



## MAT 266 - Calculus for Engineers II

#43565

POLYTECHNIC CAMPUS / AGBC 160

M T W Th / 9:00 AM – 10:45 AM

### Course and Faculty Information

**Course Description:** Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, Taylor series.

**Credits:** 3

**Prerequisites:** MAT 265 or 270 with C or better.

**Instructor:** Matthew Isom

**Contact Info:** office - Wanner 240 E

**Email -** [isom@asu.edu](mailto:isom@asu.edu)

**Office Hours:** ... to be determined ...

**College Contact:** This course is offered by the [College of Integrative Sciences and Arts](https://cisa.asu.edu) (CISA). For more information about the college, visit our website: <https://cisa.asu.edu>. If you have questions about this course, please speak with your instructor. If your instructor is unable to address your questions, please send your inquiry to [cisa@asu.edu](mailto:cisa@asu.edu).

## Course Objectives

The purpose of the course is to gain a working understanding of methods of integration, applications of calculus, and elements of analytic geometry, improper integrals, and series, to include Taylor Series. All the standard methods of techniques of integration are covered. Applications of calculus include general methods where the goal is for the student to divide a quantity into small pieces, estimate with Riemann sums and recognize the limit as an integral. Taylor Series and Taylor Polynomials are covered.

## Course Learning Outcomes

At the completion of this course, students should have a mastery of the following concepts:

- Evaluate an integral using the substitution method, integration by parts, trigonometric substitution, and partial fraction decomposition.
- Approximate the definite integral using Simpson's Rule.
- Evaluate an improper integral where either the definite integral is extended to cover the case where the interval is infinite or where  $f$  has an infinite discontinuity on  $[a, b]$ .
- Determine the area of a region enclosed by given curves.
- Determine the volume of the solids of revolution obtained by rotating a region about a line using washer, disc or shell method.
- Determine the arc length of a curve.
- Determine the surface area for a volume of revolution.
- Solve applied problems involving work including the work to stretch a spring and the work to empty a tank of liquid.
- Determine if a sequence converges or diverges and find the limit.
- Determine if a series converges or diverges using geometric series or a test for divergence.
- Find a radius and interval of convergence for a power series.
- Perform differentiation and integration on known power series to create new power series.
- Find a power series representation and the interval of convergence for a given a function.
- Find either a Taylor Series or Maclaurin Series for a given a function.

## Textbooks, Required Readings and Materials

Essential Calculus early transcendentals, 2<sup>nd</sup> edition; James Stewart

## Student Success

To be successful:

- check the course daily
- read announcements
- read and respond to course email messages as needed
- complete assignments by the due dates specified
- communicate regularly with your instructor and peers
- create a study and/or assignment schedule to stay on track
- access [ASU Online Student Resources](#) or [CISA Academic Resources](#)

## Attendance Policy

Class attendance is required in the course, and attendance really is expected for each class session. If you are unable to attend class for any reason, please contact me as soon as possible.

## Grading

Your grade will be determined based on the following grading schema:

Letter Grade	Percentage
A	100-90%
B	89.999-80%
C	79.999-70%
Y	100-70%
D	69.999-60%
E	59.999-0%
EU	<59.999%
EN	0%

Students in this course may request the Y grade option. The Y grade is considered "satisfactory" and equivalent to a C or better. Only students who earn a final grade of C or better are eligible for the Y grade. If your final grade is below a C based on the grading requirements outlined by this course syllabus, then you are not eligible for the Y grade and the D or E grade will be posted.

The Y grade will fulfill prerequisite requirements of a C or better, but the grade is not used for computing the GPA.

Before requesting the Y grade, you should consider that this option may have implications for your degree program, financial aid, or scholarship requirements. You should review your major map for current and future course requirements prior to requesting the Y grade. Some classes require a grade higher than a C to count for the major or as a prerequisite for future required coursework.

If you are planning to apply to graduate or professional programs, the satisfactory Y grade in a core or prerequisite course may be less advantageous to your application than a letter grade.

Students who would like to request the Y grade option must send an email to the instructor no later than the last day of classes.

