MAT211– Calculus I (Fall 2024) Course Syllabus

Instructor
Name: Ji Young Choi
email address: jychoi@ship.edu
Student Consultation Hours: 10-11 am on MW and 12:30 – 2 pm on TR
Office: MCT278

Face-to-Face Meet	Online Component
8-9am MWF at DHC104	Tuesday Asynchronous in d2l (watch videos & make notes)

Important Sites
D2L https://d2l.ship.edu
Zoom Office Hours https://ship.zoom.us/j/94338091000

Course Materials
D2l provides links to videos, notes, and homework. You will submit your class activities to this site and you can check your grades.
Text Book (optional): OpenStax Calculus Volume 1 (https://openstax.org/details/books/calculus-volume-1)
Calculator: TI-83/84 will be allowed.

Course Description
This is an introduction to study of differential and integral calculus from algebraic, numerical, and graphical points of view, by covering the concept of limits and applications of derivatives.
Prerequisite: Grade of C or better in MAT 175 or math placement level 6. If you feel you're are in the wrong course, please contact the Mathematics Department secretary (math@ship.edu) as soon as possible.
Your schedule can be changed only during the first week of class.

Student Learning Objectives

Upon successful completion of this course, you will:

- Be able to explain information presented in mathematical forms (e.g. equations, graphs, diagrams, tables, and words). (SLO Q1: Interpretation)
- Be able to perform calculations and draw appropriate conclusions based on them. (SLO Q2: Analysis)
- Be able to express quantitative evidence in support of an argument. (SLO Q3: Communication)
- Analyze and compute the limit of a function and understand the application of limits to the concept of slope.

- Construct the derivative of a function and use information about the derivative of a function to make inferences about the original function.
- Solve application problems using derivatives.
- Perform the basics of integration, including the Fundamental Theorem of Calculus.

Tentative Schedule
Exam 1: Wednesday of September 18
Exam 2: Wednesday of October 9
Exam 3: Friday of November 1
Online Quiz: Tuesday of November 26(You will not have an extension)
Final: To be announced (it will be on the final week, and cumulative)

Tutoring
Free, drop-in or appointment-required Learning Center Tutoring at Mowrey

---

Grading
Your grade will be based on your notes, homework, quizzes, and a cumulative Final. I will use the following grading scheme:

Class Activities	**10%**	Attendance +Note Submission+ Quizzes
Homework	**20%**	MOM work on line
Exams	**70%**	Exam1, 2, 3 & Final (each 23%) + Online Quiz (8%)

At the end of the course, I will assign grades based on the following scale:

Percentage	90 -100	87-89	84-86	80-83	77-79	74-76	70-73	60-69	0-59
Final Grade	A	A-	B+	B	B-	C+	C	D	F

Expectations
In each face-to-face class, you will receive notes with many blanks that you are supposed to fill in during each class time period. **In each asynchronous online class**, you will watch video, take notes, and **submit 1 pdf file for your class activities to d2l**, unless you are asked not to. (I recommend Adobe Scan or Genius Scan app to take a picture of your work, save it as one single pdf file, and then upload it in d2l. The instruction is available below.)

If you miss any class, please find **study materials (book, notes, videos) in d2l and contact me** immediately if you need any additional assistance.

Homework: You will see homework links in d2l. **You can redo homework** assignments as many times as you want **before the deadline.**

Scan App Information
Adobe Scan app

- Android link: https://play.google.com/store/apps/details?id=com.adobe.scan.android&hl=en_US

- Apple link: https://apps.apple.com/us/app/adobe-scan-digital-pdf-scanner/id1199564834
- Video tutorial: https://www.youtube.com/watch?v=MCyhOkBpELc

Genius Scan app

- Android link:https://play.google.com/store/apps/details?id=com.thegrizzlylabs.geniusscan.free&hl=en_US
- Apple link: https://apps.apple.com/us/app/genius-scan-pdf-scanner/id377672876
- Video tutorial: https://www.youtube.com/watch?v=PAmUKvvUjgs

Tentative Course Calendar (Fall 2024)

Adjustments and updates to the course schedule, due to inclement weather or other unforeseen events, will be announced in class.

