

Course Information

Credit Hours:	5
Meeting Times:	Monday-Thursday from 11-12:05
Room:	D230
Description:	This is the second of three courses in the calculus sequence. Topics include applications of integration, analytical integration techniques, and numerical integration techniques; indeterminate forms, L'Hopital's Rule, and improper integrals; sequences and series, convergence tests, power series, Taylor polynomials, and Taylor series; parameterization of curves, and calculus of parametric curves; calculus of polar coordinate system, and conic sections.
Learning Outcomes:	<ul style="list-style-type: none"> • Solve geometric and physical applications using integrals; • Apply techniques of numerical integration; • Develop and apply techniques of integration including substitution, integration by parts, trigonometric substitution, and partial fractions; • Find limits involving indeterminate forms using L'Hopital's rule and evaluate improper integrals; • Determine convergence of series using appropriate tests; • Determine convergence of power series on intervals; • Find Taylor series representations of functions with associated intervals of convergence; • Develop and apply techniques of calculus to functions in parametric form; and • Develop and apply techniques of calculus to functions in polar coordinates.
Prerequisites:	Math: Grade of C or better in MTH 190 or equivalent college credit Reading: Grade of C or better in RDG 091 or LTC 099, an ACT Reading score of 18 or above, or an appropriate placement score
IAI:	IAI General Education: M1 900-2; IAI Major: MTH 902
Required Text:	Larson & Edward's <i>Calculus of a Single Variable</i> , 10 th edition, Pearson
Calculators:	TI-83, TI-83+, TI-84, or TI-84(+) is required. Cell phone calculators and calculators capable of symbolic manipulation, such as the TI-89, are not permitted on exams.
Online Information:	D2L (login to http://elgin.edu/d2l with your accessECC username and password, and select Math 210) will be used to post all course-related documents (under <i>content</i>) as well as your grades.

Instructor Information

Instructor:	Nicole Scherger, Ed.D.
Email ✉:	nscherger@elgin.edu
Office:	D204
Phone ☎:	(847)214-7962
Monday-Thursday Schedule:	9-10: Office (D204) 10-10:50: MTH 098 105 (D230) 11-12:05: MTH 210 100 (D230) 12:30-1:00: Office (D204) 1-1:50: MTH 126 101 (D221) 2-2:50: MTH 126 102 (D221) 3-4: Office (D204)

Classroom Policies

Attendance:	Regular attendance is mandatory. Any student missing eight classes is subject to withdrawal from the course. Extreme situations will be taken into consideration on a case-by-case basis; therefore, you must communicate with me regarding any extenuating attendance circumstances. Those who have multiple late arrivals to class will begin to be counted as absences.
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Classroom Behavior:	<ul style="list-style-type: none"> • Put away all cell phones. • Avoid coming to class late or leaving early. It is both disruptive and inconsiderate. If there are extenuating circumstances, please let me know. • You are expected to be an active participant in class, which includes: <ul style="list-style-type: none"> ○ Sitting up, paying attention, and taking notes. ○ Working individually and with others and sharing results with the class. • Finally, it is an ABSOLUTE REQUIREMENT that you are respectful of your fellow students.
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Schedule (Subject to Change)

