Math 153 Fall 2022

Precalculus I

Online

Instructor: Dr. Yvonne Chueh
Office: SAMU 118 I **Phone**: 963-2124
E-mail: chueh@cwu.edu
Office Hours: M-F 9:00-9:50, and by appointment. My daily schedule is posted online: http://www.cwu.edu/faculty/chueh under *Teaching* tab. You are *always*, most *welcome*, and *encouraged* to contact me for a question or come to my office hour.

Course Description

Math 153 is a 5-credit course designed to develop both the concepts and the procedural skills in advanced algebra that will prepare you for the study of Calculus. There will be problem solving, analysis, and communication required in addition to algebraic, graphical, and numerical approaches to the mathematics we study. Upon successful completion of this course, you will be able to demonstrate understanding of the following topics: functions, including operations, compositions, and graphs; and specific features and applications of linear, quadratic, exponential, logarithmic, polynomial, and rational functions.

Goals and Objectives

Our primary objective is to **grow your understanding, proficiency, and practical use** of the following:

1) The concepts and methods for understanding functions in both algebraic and graphical form (KNOWLEDGE)
2) The analysis and interpretation of functions and their possible applications (ANALYSIS)
3) The choice and application of appropriate functions to "model" the world issues around you (INFERENCE)
4) The communication of the results to others (EVALUATION)
5) **5-STEP How Novice Learn-- Engaging, Exploring, Explaining, Extending, Evaluating to achieve concept invention and innovative applications**

Required Text

Precalculus by Sullivan, 11th custom edition for CWU with ***Vital Source in Canvas My Textbook.*** To access MyLab and Mastering for homework and tests you must log in Canvas, click My Textbook and launch the course EACH TIME.

Required Chapters: In order to meet the Math 153 Student Learner Outcomes, instructors must cover (most of) the following: Section 1.4, Chapters 2, 3, 4, and 5.

Optional Sections/Chapters: I may cover other parts of Chapter 1 or integrate some of this material into later parts of the course as necessary. Sections 5.8 and 5.9 are also optional. **Reading in advance of the text material is essential to good performance in this course.**

Required Calculator/Computer

You will need a TI83 or TI84 calculator both in class and during exams that performs basic calculations to allow your work done efficiently and validated. You can use a laptop or tablet computer (highly recommended) or university lab computer to learn to use a Free Graphing tool available online at https://www.desmos.com/. I will be demonstrating and requiring you to use this handy tool to enhance deeper and holistic understanding. To help you achieve a mastery level on the fundamental concepts and skills, you will learn to solve problems without as well as with the proper technology.

Teaching Philosophy and Course Expectations

New learning occurs most effectively when it is based on what students *already know*, when students actually '*do*' real science, and when they become aware of *how* they learn, not just *what* they learn Donovan, 2005). Learning is a deliberate and conscious decision, one that involves breaking established neural patterns and creating new ones. To best facilitate growth, my expectations are for you to:

- ***Think critically***. This course will require critical thinking. People that analyze, infer, evaluate, and make reasoned judgments do better in college, make better daily decisions, and have greater professional success. Developing critical thinking should be a key goal of every student.
- ***Apply yourself.*** This course will take a lot of time and energy. If you have high learning expectations, that is what you will achieve. Success in this course will require significant effort (several hours of study time for each hour of class). Depending on your mathematical background, you may need to spend more or less study time. Attend class regularly, be on time, and budget your time to accommodate the workload.
- ***Ask questions***. Statistics is fascinating, but it can be confusing, too. Ask questions. If you aren't clear on something, there are likely others who are equally unclear on the topic.
- ***Be informed***. People sometimes use information to manipulate others' behaviors and decision-making in ways not always to your benefit. If you don't understand the mathematical basis of a claim about data, you can't make an informed decision about it. Be curious; try and found out all you can about a topic before you make a decision that may profoundly affect your life.
- ***Be respectful***. We will discuss some sensitive and controversial issues in this course. Everyone will respect others' right to express their opinions even if you disagree. Respectful discourse is a minimal expectation of every student.
- ***Communicate clearly***. Effective written and oral communication indicates an intelligent mind. Clarity, proper format, spelling, and grammar are expected of every student.
- ***Use common sense***. Cheating on assignments or tests, plagiarizing others' work, and turning in late assignments is unacceptable. Any infractions may result in a zero for the assignment, a failing course grade, and the possibility of disciplinary action by the university. I won't accept *anything* late unless you have written documentation from an appropriate source or have made prior arrangements with me. If you have a problem that prohibits you from turning something in on time, let me know ahead of time. In all instances, communicate with me so we can prevent problems.

