Survey in Calculus and Analytic Geometry

Math 211, 4 credits

Lecture 001, Class # 66347

Teacher: Jeb F. Willenbring

Office: EMS E461
Hours: MTWRF 1 pm − 3 pm
and please make an appointment.

e-mail: jw@uwm.edu
Phone: (414) 229-4836

1 Course Description

A four week survey with applications to business administration, economics, and natural sciences. Topics include coordinate systems, equations of curves, limits, differentiation, integration. Applications will be emphasized.

2 Course Details

Prerequisites: Math placement level B. Math placement levels are defined at: `http://uwm.edu/math/undergraduate/resources/math-placement/`

May not be used as a prereq for Math 232. No cr for students with cr in Math 213, 221, or 231. Prereq: Math Placement Level 30, which is earned by any of the following: (a) Level 30, 35 or 36 on Math Placement Test; (b) grade of C or better in Math 105, 108, or 116; (c) score of 5 or higher on the IB Mathematical Studies - SL; (d) score of 3 or higher on the AP statistics exam; or (e) score of 63 or higher on the CLEP College Algebra Exam.

Note: STUDENTS WHO DO NOT ATTEND CLASS or contact the instructor during the first week of classes may be administratively dropped from the course.

Class time: MTWRF, 9 am − 12:15 pm in Physics 143 (May 28 − June 21, 2019)

Textbook: Calculus for Business, Economics, and the Social and Life Sciences 11th Ed. Hoffmann, Bradley, Sobecki, Price. Published by McGraw Hill. ISBN: 9781259292811

Connect Math Course Code: : P6FX9-4NHUT

See `https://www.connectmath.com/`

In Class Grading: 30% Final Exam, 30% Exam 1, 30% Exam 2, 10% Graded Quizzes (combined). All of these components are taken in **class**. An extra credit project on an approved topic can be submitted for up to an additional 5% added to your final course grade. The topic of this project must be approved by the instructor before the end of week three, and is turned in **before** the final exam.

Online Grading will be extra-credit of up 20%. The amount of extra credit will be proportional to the amount of online homework completed. For example, a student who does all online homework will receive 20%, while a student who only does half of the online homework will only receive 10% extra credit.

Approximate Grading Scale: (Minimum cutoffs)

A	$A-$	$B+$	B	$B-$	$C+$	C	$C-$	$D+$	D	$D-$
95	90	85	80	75	70	65	60	55	50	45

Homework and Quizzes: There will be online homework assigned using the connect math software. Problems very similar to the homework, in class work, and quizzes will appear on the in-class exams. There will also be practice exams given.

There will also be both announced and unannounced quizzes. Some of these will be graded and all together will count for 10% of your in class grade.

Examinations: Attendance at the scheduled examinations and final is required. All exams are closed book, closed notes. **Calculators are not allowed on any of the in-class exams or in-class quizzes.**

Quizzes: Dates TBA. 10% of course grade

Exam 1: June 5. 30% of course grade

Exam 2: June 13. 30% of course grade

Extra Credit set up: June 14. Up to 5%

EC Due: June 18 at 9am.

Connect Math EC: June 19 at 11:59pm. Up to 20% Extra Credit

Final: June 21. 30% of course grade

Tutoring The *Tutoring and Supplementary Instruction* program in the Student Success Center (formally called PASS) in Bolton 120, Monday through Thursday 12:30pm – 3:30pm. Our recommendation is that you go there as often as possible.

Attendance: Attending lectures regularly is in your own interest. Attendance is required. Accommodations will be made in special situations such as absences due to illness, religious observations, and military duty, where proper documentation is provided in a timely manner.

ACCESSIBILITY ACCOMMODATION If you need special accommodations in order to meet the requirements of the course, please contact me and provide proper documentation as soon as possible. See:
http://uwm.edu/arc/

"The Accessibility Resource Center at the University of Wisconsin Milwaukee is dedicated to providing equal access for students with disabilities to the Universitys academic, social, cultural and recreational programs. We provide comprehensive services and accommodations for students with disabilities as well as outreach and support to faculty and staff. The Accessibility Resource Center (ARC) is committed to creating an inclusive and accessible University experience for all students."

ACCOMMODATION OF RELIGIOUS BELIEFS See:

http://www4.uwm.edu/secu/docs/other/S1.5.htm

"It is the policy of the board of regents that students' sincerely held religious beliefs shall be reasonably accommodated with respect to all examinations and other academic requirements. The board of regents adopts this chapter in order to ensure that all institutions of the university of Wisconsin system have in place appropriate mechanisms for ensuring the reasonable accommodation of students' sincerely held beliefs, and for appeals related to these matters."

MILITARY DUTY See:

http://uwm.edu/active-duty-military/

"UWM has a significant number of students serving in U. S. military reserve or National Guard units who have been or may be called to active duty. The University of Wisconsin System and UWM have a number of policies in place to accommodate students who must temporarily lay aside their educational pursuits when called to active duty in the military."