	Monday	Tuesday	Wednesday	Thursday
8/21-8/24	Introductions – 6.2: Differential Equations: Growth & Decay	6.2: Differential Equations: Growth & Decay – 7.1: Area of a Region Between Two Curves	7.1: Area of a Region Between Two Curves – 7.2: Volume: The Disk Method	7.2: Volume: The Disk Method
8/28-8/31	6.2, 7.1-7.2 Quiz 7.3: The Shell Method	7.3: The Shell Method	7.4: Arc Length & Surfaces of Revolution	7.4: Arc Length & Surfaces of Revolution – 7.5: Work
9/4-9/7	Labor Day – No Class	7.3-7.4 Quiz 7.5: Work	7.5: Work – 7.6: Moments, Centers of Mass, & Centroids	7.6: Moments, Centers of Mass, & Centroids – 7.7: Fluid Pressure & Fluid Force
9/11-9/14	7.5-7.7 Quiz 5.8: Hyperbolic Functions	5.8: Hyperbolic Functions	review	Test 1: 6.2-Ch7
9/18-9/21	8.1: Basic Integration Rules	8.1: Basic Integration Rules – 8.2: Integration by Parts	8.2: Integration by Parts	8.2: Integration by Parts – 8.3: Trigonometric Integrals Lab 1 Due
9/25-9/28	8.1-8.2 Quiz 8.3: Trigonometric Integrals	8.4: Trigonometric Substitution	8.4: Trigonometric Substitution – 8.5 Partial Fractions	8.5 Partial Fractions
10/2-10/5	8.3-8.5 Quiz 8.6: Integration by Tables & Other Integration Techniques	8.6: Integration by Tables & Other Integration Techniques – 8.7: Indeterminate Forms & L'Hopital's Rule	8.7: Indeterminate Forms & L'Hopital's Rule – 8.8: Improper Integrals	8.8: Improper Integrals
10/9-10/12	8.6-8.8 Quiz 9.1: Sequences	9.1: Sequences	review	Test 2: Ch8
10/16-10/19	9.1: Sequences – 9.2: Series & Convergence	9.2: Series & Convergence	9.2: Series & Convergence – 9.3: The Integral Test & p-Series	9.3: The Integral Test & p-Series Lab 2 Due
10/23-10/26	9.1-9.3 Quiz 9.4: Comparison of Series	9.4: Comparison of Series	9.5: Alternating Series	9.6: Ratio & Root Tests
10/31-11/2	9.4-9.6 Quiz 9.7: Taylor Polynomials & Approximations	9.7: Taylor Polynomials & Approximations	review	Test 3: 9.1-9.6
11/6-11/9	9.8: Power Series	9.8: Power Series – 9.9: Representation of Functions by Power Series	9.9: Representation of Functions by Power Series – 9.10: Taylor & Maclaurin Series	9.10: Taylor & Maclaurin Series Lab 3 Due
11/13-11/16	9.7-9.10 Quiz 10.2: Plane Curves & Parametric Equations	10.2: Plane Curves & Parametric Equations	10.2: Plane Curves & Parametric Equations – 10.3: Parametric Equations & Calculus	10.3: Parametric Equations & Calculus
11/20-11/23	10.2-10.3 Quiz 10.4: Polar Coordinates & Polar Graphs	10.4: Polar Coordinates & Polar Graphs	10.4: Polar Coordinates & Polar Graphs	Thanksgiving Day – No Class
11/27-11/30	10.4 Quiz 10.1: Conics & Calculus	10.1: Conics & Calculus	review	Test 4: 9.7-9.10; 10.2-10.4
12/4-12/7	10.1: Conics & Calculus – 10.5: Area & Arc Length in Polar Coordinators	10.5: Area & Arc Length in Polar Coordinators	10.6: Polar Equations of Conics & Kepler's Law	10.6: Polar Equations of Conics & Kepler's Law Lab 4 Due
12/11-12/14	10.1 & 10.5-10.6 Quiz review	Final Exam Part 1	review	Final Exam Part 2

Grading Information

Grades:	Labs: 15% Homework Quizzes (2 lowest dropped; details below): 25% Tests (4 tests at 10% each): 40% Final Exam: 20% <hr/> Course grades will be assigned using the traditional cutoffs for A, B, C, and D of 90%, 80%, 70%, and 60%, respectively and will always be available on D2L.
Withdrawal Date:	The last day to withdraw from the course, resulting in a W on your transcript, is 11/5/17.

Homework Quizzes:	<p>Success in a math class depends on your ability to successfully complete problems individually. Being able to “follow along” in class does not mean you will be successful on quizzes and tests. You need to practice math by completing problems on your own.</p> <p>Homework will not be collected; however, the questions on the homework quizzes will be selected from these exact homework exercises. Almost all exercises are odd, so you can check your progress with the answers provided in the back of the book. In addition, buying the student’s solutions manual is also strongly encouraged.</p> <p><i>Understanding the homework problems is crucial in developing the appropriate level of understanding needed to be successful in any mathematics course!</i></p>
Make-ups:	<p>Make-ups on quizzes and tests will be allowed only in extreme circumstances, of which I am notified of in advance. If a make-up is allowed, it will need to be taken before the next class period. If you are absent for any reason on a quiz or test day and do not communicate with me, you will NOT be allowed to make-up that quiz or test.</p>