  I have a pre-set high expectation for each student's self-motivation and work ethics, but such a high standard shouldn't transform to intimidator or source of fear to ask questions. All questions are dumb but all questions are not dumb once got figured out and learned. I would rather ask a lot of dumb questions in first place and learn a dumb great deal of knowledge before the test day than pretending I know everything already assuming all the knowledge will fly into my mind and work out on their own! I will be always available to entertain all of your questions and appreciate the opportunity to guide you. Frequent question asking translates to high test score and professionalism score for this course.

Assessment Method	**Value**
Online Homework (MyMathLab via Canvas link)	35%
In Class Work or Quiz (individual or in group)	15%
Four Chapter Tests (Choose the best three)	30%
Professionalism and Attendance	5%
Final Exam	15%
Total	100%

Final grades will be assigned according to the following scale:

	A 100-93%	**A-** 92.9-90%
B+ 89.9-87%	**B** 86.9-83%	**B-** 82.9-80%
C+ 79.9-77%	**C** 76.9-73%	**C-** 72.9-70%
D+ 69.9-67%	**D** 66.9-63%	**D-** 62.9-60%

F 59.9% and below (You should not get this grade if you come to every class and follow the homework schedule.)

Explanation of Assignments and Activities

In Class lecture: I will highlight the key definitions, concepts, theorems, formulas with examples during the lecture. It is beneficial to take notes while listening and processing the information received. I will also do my best to post lecture notes for your preview or review. In-class work will be derived from the lecture.

In Class Work: There will be in-class work and activities related to lectures and textbook reading. You will be graded according to your in-class engagement and group-participation on a regular basis. The in-class work will be due at the end of class period, but extended hours might be given as a case by case permission. No in-class work can be made up for any circumstances due to absence. If you miss the class, then please still do the homework and make up by further reading. You can borrow the notes from your per classmates and ask questions during office hours. Unless you have to miss a lot of days, missing one or two in-class work will not significantly affect your letter grade but you still need to make up the content you have missed by studying and asking questions.

Tests: Tests will consist of a combination of concepts, computations, interpretations, and problem solving/application questions. Any changes to the tentative test week will be announced and the test date will be determined a week in advance. Make-up tests must be arranged ahead of time unless you can document an unexpected circumstance beyond your control that prevented you from taking the test. For instance, in the case of illness, a doctor's note will be required. All make-up tests must be requested as early as possible. Tests requested more than 24 hours after the scheduled test will be given only in extreme extenuating circumstances (e.g. hospitalization, jail, etc.)

The final exam is cumulative, and must be taken at the designated time.

Homework: Online Homework should be attempted through Pearson's MyMathLab platform featuring step-by-step solutions and tutoring, and weblink to contact the instructor (me) instantly when you encounter a trouble or question. To access MyMathLab homework, you must use the Canvas and click "My Textbook" on the left penal of Canvas Math 153 Course and then follow the Student link to the assignments and etext for content reference. It is expected that you will do the homework problems on a daily basis although the official due date is set to the end of each week for scoring and flexibility for contingent events. To aid the battle against procrastination, questions about the previous day's homework, and only the previous day's homework, will be taken at the beginning of class each day. Of course, I will happily take any and all homework questions during office hours. Keeping up with the homework is one of the best things you can do to help yourself succeed in this course!

General Course Policies

Daily attendance is expected and considered necessary for success. If you need to miss class for some reason, you should try to contact your professor in advance. It is your responsibility to find out what was covered on days you were absent, either from a classmate or from your professor. You are responsible for any announcements made in class regarding homework, exams, and quizzes, whether or not you are present. Please bring your calculator to each class meeting.

