MATH 1050 SYLLABUS – COLLEGE ALGEBRA – Spring 2018

COURSE: Math 1050-070 is a 4 credit hour math class. You can expect to spend **at least two to three hours** on homework per one hour of class time. Math 1050-071 meets Monday and Wednesday evenings from 5:30 – 7:30 pm at the Sandy Campus.

PREREQUISITE: Must have completed Math 1010 or equivalent with a C or better, or have a current Math ACT score of 23 or higher, or an Accuplaeer score of 60 or higher.

FACULTY: Sarah Jean Hoggan, BS (mathematics), MEd (Phi Kappa Phi)
CONTACT ME: hoggan@math.utah.edu, or email me inside of Canvas, or by appointment before/after class. Do NOT email me inside of WebAssign.

COURSE DESCRIPTION: This course begins with a review of intermediate algebra. It progresses to functions, their graphs and inverse functions. This is followed by a comprehensive study of polynomial and rational functions. A study of exponential and logarithmic functions is next. Six methods for solving systems of equations plus matrices are presented. The course concludes with sequences, series and the Binomial Theorem.

COURSE OBJECTIVES: Improve quantitative and logical reasoning, and prepare for future math learning in calculus, linear algebra, and discrete mathematics.

TEACHING and LEARNING METHODS: Lecture, homework, PowerPoint slides, quizzes and Departmental Videos. The math department provides 'Lectures' on the various topics at http://www.math.utah.edu/lectures/math1050.html. In case a class is missed or more in-depth study would be helpful.

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, identify x and y intercepts, vertical, horizontal and oblique asymptotes (end behavior), and domain. Use information to sketch graphs of functions.

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

4. Understand the relationships 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 or a numeric representation.

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

12. Solve systems of equations (3 x 3 linear) and non-linear equations in two variables.

13. Make sense of algebraic expressions and explain relationship among algebraic quantities including quadratic, exponential, logarithmic, 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.

HOMEWORK: Assigned homework will be done online through WebAssign. Plan time in your schedule to complete the homework on a daily basis. If you are having trouble with a particular type of problem, reworking the assigned problems plus additional problems may be helpful. Homework is due the next class following the lecture.

QUIZZES: There will be a total of 10 weekly quizzes. You must be in attendance to take the quiz. You may drop three quizzes; therefore, no make-up quizzes will be given.

EVALUATION: Nine weekly quizzes taken from the homework, three midterms and a comprehensive final will be given. No make-up exams will be given! Any special arrangements must be made in **ADVANCE.** Each exam will be worth 100 points. A two-hour departmental Final will be given. Calculators will NOT be allowed on Midterm exams or the Final exam. The Final will be worth 200 points.

GRADING: Homework is worth 15%, quizzes are worth 7%, the three Midterms are worth 18% each, and the Final is worth 24% of your grade. All students must take the Final. 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. You may NOT drop the final.
Midterms (Wednesdays): February 14, March 14, April 18
Final: Friday, April 27 from 12 – 2 pm.

Grades will be given according to the following schedule:

PERCENT	GRADE	PERCENT	GRADE
93-100	A	73-76	C
90-92	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	63-66	D
80-82	B-	60-62	D-
77-79	C+	0-59	E

TEXT: *PRECALCULUS,* 9th Edition, 2013, Larson, ISBN: 9781133949015. The University of Utah has negotiated special pricing for the text and WebAssign;
- For $75 you may purchase the online version of the text with Enhanced WebAssign. This price covers both 1050 and 1060.
- OPTION: if you would like, you may also purchase a loose-leaf version of the text for $40.

The text may be purchased at: http://www.cengagebrain.com/course/2765767 .

COURSE OUTLINE: The homework is on a separate page.
- Appendix A: Sec. 3,6
- Chapter 1: Sec. 1-9
- Chapter 2: Sec. 1-7
- Chapter 3: Sec. 1-5
- Chapter 7: Sec. 1-3,5
- Chapter 8: Sec. 1-4
- Chapter 9: Sec. 1-3

TUTORING: Free Math Lab in the basement of the Math Building (JWB). Open M-H 8 am – 8 pm and Friday 8 am – 6 pm. There are also study areas free of tutors, a computer lab, group study rooms available through reservations. For paid tutoring ($7/hr) visit the Tutoring Center in Rm. 330 SSB, 801-581-5153. Free e-tutoring can be accessed in Canvas on the left menu.

CALCULATORS: A scientific calculator is sufficient. Calculators may be helpful on homework. **Calculators will NOT be allowed on exams!** Cell phones will not be allowed.

ATTENDANCE: Like any college course, attendance is not "mandatory." However, concepts will be thoroughly explained and reviewed in class, thus it is to your absolute benefit to attend all classes. Students who regularly attend score on average 30% higher on exams than those who do not.

ADA: "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 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations."

FACULTY RESPONSIBILITIES: "All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students 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, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content."

CLASS ETIQUETTE: **Dress -** The educational process is facilitated by professional behavior on the part of all; therefore, students are encouraged to dress appropriately for class. **TURN CELL PHONES OFF/VIBRATE BEFORE COMING CLASS! DO NOT** go outside in the middle of class to make or answer a phone call. **DO NOT TEXT MESSAGE** during class! Do not talk while I am lecturing or while other students are asking questions. DO NOT come to class late or leave early. It is not only inconsiderate, but also quite disruptive to other students.