College Information

Tutoring / Assistance:	<ul style="list-style-type: none"> • <u>ECC Tutoring Center</u>: If you are experiencing difficulty with the material, contact me early in the semester. In addition, ECC offers a variety of tutoring options. All ECC students enrolled in courses for credit may be eligible for free tutoring by professional tutors. Call (847) 214-7256 or visit the Tutoring Center in C230 (2nd floor of the Library) for more details. <ul style="list-style-type: none"> ○ <u>Drop-in</u>: Drop-in tutoring is free. Go as often as you like, stay as long as you need. Stop by the Tutoring Center for the current drop-in schedule. ○ <u>Private</u>: There is a small fee for some private tutoring subjects, but not all. Most subjects are free. ○ <u>Online</u>: Online tutoring is free. See the “<i>Online Tutoring</i>” bookmark or www.elgin.edu/tutoring for a complete listing of courses offered. • <u>ECC Math Lab</u>: Additionally, the ECC Math Lab in D219 is available for you to work on homework (computers and textbooks available) individually and in small groups (study rooms available), with assistance often available from an instructor working in the lab.
Closing Information:	<p>When classes and events are canceled and/or the school is closed due to inclement weather, a notification will be posted on the homepage of elgin.edu. Here are some additional ways you'll receive notifications:</p> <ul style="list-style-type: none"> • ECC's text messaging system (Rave Alert - Emergency Notification System) • Online at emergencyclosings.com • By calling 847-238-1234 and entering 847-697-1000 when asked the phone number for your school. • Day class cancellations will normally be announced by 5 a.m. • Evening class cancellations will normally be announced by 3 p.m. <p>Do not call the college's main number or the ECC Police Department for college closing information.</p>
Academic Integrity:	<p>ECC strives to foster an environment of respect for and achievement of the highest levels of academic integrity for all members of its academic community. Academic integrity and honesty are essential hallmarks of the institution's contributions to the great society and cannot be abridged without considerable harm to those who must rely upon the intellectual pursuits of the institution.</p> <p>The college has responsibilities to all those within its sphere of influence, both within the academic community itself and to the great society which supports its work. Institutional integrity can only be achieved through honesty, conscientiousness, and credibility of the members of the ECC community itself. To that end, all members of the ECC community are expected to comply with the college’s shared values.</p> <p>When an instructor identifies an act of academic dishonesty, the instructor shall determine the appropriate sanctions for the particular offense. Sanctions may include a general warning,</p>

	<p>rewriting the paper/redoining the assignment, failing the assignment, failing the course, and/or participating in the non-credit Writing with Integrity course.</p> <p>For more details on possible sanctions and the student appeal process, visit elgin.edu/aboutus.aspx?id=13086.</p>
Disability Accommodations:	<p>ECC welcomes students with disabilities and is committed to supporting them as they attend college. If a student has a disability (visual, aural, speech, emotional/psychiatric, orthopedic, health, or learning), s/he may be entitled to some accommodation, service, or support. While the college will not compromise or waive essential skill requirements in any course or degree, students with disabilities may be supported with accommodations to help meet these requirements.</p> <p>The laws in effect at college level state that a person does not have to reveal a disability, but if support is needed, documentation of the disability must be provided. If none is provided, the college does not have to make any exceptions to standard procedures.</p> <p>All students are expected to comply with the student code of conduct and all other college procedures as stated in the current college catalog.</p> <p><u>Procedure for a student requesting accommodations:</u></p> <ul style="list-style-type: none"> • Submit documentation of disability to ADA Coordinator. • Documentation will be reviewed and student will be contacted, either to provide additional information or to come in for accommodation letter(s) for faculty. • Call 847-214-7417 (TTY 847-214-7392) or email the ADA Coordinator Pietrina Probst at pprobst@elgin.edu.
Veterans:	<p>ECC is Veteran Friendly! Elgin Community College would like to thank you for your military service! Whether you are starting college for the first-time or re-entering college, we have services to make your transition from troop to student a little easier. If you have any questions, or for additional information please contact Anitra King, Career and Veterans Specialist, at (847) 214-7531 or email: aking@elgin.edu.</p>
Education Majors:	<p>If you plan to major in elementary education, special education, early childhood education, bilingual education, middle school or secondary education - be advised that there is an Illinois Testing requirements such as Basic Skills/TAP/ACT. At least SIX MONTHS BEFORE TRANSFER please get information regarding the Illinois Test requirements at www.isbe.net/certification and please see your ECC counselor to verify that your coursework if appropriate.</p> <p>In addition, as a result of ISBE Administrative Rules Part 20 and 21, the mathematics requirements for state licensure for elementary education and middle school education majors have significantly changed. These changes include statistics and college algebra content for elementary education majors and calculus I for middle school education majors. Currently there is no state standard for how these requirements should be met. Therefore, at this point we recommend you contact the transfer coordinator at the 4-year institution you intend to transfer to for specific guidance regarding the courses you should take at ECC.</p>

There is no branch of mathematics, however abstract, which may not someday be applied to the phenomena of the real world.

-Nikolai Lobachevsky

In the fall of 1972 President Nixon announced that the rate of increase of inflation was decreasing. This was the first time a sitting president used the third derivative to advance his case for reelection.

-Hugo Rossi

Good mathematics is not about how many answers you know...It's how you behave when you don't know.

-Author unknown