All work handed in for the course must be written neatly, legibly, clearly, using correct mathematical notation, and with sufficient explanation. A good rule of thumb is to write your solution so that a classmate who knows roughly what's going on in the course but doesn't know how to do this particular problem can understand your solution. As a side benefit, this makes it much more likely that you will be able to understand your solution when you go back to study for exams or the final! The bottom line: for any written work handed in for the course, including lab write-ups, exams, and quizzes, **you must show the critical thinking (evaluating, inference, analytical) elements of your work**.

Part of this class involves the writing of test solutions. These must always represent your own work. The taking of work from other sources, including your classmates, is plagiarism, and is strictly prohibited by the university's conduct code. If you commit plagiarism on a lab assignment once, you will receive a "0" for that assignment, and a note will be sent to the department chair. If you commit plagiarism a second time, you will automatically fail the course.

Students with disabilities who wish to set up academic adjustments in this class should give me a copy of their "Confirmation of Eligibility for Academic Adjustments" from the Center for Disability Services as soon as possible so we can discuss how the approved adjustments will be implemented in class. Students without this form should contact the Center for Disability Services, Bouillon 205 or dssrecept@cwu.edu or 963-2171.

Exam Policy

Because of the timely nature of the chapter tests, no make-ups will be given. For missed test, a grade of zero will be assigned unless you contact me before the scheduled time and provide an acceptable excuse. A weighted average of your scores on the remaining tests will be used for the missing score. Final examination policy is as established by the Dean of Students.

Incompletes:

An "I" is appropriate only if you have finished almost all of the course requirements, and have a good chance of completing the course without re-enrolling. (Example: missing the final exam due to illness.) The course must be completed within a year; otherwise, the "I" reverts to an "F."

Class Attendance

All students are responsible for actively participating in all classroom sessions in a positive, sensitive, and contributory manner. Please note passivity in discussion/response will be equally as noticeable as active response and discussion in class for the grading reference. In each class meeting session **(worth of 2 points)** observed passivity in joining class discussion will result in a "Zero" point on this category.

See Attendance Policy: Extra credit points will be awarded to those students who do not miss class or are absent once. Absences will NOT BE EXCUSED without a published obituary or medical note from health care provider. Documentation will not be accepted until it is officially confirmed by the professor. **Repeated late arrivals / early departures will result a drop of the letter grade.**
If you are an athlete and have games or practices scheduled during class, you must present appropriate documentation that will excuse you from class. Please consider taking the class at another time if you cannot be here on a timely and consistent basis.
Please be on time for class. If you are late, have the courtesy not to disrupt the learning environment.

Professionalism

Punctual attendance is required as part of the **Professionalism** requirement. You need to be in class to earn credit.

- Informal assessment on participation: We will treat each other with courtesy, cordial civil manner and sensitivity, flexibility. This "Professionalism" category refers to one's chosen actions, attitude, and choice of words in the public, during class discussion, in writings, through course assignments, in forms of communications on your grades or sharing personal opinions. This category is evaluated according to the instructor's discretion.

- When class in session, electronic device of all sorts are required to ***turn off and put away out of sight***. Any of the following disruptive behaviors will result in **5%** taken off in the final grade ***each time of incident***: Playing computer games, repeated early departure and late arrival, cell phone disruptions, ***electronic texting***, ***surfing internet***, reading the newspaper, grading papers or projects, studying for exams, working on other class assignments, engaging in ***incessant talking of a social nature***, and / or (but not limited to) behaviors that disturb the learning environment for other students. Points will be taken off by the instructor's discretion (No warnings given). Inappropriate and unprofessional academic behaviors will be reported to CARR (Committee for Academic Recruitment and Retention) for advisement and improvement plan.

To earn all 5% professionalism and attendance points you must exhibit to a HIGH DEGREE the following:
- Collegial Support (1%)
- Positive Attitude (1%)
- Perfect Attendance (1%)
- Active Participation (1%)
- All materials complete & on time (1%)

ACADEMIC POLICIES & PROFESSIONAL PROTOCOL

The following policies and protocols have been established based on university policies and state and federal laws. They are equally binding for all students enrolled in each of my classes.

A. Equal Educational Opportunity:

Central Washington University seeks to provide reasonable accommodations for all qualified individuals with disabilities. Accommodations are intended to minimize the functional limitations of a disability and provide the student equal access to the educational process. Please inform me how I might support you in this regard.

