

Metropolitan State University
College of Arts and Sciences
MATH 210-01 Calculus I

Term: Summer 2015
Meeting: Thursdays 6—9:30 pm
Instructor: Dr. Pangyen Ben Weng, Associate Professor of Mathematics
Email: Pangyen.Weng@metrostate.edu

Course Description: Since its beginnings, calculus has demonstrated itself to be one of humankind's greatest intellectual achievements. This versatile subject has proven useful in solving problems ranging from physics and astronomy to biology and social science. Through a conceptual and theoretical framework this course covers topics in differential calculus including limits, derivatives, derivatives of transcendental functions, applications of differentiation, L'Hôpital's rule, implicit differentiation, and related rates.

Prerequisite: C- or better in Precalculus, or placement at equivalent levels.

Calculators: Graphing calculators are recommended for learning this class, but they are NOT allowed in quizzes or exams unless otherwise notified.

Course Material: *Student Access Kit to MyMathLab* is required for this course. (The textbook, *Thomas' Calculus: early transcendentals, by Weir, Hass, and Thomas, 12th ed.*, is available online through MyMathLab.)

Flipped-classroom Procedure: For each lesson, students will go through the following steps:

1. Before class meeting: viewing the video lessons and completing Homework A.
2. During class meeting: working as a group on advanced problems.
3. After class meeting: completing Homework B. There is also a quiz at the next class meeting.

Video Lessons: All the video lessons can be accessed from the instructor's website: URL:

<http://faculty.metrostate.edu/wengpa/Teaching/MATH210/MATH210VideoLessons.html>

MyMathLab: The course code is **weng00612**. Every student needs to purchase an access kit, which allows him/her to create a student account. Students may continue to use their accounts in Calc II and III, if their instructors in these courses also require MyMathLab.

Homework: Mathematics is not a spectator's sport. Solving problems independently and as much as possible is the only way to strengthen your math understanding and skills. Homework is an important part of your learning: expect to spend 8 to 10 hours each week on assignments. There are two worksheets for each lesson. Homework A is to be completed before the class meeting, and homework B is for after class. **No late homework will be accepted.** All homework assignments are online through MyMathLab.

Quiz: Quizzes mainly consist of problems in the homework. **No make-up is allowed.**

Exams: There are three exams, and each one is 3 hours long. No calculator or any kind of computing device is allowed. No notes, books or any kind of help is allowed. The passing score of each exam is 70 or above. Unless the instructor has been contacted and provided with legitimate reasons, students who are absent from an exam will receive a score of 0. Students who fail Exams I or II must make up within 10 days of the original exam and will receive up to 70% of the full credit. Students must have a passing Exam I to be eligible for Exam II, and a passing Exam II for Exam III.

Testing Center: Phone: 651-793-1460; email: testing.center@metrostate.edu

Course Requirements and Grading Policy: Students must score at least **50% in Exam III and 70% in homework** to be eligible for a passing grade. Grades are determined by quizzes (7%), homework (18%) and exams (25% each). Letter grades are given based on the following scale.

Score	[0,60)	[60,70)	[70,73)	[73,76)	[76,80)	[80,83)	[83,86)	[86,90)	[90,93)	[93,100]
Grade	F	D	C-	C	C+	B-	C	B+	A-	A

Policy on Academic Integrity: The Metropolitan State University Student Handbook states “*In simple terms, plagiarism is using another person's words or ideas and presenting them as your own, without acknowledging the original source. This is a serious academic offense. Academic sanctions can include receiving a failing grade for an assignment or an entire course.*”

Assignments and exams are to be completed independently unless specified otherwise. Copying and/or utilizing another person’s work in order to complete your assignments or exams constitutes plagiarism. In situations where I suspect academic dishonesty, I reserve the right to either reassess your understanding of the material or assign a grade of 0 points. Repeated offenses will result in a grade of F for the entire course. For additional information on the university’s policies regarding plagiarism, please refer to the student handbook found at <http://www.metrostate.edu/msweb/pathway/gateway/handbook/handbook.html>.

Classroom Diversity: The instructor strives to provide a welcoming learning environment to students of diverse backgrounds with diverse learning needs. Students who have questions or concerns about the course policy or how the course is conducted are encouraged to discuss them with the instructor.

Students with Disabilities: Special accommodations can often be made for those with learning disabilities. Students who have or may have documented learning disabilities are recommended to contact the instructor as well as the Disability Services Office at (651) 793-1540 or (651) 772-7687.

Email Communication: In accordance with University's policy, this class will use your university email address (name@metrostate.edu) to communicate with you about all course-related matters.

Tentative Schedule:

Date	Lesson	Topics	Thomas' Calculus	Work due
5/14	1	01 Review of Functions Part I 02 Review of Functions Part II 03 Review of Functions Part III 04 Review of Functions Part IV	1.1—1.6	
5/21	2	05 Rates of Change 06 Limit of Functions 07 Limit Laws 08 The Squeeze Theorem	2.1, 2.2	Quiz 1 HW 01B HW 02A
5/28	3	09 One-sided Limits 10 Two Trigonometric Limits 11 Continuity Part I 12 Continuity Part II 13 The Intermediate Value Theorem	2.4, 2.5	Quiz 2 HW 02B HW 03A
6/4	4	14 Limits at Infinity 15 Slant and Vertical Asymptotes 16 Derivative as the Slope of Tangent 17 Derivative as a Function	2.6, 3.1, 3.2	Quiz 3 HW 03B HW 04A
6/11	Exam I			
6/18	5	18 Differential Rules Part I 19 Differential Rules Part II 20 Differential Rules Part III 21 Derivative as Rate of Change	3.3, 3.4	Quiz 4 HW 04B HW 05A
6/25	6	22 Derivatives of Trigonometric Functions 23 The Chain Rule Part I 24 The Chain Rule Part II 25 Implicit Differentiation	3.5—3.7	Quiz 5 HW 05B HW 06A
7/2	7	26 Derivatives of Inverse Functions 27 Logarithmic Differentiation Part I 28 Logarithmic Differentiation Part II 29 Derivatives of Inverse Trigonometry	3.8, 3.9	Quiz 6 HW 06B HW 07A
7/9	8	30 Related Rates Part I 31 Related Rates Part II 32 Linearization 33 Differentials	3.10, 3.11	Quiz 7 HW 07B HW 08A
7/16	Exam II			
7/23	9	34 Absolute Extreme Values 35 Local Extreme Values 36 Rolle's Theorem 37 The Mean Value Theorem	4.1, 4.2	Quiz 8 HW 08B HW 09A
7/30	10	38 The First Derivative Test 39 Concavity and Curve Sketching Part I 40 Concavity and Curve Sketching Part II 41 L'Hôpital's Rule Part I 42 L'Hôpital's Rule Part II	4.3—4.5	Quiz 9 HW 09B HW 10A
8/6	11	Optimization Part I Optimization Part II Newton's Method Antiderivative	4.6—4.8	Quiz 10 HW 10B HW 11A
8/13	Exam III			