



College of Science and Mathematics

Department of Mathematics



MATH 1190: Calculus I

Spring Semester 2016

Instructor – John F. Malluck, Ph.D, P.E.

CRN	Days	Time	Course Num/Sec	Location
13037	MW	2:00 – 3:40 pm	MATH 1190/58	D 107

A Course in the General Education Program

Program Description: The General Education at Kennesaw State University program offers a comprehensive series of interrelated courses in the liberal arts and sciences for all Kennesaw State University students. Whereas the major program contributes depth within a chosen specialization, the General Education core provides breadth of understanding within a variety of disciplines. Together, the General Education core and the major degree program offer students the knowledge, skills, and perspectives to become informed and engaged citizens living in a diverse, global community.

Syllabus: Issue 1 1/11/2016

Syllabus subject to revision. Announcement of changes will be made in class and posted online as revised Syllabus Issue Number. Most current Syllabus Online: <http://science.kennesaw.edu/~jmalluck/>

Program Goals: The General Education Program at KSU has four goals. During the course of the program, students should achieve the following:

- Demonstrate knowledge and understanding of general education disciplines.
- Demonstrate proficiency in communication.
- Demonstrate skills in inquiry, critical thinking, analysis, and problem solving through scholarly and/or creative activity across the general education disciplines.
- Demonstrate an understanding of ethics, diversity, and a global perspective.

MATH 1190 satisfies one of Kennesaw State University's general education program requirements. It addresses the Applied Math learning outcome. This learning outcome states:

Applied Math: Students will demonstrate an ability to effectively apply symbolic representations to model and solve problems.

For more information about KSU's General Education program requirements and associated learning outcomes, please visit the topic "University-Wide Degree Requirements" in the KSU Undergraduate Catalog.

General Education Assessment Study:

Kennesaw State University is currently engaged in a campus-wide assessment of its general education program. The purpose is to measure student achievement with respect to faculty defined student learning outcomes. This course has been selected to participate in the process. No individually-identifiable student information will be collected as part of the assessment. Data will be reported only in aggregated form. Students should know that the data may be used for scholarly work by members of KSU faculty (but only in anonymous and aggregated form). If you are opposed to having your anonymous data used for scholarly work, you can "opt out" of this specific aspect of the process.

For more information on the general education assessment process and for access to an "opt out" form, please click

<http://kennesaw.edu/curriculum/gen-ed-assessment.html>

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Course Description:

MATH 1190 – Calculus I

4 Class Hours 0 Laboratory Hours 4 Credit Hours

Prerequisite: A grade of “C” or better grade in MATH 1112 or MATH 1113 or approval of department chair.

This course is the first in the calculus curriculum and introduces the central concepts of calculus. Topics include limits, continuity, derivatives of algebraic and transcendental functions of one variable, applications of these concepts and a brief introduction to the integral of a function.

Expected Learning Outcomes:

1. The student will be able to determine the limit of a function, including limits involving infinity, numerically, graphically, and analytically, including using the Squeeze Theorem.
2. The student will be able to determine the continuity of a function at a specific number and on an interval, both graphically and analytically.
3. The student will be able to use the Intermediate Value Theorem.
4. Students will be able to compute derivatives of basic functions using the limit definition of the derivative.
5. Students will be able to calculate derivative functions using the common rules: power, product, quotient, and chain rules, and be able to calculate the derivatives of polynomials, exponential and logarithmic functions, and trigonometric and inverse trigonometric functions.
6. Students will be able to use implicit differentiation and logarithmic differentiation.
7. Students will know that the Mean Value Theorem can be used to prove the Increase/Decrease Test. Student will use knowledge of derivatives in applications including, but not limited to, maximum-minimum problems, shapes of curves, indeterminate forms, and L'Hôpital's Rule.
8. Students will be able to calculate antiderivatives for basic functions using their knowledge of derivatives.
9. Students will be able to use the definition and geometric interpretation of the definite integral to evaluate definite integrals of basic functions.
10. Students will be able to use the Fundamental Theorem of Calculus to evaluate definite integrals.

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Instructor: *John Malluck, Ph.D., P.E.*
Office Location: Mathematics Room D 228
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Website: <http://math.kennesaw.edu/~jmalluck>

Office Hours: M, W 4:00 pm – 5:00 pm
T, Th 2:00 pm – 3:00 pm Other times by appointment

Required Materials: WebAssign Software License:
<https://webassign.com/>
Course Access Key: kennesaw 5839 6472

Graphical Calculator: “TI-83 Graphical Calculator” or equivalent.

Supplemental Materials: Textbook
Single Variable Calculus, Early Transcendentals, 1st edition,
by Michael Sullivan and Kathleen Miranda

KSU Smart Center: Science and Math Academic Resource and Tutoring
<http://uc.kennesaw.edu/academicinitiatives/smart/index.php>
Kennesaw Campus: Suite 433 Sturgis Library Building
Marietta Campus: Suite 185 Building A (Student Center)

Assessment: *Performance in this course will be evaluated as follows:*

Test #1100pts
Test #2100pts
Test #3100pts
Test #4100pts
Homework.....100pts

I will drop the lowest score on Test #1 thru Test #3. Test #4 and Homework cannot be dropped. Grade is then based on 400 Points.