B. Discrimination, Intimidation, & Harassment:

Hate speak and racist or sexist dialogue and behaviors will not be tolerated. The right of all students to equal access of the course content in an environment free of prejudice, discrimination, and harassment will be respected and upheld. All illegal behavior will be reported to the proper municipal and university authorities.

C. Professional Participation:

The nature of the course requires that each student be treated with respect, dignity, and sensitivity. While we can agree to disagree in a professional manner, all students are responsible for actively participating in all classroom activities in a positive, sensitive, and contributory manner. **Each class members' professionalism will be evaluated based on the instructor's discretion.**

Students will also be graded on their active, professional participation**. Please turn off your electronic devices completely during class session.** Be advised you will be marked down **without warning** for playing computer games, checking or looking at mobile phones, watching DVDs, talking on the phone, reading the newspaper, grading papers or projects, studying for exams, working on other class assignments, engaging in incessant talking of a social nature, and / or (but not limited to) behaviors that disturb the learning environment for other students.

D. Attendance
If you are an athlete and have games or practices scheduled during class, you must present appropriate documentation that will excuse you from class before the events take place. A coach or faculty member must officially confirm the documentation.

E. Late Assignments:

Late assignment will not be accepted. No exceptions will be made once deadlines are established. Email submission will not be accepted. Please refer to the specific instruction for submission in the Canvas weekly modules.

F. Academic Integrity:

All cheating, plagiarism and forgery will be referred for disciplinary action and automatically result in an "F" for the course. You are obligated to cite all electronic or bibliographic references for works that are not authored or created by you. Please use the format outlined by the American Psychological Association. If for some reason you

do not have a complete reference for a document, do the best you can by providing an author, a date, a workshop site, etc. If a document has been translated, please give credit to the person whose talents made it readable to you or others.

G. Sexual Harassment/Equity/Diversity:

As your instructor, I am committed to creating and sustaining a safe and inclusive environment for learning. I expect you, as students, to share this commitment with me as we have a shared responsibility to treat each other with dignity and respect. Mutual respect and nondiscrimination includes freedom from sexual harassment. CWU policy defines sexual harassment as unwelcome, sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature under particular conditions. Title IX considers sexual harassment to be a form of discrimination. If you experience sexual harassment, or know someone who is being sexually harassed, you are encouraged to report concerns to me, another faculty member or employee, or to Gail Farmer, Equal Opportunity, at 509-963-2206, farmer@cwu.edu, Bouillon 205. Complete policies are available online at www.cwu.edu/hr.

H. Disability statement:

Students who have special needs or disabilities that may affect their ability to access information or material presented in this course are encouraged to contact me or the Center for Disability Services (cds@cwu.edu, 963-1202, Bouillon 140).

All violations of the student code will be reported to the Department of Mathematics, College of the Sciences, Vice President for Student Affairs & other CWU departments for disciplinary action.

Schedule of Topics and Assignments

A tentative list of timing of topic coverage and tests is presented below. Due to the intensive nature of the course, and variability in student backgrounds and interest, it is possible we may deviate from this schedule. Please stay tuned with the announcements in class and in Canvas system.

Week	Chapter	Topics (Reading Assignments)
1 9/21-23	1	Distance, Midpoint, Intercepts, Symmetry, Lines, Circles
2 9/26-30	2	Functions, Graphs, Properties, Piecewise, Transformations, Models
3 10/3-7	2, 3	Review, Test 1 **(covering Chapter 2)**
4 10/10-14	3	Linear Functions, Quadratic Functions
5 10/17-21	3	Properties, Inequalities, Models
6 10/24-28	4	Review, Test 2 **(covering Chapter 3)**

7 10/31-11/4	4	Polynomial Functions, Rational Functions
8	4, 5	Properties, Graphs, Zeros, Inequalities
11/7-11		Review, Test 3 **(covering Chapter 4)**
9 11/14-18	5	Composite Functions, Inverse Functions, Logarithmic Functions
10, 11 11/21-25 11/28-12/2	5	Exponential Functions, Financial Models
		Review, Test 4 **(covering Chapter 5)**
12 **12/5-9**		**Final Exam (all chapters covered in Tests 1~4)**