functions and operations on functions.

10. Understand sequences and be able to differentiate between geometric, arithmetic and others such as Fibonacci-type sequences, giving direct formulas where available.

11. Understand series notation and know how to compute sums of finite or infinite arithmetic or geometric series.

12. Solve systems of equations (3×3 linear) and nonlinear equations in two variables.

13. Make sense of algebraic expressions and explain relationship among algebraic quantities including quadratic, exponential, logratihmic, rational, radical and polynomial expressions, equations and functions.

14. Represent and interpret "real world" situations using quadratic, exponential, logarithmic, rational, radical and polynomial expressions, equations and functions.

Additional Resources

Mathematics Tutoring Centre : The math department offers free drop-in tutoring for students, at the T.Benny Rushing Mathematics Student Center. The center is located underneath the walkway between LCB (LeRoy Cowles Building) and JWB (John Widtsoe Building), and can be accessed by entering either building.
Opening hours : Monday - Thursday 8AM- 8PM and Friday 8AM - 6PM.
Website : `http://www.math.utah.edu/ugrad/mathcenter.html`

Mathematics Department Video Lectures : Video lectures are available at `http://www.math.utah.edu/lectures/math1050.html`

ADA Statement   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 Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

Other Policies

1. I will expect respectful behaviour in the classroom. Examples of disrespectful behaviour include but are not limited to texting, using cell phones, laptops, tablets or any other electronic devices, chatting with a friend during class, coming late, or leaving early. If your behaviour becomes distracting to any person in class (including myself), I may decide to ask you to leave the class.

2. Cellphones and laptop computers are prohibited in the classroom. If you are using a tablet or iPad or some similar device to take notes and the screen lies parallel to your desk, that is fine.

3. **Don't be afraid to ask questions!** Most of the time, there might be at least 8 other students who have the same questions as you. You are encouraged to speak to me immediately after the class about any questions concerning the course materials, although I very much prefer you to do that during the class, as this will benefit the entire classroom.

4. If you have questions about the quiz grade, or you want to appeal the grading, you must bring it to me within one week of the return of the quiz. I am happy to look over your appeal and/or questions and give you feedback to benefit your learning.

5. **It is your responsibility to notify me if there are any emergencies that prevents you from attending the exam or turning in homework.** I will try my best to accomodate. The best way to contact me is by email (refer above) or in office hours. Bear in mind that I do not check my email regularly during the weekend.

Semester Letter Grades   Semester letter grades will be converted from the numerical semester scores N as follows:

$93 \leq N \leq 100$	:	A	$73 \leq N < 78$	:	C
$90 \leq N < 93$	:	A-	$70 \leq N < 73$	:	C-
$88 \leq N < 90$	:	B+	$68 \leq N < 70$	:	D+
$83 \leq N < 88$	:	B	$63 \leq N < 68$	:	D
$80 \leq N < 83$	:	B-	$60 \leq N < 63$	:	D-
$78 \leq N < 80$	:	C+	$N < 60$	:	E

Disclaimer   This syllabus is not a binding legal contract. I reserve the right to make changes as I see fit at any time, but all adjustments will be announced.