MATH 1190: Calculus I

Fall Semester 2015

Instructor – Sean F. Ellermeyer, Ph.D.

CRN	Days	Time	Course Num/Sec	Location
84553	MW	2:00 PM – 3:40 PM	MATH 1190/57	Bldg. J - Room 210

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.

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

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.

Instructor Information and Policies for this course

Instructor Information: Sean F. Ellermeyer, Office: D 204, Phone: 470-578-6129, e-mail: sellerme@kennesaw.edu, Course URL: http://math.kennesaw.edu/~sellerme

Office Hours:
Mondays 10:00 a.m. to 11:30 a.m.
Wednesdays 12:15 p.m. to 1:45 p.m.
Fridays 10:00 a.m. to 11:30 a.m.
Also at any mutually convenient pre-arranged time.

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

Online Resource: LaunchPad (includes access to the complete eText version of *Single Variable Calculus, Early Transcendentals, 1st edition*). LaunchPad is **not** required for this course. However, new books purchased at the KSU and General bookstores should come bundled with a student access code for LaunchPad. Anyone just wanting to purchase the student access code for LaunchPad (without purchasing the textbook) can either purchase the LaunchPad code at the bookstore, or present their plastic online at the LaunchPad website to subscribe. Temporary access while awaiting financial aid is available at the website. To get started using LaunchPad, follow the instructions at

http://www.macmillanhighered.com/launchpad/sullivancalculus/1889107

Required Calculator: TI-83, TI-83+, or TI-84 or something similar,

Other Recommended Materials: Graph paper

Class Participation: Daily roll will be taken. You must be present at the time that roll is taken in order to receive class participation credit. A class participation grade will be assigned at the end of the semester according to the table that appears at the end of this syllabus.

Grading: In addition to the class participation grade, there will be four one-hour exams and a comprehensive two-hour final exam. The exam dates are listed in the course outline. Each exam question will be graded according to the following scheme:
• 20 points -- if your reasoning is correct and well--written. By "well--written", I mean that I am able to easily follow your reasoning, no important details are omitted, correct notation is used, etc. Essentially, you will get 20 points if your reasoning is correct and I am easily able to determine that it is correct because

you have explained yourself clearly with good prose and notation. 20 points is equivalent to a "high A".

　・ 16 points -- if I can determine that your reasoning is correct but I have to struggle slightly in determining that it is correct due to some unclear writing, incorrect use of notation, or for whatever reason. 16 points is equivalent to a "borderline A--B".

　・10 points -- if your reasoning is "mostly" correct and you have made a strong start at a correct solution to a problem. Essentially, 10 points means high partial credit and is equivalent to a "mid-level C".

　・ 4 points -- if your reasoning is not "mostly" correct, but at least the beginnings of a correct argument are discernible. Essentially, 4 points means low partial credit and is equivalent to a "borderline D--F".

　・ 0 points -- if partial credit is not warranted. 0 points is equivalent to a "low F".

　　Your grade on each exam will be calculated by averaging your individual question scores. Thus a perfect score on any exam is 20. Your final grade at the end of the course will be calculated according to

　　(Class participation grade + Exam 1 grade + Exam 2 grade + Exam 3 grade + Exam 4 Grade + Final Exam grade)/6

　　However, before performing the above calculation, the lowest hour-exam score (or the class participation score) will be dropped and replaced with the final exam score (if the final exam score is higher). Thus, the final exam can be used to take the place of your lowest exam score (or of your class participation score).

　　The letter grade that you get at the end of the course will be assigned using the result of the above calculation as follows:
- A - for a score between 16 and 20.
- B - for a score between 12 and 15.9.
- C - for a score between 8 and 11.9.
- D - for a score between 4 and 7.9
- F - for a score between 0 and 3.9

This grading scale will be followed exactly with all exam scores and the final score calculation rounded to the nearest tenth. For example, suppose that your scores on the four hour exams are 9.9, 1.6, 9.3 and 14.6, your score on the final exam is 11.4 and your class participation score is 17.1. Since the final exam score is 11.4, which is higher than 1.6, the grade of 1.6 would be disregarded and the grade of 11.4 would be counted in place of it. Thus your grade would be calculated as

　　((9.9+11.4+9.3+14.6+11.4+17.1)/6)=12.3 (rounded)

In this case your course grade would be a B.

Important Note: There will be no make-up quizzes or exams for any reason (legitimate or not legitimate)! Occasionally, students miss exams for legitimate reasons such as illnesses and automobile mishaps. If you must miss an exam for a legitimate reason, please inform me as soon as possible. If your reason for missing the exam is legitimate, then you will be excused from it and your grade on the portion of the final exam that addresses the material of the missed exam will be used as your grade for the missed exam. In order to be excused from an exam, you must provide written documentation from a doctor (in the case of illness) or from the police (in the case of an auto accident) that states the reason why you were not able to be at KSU on the day of the exam. All such excuses will be verified by me. In some cases in which a student knows ahead of time, and informs me at least one week in advance, that he or she will not be able to be present on an exam day (for a legitimate reason), I allow the student to take the exam early (but not after the official exam day).

Grades of "Incomplete": Grades of "Incomplete" (I) are given, at the instructor's discretion, to students who have been doing satisfactory work (at least a C average) up until the last two weeks of the semester but who, for some unavoidable reason, are unable to complete the work of the last two weeks of the semester. No decisions about grades (including grades of Incomplete) will be made until the semester (including the final exam) is finished. Occasionally, students ask me if I will give them a grade of "Incomplete". This request is usually made at some point before the last two weeks of the semester. I can't answer such requests since I do not make any grading decisions until the semester is over. If I see that an "Incomplete" grade is warranted, then I will give that grade (without being asked). I very rarely assign grades of "Incomplete" because I have found that they are usually not warranted. All incomplete work must be made up (and the I grade changed to a regular grade, A, B, C, D, or F) as quickly as possible, typically before the start of the next semester.

Attendance Grade Conversion Table

Number of Classes Attended	Percent (out of 25)	Class Participation Grade
1	4.0	0.3
2	8.0	0.5
3	12.0	0.8
4	16.0	1.1
5	20.0	1.3
6	24.0	1.6
7	28.0	1.9
8	32.0	2.1
9	36.0	2.4
10	40.0	2.7
11	44.0	2.9
12	48.0	3.2
13	52.0	3.5
14	56.0	3.7
15	60.0	4.0
16	64.0	5.6
17	68.0	7.2
18	72.0	8.8
19	76.0	10.4
20	80.0	12.0
21	84.0	13.6
22	88.0	15.2
23	92.0	16.8
24	96.0	18.4
25	100.0	20.0

WITHDRAWAL FROM THE UNIVERSITY OR FROM INDIVIDUAL COURSES AND ACADEMIC INTEGRITY

Fall Term, 2015

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.

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 **October 7, 2015**.

This is the date to withdraw without academic penalty for Fall Term, 2015 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.