Grade Distribution:

A	Excellent	360 pts above
B	Above Average	320 – 359 pts
C	Average	280 – 319 pts
D	Below Average	240 – 279 pts
F	Inadequate	239 pts & below

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Class Schedule:

Day	Date	Class #	Course Material	Homework
Monday	Jan 11	1	Course Introduction 1.1 Determining Limits Graphically	
Wednesday	Jan 13	2	1.1 Determining Limits Numerically	
Monday	Jan 18		Holiday	
Wednesday	Jan 20	3	1.2 Evaluating Limits Algebraically and Limit Laws	
Monday	Jan 25	4	1.3 Continuity	
Wednesday	Jan 27	5	1.5 Infinite Limits	
Monday	Feb 1	6	2.1 Rates of Change	
Wednesday	Feb 3	7	2.2 Derivative as a Function	
Monday	Feb 8	8	Test #1 - Sections 1.1,1.2,1.3,1.5,2.1	
Wednesday	Feb 10	9	2.3 The Power Rule	
Monday	Feb 15	10	2.2 Derivative Notation, Graphs	
Wednesday	Feb 17	11	2.6 The Exponential Function	
Monday	Feb 22	12	2.4 The Product & Quotient Rule	
Wednesday	Feb 24	13	2.5 Derivatives of Trig Functions	
Monday	Feb 29	14	3.1 The Chain Rule	
Wednesday	Mar 2	15	Test#2 - Sections 2.2,2.3,2.4,2.5,2.6	
Monday	Mar 7	16	3.2 Implicit Differentiation	
Wednesday	Mar 9	17	3.3 Derivative of Logs	
Monday	Mar 14	18	3.2 Inverse Trig Functions	
Wednesday	Mar 16	19	4.2 Critical Numbers. Maximums, Minimums	
Monday	Mar 21	20	4.4 Local Extrema and Concavity	
Wednesday	Mar 23	21	4.5 L'Hopital's Rule	
Monday	Mar 28	22	Review	
Wednesday	Mar 30	23	Test#3 - Sections 3.1,3.2,3.3, 4.2,4.3,4.4,4.5	
Monday	Apr 4		Spring Break	
Wednesday	Apr 6		Spring Break	
Monday	Apr 11	24	4.8 Antiderivatives	
Wednesday	Apr 13	25	5.1 Area	
Monday	Apr 18	26	5.2 The Definite Integral	
Wednesday	Apr 20	27	5.3 The Fundamental Theorem of Calculus	
Monday	Apr 25	28	5.4 Properties of Definite Integrals	
Wednesday	Apr 27	29	5.5 The Indefinite Integral	
Monday	May 2	30	Review	
Wednesday	May 4	31	Test #4 1:00 – 3:00 pm	

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Course Policies

Lectures - Attendance for all lectures is strongly encouraged, but *not mandatory*. If you miss a lecture, you are still responsible for the material presented including any additional assignments or announcements.

Tests & Exams - Participation in all Tests and Exams is *mandatory*. Absence will result in a grade of zero. **Missing a Test or Exam** - Please contact me immediately by email if you know you will miss a test or exam due to some extenuating circumstance such as illness or business travel. It may be possible for you to still take a test or exam before it has been returned to the class. Test and Exams will be given “closed book”. Calculators such as a TI-83 are allowed for use during exams.

Homework – Online Homework will be assigned daily. Online Homework Assignments are *due and will close on the Test Date* for that material. Homework is mandatory practice! Attempting homework will give rise to questions to ask in class on online.

disAbled Student Services – Learning accommodations are only available for students registered with KSU DSS.

http://www.kennesaw.edu/stu_dev/dsss/dsss.html

WITHDRAWAL FROM THE UNIVERSITY OR FROM INDIVIDUAL COURSES AND ACADEMIC INTEGRITY

Spring Term, 2016

Withdrawal

Students who find that they cannot continue in college for the entire semester after being enrolled, because of illness or any other reason, need to complete an online form. To completely or partially withdraw from classes at KSU, a student must withdraw online at www.kennesaw.edu, under Owl Express, Student Services.

The date the withdrawal is submitted online will be considered the official KSU withdrawal date which will be used in the calculation of any tuition refund or refund to Federal student aid and/or HOPE scholarship programs. It is advisable to print the final page of the withdrawal for your records. Withdrawals submitted online prior to midnight on the last day to withdraw without academic penalty will receive a “W” grade. Withdrawals after midnight will receive a “WF”. Failure to complete the online withdrawal process will produce no withdrawal from classes. Call the Registrar’s Office at 770-423-6200 during business hours if assistance is needed.

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Students may, by means of the same online withdrawal and with the approval of the university Dean, withdraw from individual courses while retaining other courses on their schedules. This option may be exercised up until **March 2, 2016**.

This is the date to withdraw without academic penalty for **Spring** Term, **2016** classes. Failure to withdraw by the date above will mean that the student has elected to receive the final grade(s) earned in the course(s). The only exception to those withdrawal regulations will be for those instances that involve unusual and fully documented circumstances.

Academic Integrity

Every KSU student is responsible for upholding the provisions of the Statement of Student Rights and Responsibilities, as published in the Undergraduate and Graduate Catalogs. Section II of the Statement of Student Rights and Responsibilities addresses the University's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to University materials, misrepresentation/falsification of University records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimal one semester suspension requirement.

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