

**Math 120**  
**PRECALCULUS: ALGEBRA**  
**Fall 2009**

**Instructor:** Dr. Leanne Robertson

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**Office hours:** M 3:40-5:10, T 1:25-2:25, W 3:40-4:40, F 10:30-12:00, and by appointment

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**Course Description:** MATH 120 is a study of functions. Topics include polynomial, rational, exponential, logarithmic, composite, and inverse functions as well as the theory of polynomial equations, conic sections, and other selected topics. The course provides review and extension of basic algebraic methods for solving equations and inequalities. Problem solving skills, mathematical writing, and accurate algebraic computations are all discussed and emphasized.

**Class Schedule:** The class meets MTWF from 2:30-3:35 PM in BANNAN 301.

**Prerequisite:** MATH 110 (Functions and Algebraic Methods) with a grade of C- or better, or a score of 15 – 24 on the algebra part of the Mathematics Placement Exam, or SAT MATH: 540 - 630, or ACT MATH: 23 – 27. **This prerequisite is very important for your success in MATH 120.**

**Goals:** The mathematics department has established the following goals.

Goals for students in all mathematics courses. Each student will:

- develop the ability to think abstractly and critically;
- improve the ability to communicate mathematically through writing and speaking;
- represent abstract concepts pictorially;
- use mathematics as a modeling and problem-solving tool;
- appreciate and use appropriate technology, becoming proficient with, but not dependent on, symbolic graphing tools or mathematical software.

Additional goals for students in Math 120. A student who successfully completes Math 107 will:

- Master skills and techniques necessary for success in calculus and in other disciplines.
- Further develop problem solving and critical analysis abilities.
- Be able to write solutions to problems clearly and carefully.
- Develop visualization skills: graphic approaches; graphical analysis and interpretation.
- Use functions to model and solve many types of real-life problems.
- Become proficient with, but not dependent on, the use of graphing calculators.
- Improve the ability to work with others in cooperative learning activities such as projects and group quizzes.
- Study additional topics such as matrices, conics, sequences, probability, and the binomial theorem.

**Text:** *Precalculus: Functions and Graphs (3<sup>rd</sup> edition)*, by Mark Dugopolski. Publisher: Addison Wesley. The course works carefully through Appendices 2 and 5, Chapters 1-4, and parts of Capters 8, 9, 10, and 11.

**Calculator:** A graphing calculator is also required. You may use any type of graphing calculator, but a TI-84 will be used in class for demonstrations.

**Core Curriculum Requirement:** This course satisfies the university's Core mathematics requirement, the goal of which is to develop students' facility in "critical and creative thinking, in writing and speaking skills, and in mathematical literacy." The course emphasizes active learning with class meetings consisting of discussion, informal conversation-style lectures, and group work. Assignments and class activities are chosen to help students develop speaking, writing, and analytical reasoning skills, as well as a mastery of the topics at hand.

**Homework:** Homework is due on Tuesdays and Fridays at the beginning of class. Late homework is not accepted, but your two lowest homework scores will be dropped. Collaboration on solving homework problems is strongly encouraged. More precisely, you may work together and share information verbally, on scratch paper, or at a blackboard, but you are obligated under Seattle University's Academic Honesty Policy (see [www.seattleu.edu/regis](http://www.seattleu.edu/regis) and click on the "Policies" link) not to share the homework papers that you plan to submit. Under no circumstances should a solution be copied from someone else.

**Project:** There will be one group project, tentatively due on Friday, Nov. 13. Project description, guidelines, and firm due date will be handed out at least a week before the project is due.

**Quizzes:** There will be seven short quizzes. Make-up quizzes will not be given, but your lowest quiz score will be dropped. Quizzes will be given on Tuesday, Sept. 29; Wednesday, Oct 7, Oct. 21, and Oct. 28; Tuesday, Nov. 10; and Wednesday Nov. 18 and Dec. 2.

**Tests:** There will be three in-class tests and a two-hour cumulative final exam. If you miss one test, then the final exam will serve as a make-up test. A score of zero will be given for any additional missed tests. If you take all three tests and your grade on the final exam is higher than your lowest test grade, then your final exam grade will replace your lowest test grade.

**Test 1:** Tuesday, October 13

**Test 2:** Tuesday, November 3

**Test 3:** Monday, November 23

**Final:** Wednesday, December 9, 2-3:50 PM

**Participation:** Students are expected to prepare for, attend, and participate in all class meetings. To prepare for class you should look over your notes from the previous class and try the assigned problems. I begin class by asking for questions, so prepare a question to ask if you are confused about something from the last class or stuck on a homework problem. You should also prepare by reading assigned material. Even reading for only 10-15 minutes

for familiarity can significantly help you understand the material when we discuss it in class. Once prepared, come to class on time, ready to learn and participate, and with your **cell phones turned OFF**. Using your cell phone during class will have a negative effect on your participation grade. Participating in class includes answering and asking questions, offering ideas and conjectures, listening and working effectively with your group during group problem solving, doing assigned readings, volunteering to do a problem on the board, and simply being alert and paying attention in class. Participating and talking are not necessarily the same thing.

**Grading:** The points for the course will be distributed as follows:

Homework and Project	50 points
Quizzes (20 points each)	120 points
Participation and Attendance	10 points
Midterm tests (80 points each)	240 points
<u>Final exam</u>	<u>130 points</u>
Total	550 points

Based on the above point distribution, students are guaranteed the following course grades, *including + and -*. The percentages may be lowered, but they will not be raised.

A: 90% and above	C: 65% and above
B: 80% and above	D: 55% and above

**Assistance:** There are a number of people who want to help you succeed in this course. When you have difficulties with a concept or just want to discuss an idea further, you are strongly encouraged to seek help from:

1. Your instructor: Come to my office hours, make an appointment to see me, or just drop by if my office door is open. I want to help each of you to do your best.
2. Your classmates: Many students learn the most when they work with others. You will often be required to work together in class, and I hope you will study together outside of class and cooperate on homework. Ask each other lots of questions. This even benefits students who are comfortable with the material – you know you really understand something if you can explain it to others.
3. The Math Lab: You may drop by ENGR 300 any time it is open to receive help (hours will be posted and announced in class).
4. The Learning Center: The center is located in Loyola 100 and provides services for all SU students to help them get the most out of their education. The Learning Center provides one-on-one consulting about study skills, arranges course tutoring, and offers a variety of interactive workshops. It also provides services for students with learning, physical, and psychological disabilities. Please make an appointment with the Learning Center immediately (phone 296-5740) if you think their services could contribute to your success at Seattle University.