INCOMPLETE GRADES See:

https://www4.uwm.edu/secu/docs/other/S_31_INCOMPLETE_GRADES.pdf

MISCONDUCT The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonestly. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Cheating on exams or plagiarism are violations of the academic honor code and carry severe sanctions, including failing a course or even suspension or dismissal from the University. More information is available at

http://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/

DISCRIMINATION UWM defines discrimination as conduct that (1) adversely affects any aspect of an individual's employment, education, or participation in activities or programs at UWM; and (2) is based on one or more characteristics of the individual that are protected under federal or state laws. Characteristics that are protected under federal or state ("protected statuses") law may include:

- age
- ancestry
- arrest or conviction record
- color
- disability
- gender identity/expression
- genetic information
- identity as a veteran, disabled veteran, or Vietnam veteran
- marital status
- membership in the national guard, state defense force or any other reserve component of the military forces of the United States or this state
- national origin
- pregnancy
- political affiliation
- race
- religion

- sex
- sexual orientation

See:
`https://www4.uwm.edu/secu/docs/other/S_47_Discrimina_duct_Policy.pdf`

HARASSMENT Any form of harassment is reprehensible and will not be tolerated by the University. It subverts the mission of the University and threatens the careers, educational experience, and well being of students, faculty, and staff. The University will not tolerate behavior between or among members of the University community which creates and unacceptable working environment. More information is available at:

`https://uwm.edu/sexual-assault/`

COMPLAINT PROCESS See:
`https://www4.uwm.edu/secu/docs/other/S_47_Discrimina_duct_Policy.pdf`

GRADE APPEAL PROCESS See:
`http://www4.uwm.edu/secu/docs/other/S28.htm`

"A student may appeal a grade on the ground that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow the established procedures adopted by the department, college, or school in which the course resides. Upon receipt of a recommendation made by the person or body designed to hear such appeals, the appropriate dean has the authority to implement the recommendation. Recommendations regarding grades for graduate students shall be directed to the dean of the Graduate School.

Any further appeal by the student or instructor shall be directed to the office of the appropriate dean. The dean shall seek the advice of the departmental executive committee before making a decision. After such consultation, the dean has the final authority to alter the grade."

LGBTQ$^+$ See:
`http://uwm.edu/lgbtrc/`

"The University of Wisconsin Milwaukee is one of the nations top campuses for LGBTQ+ students and is currently rated 4.5 stars by Campus Pride as an LGBTQ+ friendly University. We have earned one of the highest score attainable in terms of creating a safe and welcoming campus for LGBT+ students and their allies."

Posted room changes or class cancelations will be e-mailed and posted

Course Evaluation Policies are posted at
`https://www4.uwm.edu/secu/docs/other/S_52.5_TEACHING_ON_POLICIES.pdf`

Other Information on UWM policies can be found at
`http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf`

3 Approximate Plan of Coverage

May 28 Introductions...

 Quick overview of Calculus

May 29 1.5: Limits

 1.6: One-Sided Limits and Continuity

May 30 2.1: The Derivative

2.2: Techniques of Differentiation

May 31 2.3: Product and Quotient Rules; Higher-Order Derivatives

2.4: The Chain Rule

June 3 2.5: Marginal Analysis and Approximations Using Increments

2.6: Implicit Differentiation and Related Rates

June 4 3.1: Increasing and Decreasing Functions; Relative Extrema

3.2: Concavity and Points of Inflection

Review for Exam 1

June 5 Exam 1 9am – 11am

3.3: Curve Sketching

June 6 3.4:Optimization; Elasticity of Demand

3.5: Additional Applied Optimization

June 7 4.1: Exponential Functions; Continuous Compounding

4.2: Logarithmic Functions

June 10

4.3: Differentiation of Exponential and Logarithmic Functions

4.4: Additional Applications; Exponential Models

June 11 5.1: Indefinite Integral and Differential Equations

5.2: Integration by Substitution

June 12 5.3: The Definite Integral and Fundamental Theorem of Calculus

Review for Exam 2

June 13 Exam 2 9am – 11am

5.4: Applying Definite Integration: Distribution of Wealth and Average Value

June 14 5.5: Additional Applications of Integration to Business and Economics

5.6: Additional Applications of Integration to the Life and Social Sciences

Extra Credit Projects must be approved

June 17 6.1: Integration by Parts; Integral Tables

Sketch 6.2: Numerical Integration

6.3: Improper Integrals

6.4: Introduction to Continuous Probability

June 18 7.1: Functions of Several Variables

7.2: Partial Derivatives

7.3: Optimizing Functions of Two Variables

Extra Credit Projects are due at 9am!

June 19 7.4: The Method of Least Squares

Sketch 7.5: Constrained Optimization

7.6: Double Integrals

June 20 Review Day

June 21 Final Exam