



College of Science and Mathematics

Department of Mathematics



MATH 2202: Calculus II

Fall Semester 2016

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

CRN	Days	Time	Course Num/Sec	Location
82947	MWF	2:00 – 3:10 pm	MATH 2202/55	D 224

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 2202 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 2202 – Calculus II

4 Class Hours 0 Laboratory Hours 4 Credit Hours

Prerequisite: A grade of “C” or better grade in MATH 1190.

This course is the second in the calculus curriculum and consists of two parts. The first part is concerned with the techniques of integration and applications of the integral. The second part is concerned with infinite sequences and series.

Expected Learning Outcomes:

1. Students will develop the area and distance problems and use them to formulate the definite integral.
2. The student will be able to recognize basic integrals that correspond to differentiation formulas (learned in Calculus I).
3. The student will investigate the relationship between the derivative and the integral through The Fundamental Theorem of Calculus. The student will use The Fundamental Theorem of Calculus to compute the definite integral.
4. The student will apply various integration techniques including substitution, by parts, trigonometric identities, trigonometric substitutions, and partial fractions.
5. The student will apply the definite integral to problems such as areas between curves, volumes of solids, lengths of curves, the average value of a function, and the work done by a varying force.
6. The student will be able to recognize improper integrals and will be able to evaluate certain improper integrals analytically (as a limit of integrals that are not improper).
7. The student will understand the concepts of convergence and divergence of sequences and series.
8. The student will be able to apply tests such as the ratio test, the integral test and the standard and limit comparison tests in determining whether certain given series converge or diverge.
9. The student will be able to differentiate and integrate functions defined by power series. The student will be able to derive the Taylor Series of a function (centered at a given point).

Instructor Information and Policies for this course

Instructor: *John Malluck, Ph.D., P.E.*
Office Location: Mathematics Room D 228
Office Phone: 470-578-6286
Email: jmalluck@kennesaw.edu
Website: <http://math.kennesaw.edu/~jmalluck>

(email is the best way to get a message to me)

Office Hours: M, T, W, Th, F 1:00 pm – 2:00 pm
Other times by appointment

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

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

Grade is then based on 500 Points.

Syllabus: Issue 1 8/15/2016

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/>

Grade Distribution:

A	Excellent	450 pts above
B	Above Average	400 – 449 pts
C	Average	350 – 399 pts
D	Below Average	300 – 349 pts
F	Inadequate	299 pts & below

Class Schedule:

Day	Date	Class #	Course Material	
Monday	Aug 15	1	Course Introduction	
Wednesday	Aug 17	2	4.8 Antiderivatives	
Friday	Aug 19	3	5.1 Area	
Monday	Aug 22	4	5.2 The Definite Integral	
Wednesday	Aug 24	5	5.3 The Fundamental Theorem of Calculus	
Friday	Aug 26	6	5.4 Properties of the Definite Integral	
Monday	Aug 29	7	5.5 Indefinite Integrals	
Wednesday	Aug 31	8	5.6 The Substitution Method	
Friday	Sept 1	9	5.6 Substitution continued.	
Monday	Sept 5		Holiday	
Wednesday	Sept 7	10	Review	
Friday	Sept 9	11	Test #1	
Monday	Sept 12	12	6.1 Area Between Graphs	
Wednesday	Sept 14	13	6.2 Volume of Solids of Revolution: Disks	
Friday	Sept 16	14	No Class Today	
Monday	Sept 19	15	6.3 Volume of Solids of Revolution: Washers	

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Wednesday	Sept 21	16	6.4 Volume of Solids: Shells	
Friday	Sept 23	17	6.4 Volume of Solids: Slicing	
Monday	Sept 26	18	6.5 Arc Length	
Wednesday	Sept 28	19	6.6 Work	
Friday	Sept 30	20	Test #2	
Monday	Oct 3	21	7.1 Integration by Parts	
Wednesday	Oct 5	22	7.2 Integrals containing Trig Functions	
Friday	Oct 7	23	7.3 Trig Substitution	
Monday	Oct 10	23	7.4 Substitution: Integrals containing quadratics	
Wednesday	Oct 12	24	7.4 continued	
Friday	Oct 14	25	7.5 Integration using Partial Fractions	
Monday	Oct 17	26	7.5 continued	
Wednesday	Oct 19	27	7.6 Numerical Integration Techniques	
Friday	Oct 21	28	Review	
Monday	Oct 24	29	Test #3	
Wednesday	Oct 26	30	8.1 Sequences	
Friday	Oct 28	31	8.2 Series	
Monday	Oct 31	32	8.3 Properties of Series: Integral Test	
Wednesday	Nov 2	33	8.4 Comparison Tests	
Friday	Nov 4	34	8.5 Alternating Series: Absolute Convergence	
Monday	Nov 7	35	8.6 Ratio Test	
Wednesday	Nov 9	36	8.7 Summary of Tests	
Friday	Nov 11	37	8.8 Power Series	
Monday	Nov 14	38	8.8 Continued	

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Wednesday	Nov 16	39	8.9 Taylor Series	
Friday	Nov 18	40	8.9 Continued	
Monday	Nov 21		Holiday	
Wednesday	Nov 23		Holiday	
Friday	Nov 25		Holiday	
Monday	Nov 28	41	8.9 Maclaurin Series	
Wednesday	Nov 30	42	8.9 Continued	
Friday	Dec 2	43	Review	
Monday	Dec 5		Review	
Wednesday	Dec 7		Test #4 1:00 – 3:00 pm	

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

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WITHDRAWAL FROM THE UNIVERSITY OR FROM INDIVIDUAL COURSES AND ACADEMIC INTEGRITY

Fall 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.

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 5, 2016**.

This is the date to withdraw without academic penalty for **Fall 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

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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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