Wk	Section and Topic	STUDENT LEARNING OBJECTIVES - TSWBT (the student will be able to):	Assignments
1 8/26 - 8/30	M(1.1) TA(1.2) W(1.3) F(1.4)	• Review functions(domain, range, vertical/horizontal line tests) • Review basic classes of functions (linear, quadratic, polynomials, and transformations) • Review trigonometric functions • Review inverse functions	**Weekly HW in d2l** **Note Submission 1**
2 9/2 - 9/6	M(No class) TA (1.5) W(2.1) F(2.2a)	▪ Review Exponential and Logarithmic functions ▪ Find average/instantaneous rate of change ▪ Estimate Limits using graphs and tables.	**Note Submission 2**
3 9/9 - 9/13	M(2.2b) TA (2.3) W(2.4) F(3.1)	• Find asymptotes using infinite limits • Apply the limit laws • Determine Continuity in functions and apply the Intermediate Value Theorem • Find derivative using slopes and the definition	**Note Submission 3**
4 9/16- 9/20	M(3.2) TA(Review) W(Exam) F(3.3a)	▪ Find the derivative function graphically and algebraically ▪ Apply the differentiation rules to find derivatives	**No Note Submission** **Exam 1 – Wednesday 9/18 in class**
5 9/23 - 9/27	M(3.3b) TA(3.4) W(3.5) F(3.6)	▪ Apply the product and quotient rules to find derivatives ▪ Solve the problems on the rate of changes ▪ Find the derivatives of trig functions • Apply the chain rule to find derivatives	**Note Submission 5**
6 9/30- 10/4	M(3.7) TA(R1) W(3.8) F(3.9a)	• Find the derivatives of the inverse of trigonometric functions • Practice differentiations • Perform implicit differentiation • Find the derivative of Exponential and Logarithmic functions	**Note Submission 6**
7 10/7 - 10/11	M(3.9b) TA(Review) W(Exam) **FA**(4.1)	• Apply logarithmic differentiation for complicated functions • Solve related-rate story problems	**No note submission on Tuesday** **Exam 2 – Wednesday 10/9 in class** **Note Submission 7**
8 10/14 - 10/18	M(no class) TA(no class) W(4.1) F(4.2)	• Solve more related-rate story problems • Use the linear approximation and differential to estimate a function value.	**No Note Submission**
9 10/21 - 10/25	M(4.3) TA(4.4) W(4.5a) F(4.5b)	▪ Find absolute maximum and minimum using critical points. ▪ Explain the Rolle's Theorem and the Mean Value Theorem • Use the first derivatives to find increasing/decreasing intervals and local max/min • Use the second derivatives to find concavity, local max/min, inflection point.	**Note Submission 9**
10 10/28– 11/1	M(4.7a) TA(4.7b) W(Review) F(Exam)	▪ Solve optimization problems	**Note Submission 10** **Exam 3 – Friday 11/1 in class**
11 11/4 – 11/8	M(4.10) TA(5.1a) W(5.1b) **FA**(5.2a)	• Find antiderivatives • Use the left-endpoint(right-endpoint, midpoint) approximation to estimate the area under a curve over the x-axis. • Use the summation notation to express Riemann sum • Evaluate the definite integral by the definition	**Note Submission 11** **Note Submission 11.2**
12	M(5.2b) TA(5.3a)	▪ Evaluate the definite integral using its properties	**Note Submission 12**

11/11-11/15	W(5.3b) F(5.4)	▪ Use the fundamental Theorem of Calculus to differentiate and evaluate definite integrals ▪ Apply the Net Change Theorem to solve story problems and Evaluate even and odd functions	
13 11/18 - 11/22	M(5.5a) TA(5.5b) W(5.5c) F(5.5d)	• Apply the substitution rule to integrate more complicated functions	**Note Submission 13**
14 11/ 25 -12/1	M(Review) TA(Quiz) W(No class) F(No class)	• Review integration	**No note submission** **Quiz – Tuesday 11/26** **Asynchronous online (d2l)**
15 12/2 - 12/6	M(Review) TA(Review) W(Review) F(Review)	• Review for final	**No note submission**
16	Final	• Final exam is a cumulative exam. The date will be announced later.	**Final Exam in person**

Title IX Reporting Requirements

Shippensburg University of Pennsylvania and its faculty are committed to assuring a safe and productive educational environment for all students. In order to comply with the requirements of Title IX of the Education Amendments of 1972 and the university's commitment to offering supportive measures in accordance with the regulations issued under Title IX, Shippensburg University of Pennsylvania requires faculty members to report incidents of sexual violence shared by students to the university's Title IX Coordinator, Dr. John Burnett [JABurnett@ship.edu] or [Title9@ship.edu]. The only exceptions to the faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a university-approved research project. **Faculty members are obligated to report sexual violence or any other abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred to the person designated in the university' Protection and Supervision of Minors on Campus Policy.**

Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence are available on the Office of Human Resources website:

https://www.ship.edu/about/offices/hr/title_ix_statement/

Reports may be made to the following individuals:

Dr. John Burnett
Title IX Coordinator
Office of Human Resources
Old Main 106-A
Shippensburg, PA 17257
771-477-1323
Cell: 724-317-6415
Email: JABurnett@ship.edu

Nipa Browder
Deputy Title IX Coordinator
Office of Human Resources
Ph: 717-477-1124
Email: Nbrowder@ship.edu

Jennifer Milburn
Deputy Title IX Coordinator
Housing/ResLife/Conferences
Ph: 717-477-1904
Email: JSMilburn@ship.edu

Trejon Dinkins
Deputy Title IX Coordinator
Retention and Student Succes
Ph: 717-477-1123 x3027
Email: TADinkins@ship.edu

Alix Rouby
Deputy Title IX Coordinator
Career Center
Ph: 717-477-1595
Email: AJRouby@ship.edu

Mary Burnett
Deputy Title IX Coordinator
International Programs
Ph: 717-477-1279
Email: MEBurnett@ship.edu

Link for the online reporting form: (This is for reporting an issue, not making a formal complaint)

https://cm.maxient.com/reportingform.php?ShippensburgUniv&layout_id=3

Link for the Formal Complaint form:

https://cm.maxient.com/reportingform.php?ShippensburgUniv&layout_id=21

Link for campus resources:

https://www.ship.edu/about/offices/hr/title_ix_statement/resources/