## Late or Missed Assignments

Notify the instructor **BEFORE** an assignment is due if an urgent situation arises and you are unable to submit the assignment on time.

Follow the appropriate University policies to request an [accommodation for religious practices](#), or to request accommodation for missed assignments [due to University-sanctioned activities](#) or [active military service](#).

A general policy for accepting late work:

- No LATE work is to be accepted.
- There are no automatic MAKE-UP Quizzes.
- There are no automatic MAKE-UP Mid-term exams.

## Classroom Community

To build a course climate that is comfortable for all, it is important that students (1) display respect for all members of the class – including the instructor and students; (2) pay attention to and participate in all interactive student partner/instructor sessions and activities; (3) observe the rules of appropriate online behavior and this includes keeping course discussion posts and oral communication with other students (or the instructor) focused on the assigned topics. Students must maintain a cordial atmosphere and use tact in expressing differences of opinion. In addition, they must avoid racist, sexist, homophobic, or other negative language that may unnecessarily exclude course members. This is not an exhaustive list of behaviors; rather, it represents examples of the types of things that can have a dramatic impact on the course environment.

## Email

ASU email is an [official means of communication](#) among students, faculty, and staff. Students are expected to read and act upon email in a timely fashion. Students bear the responsibility of missed messages and should check their ASU-assigned email regularly.

## Course Outline

**Week 1** / 15-19 May: chapter 5.5 through chapter 6.3

**Week 2** / 22-26 May: chapter 6.5 through chapter 6.6

- Assessment 1 – Thursday, 25 May 2023 -

Monday 29 May is a National Holiday – Memorial Day

**Week 3** / 29 May - 2 June: chapter 7.1 through 7.5

**Week 4** / 5-9 June: chapter 7.6 through chapter 7.7

- Assessment 2 – Thursday, 8 June 2023 -

**Week 5** / 12 – 16 June: chapter 8.1 through chapter 8.5

**Week 6** / 19 – 23 June: chapter 8.6 through chapter 8.7

- Assessment 3 – Monday, 26 June 2023 -

## Grading Criteria and Scale

Grades will have an assigned weight according to the breakdown outlined below.

<u>Grade Distribution</u>	
	Percent
Daily Participation	25%
Assessment #1	25%
Assessment #2	25%
Assessment #3	25%
Total	100%

## Course Time Commitment

Coursework includes all learning activities including reading, watching videos, studying, and completing assignments. Arizona Board of Regents (ABOR) requires 45 hours of coursework per credit for college-level courses, which translates to:

❖ **3 credit hours = 135 total hours**

ASU courses range in length from 6 weeks to 15 weeks. Below is a breakdown of the 135-hour required time commitment for a three-credit course.

Course Length	Time on Coursework per Week	Total Time
6 weeks	22.5 hours	135 hours

## Drop and Add Dates/Withdrawals

If you are unable to take this course for any reason, be aware that there is a limited timeline to drop or add the course. Consult with your advisor and notify your instructor to add or drop this course. If you are considering a withdrawal, review the following ASU policies: Withdrawal from Classes, Withdrawing as a Financial Aid Recipient, Medical/Compassionate Withdrawal, and a Grade of Incomplete.

## Grade Appeals

Students must first speak with the instructor of the class to discuss any disputed grades. If, after review, a resolution is not achieved, students may proceed with the appeal process. Student grade appeals must be processed in the regular semester immediately following the issuance of the grade in dispute (by commencement for fall or spring), regardless whether the student is enrolled at the university. Complete details are available in the [CISA Grade Appeals policy](#).

## Academic Integrity

Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see [provost.asu.edu/academicintegrity](http://provost.asu.edu/academicintegrity).

If you fail to meet the standards of academic integrity in any of the criteria listed on the university policy website, sanctions will be imposed by the instructor, college, and/or dean. Academic dishonesty includes, but is not limited to, cheating on an academic evaluation or assignment, plagiarizing, academic deceit (such as fabricating data or information), or falsifying academic records. Turning in an assignment (all or in part) that you completed for a previous class is considered self-plagiarism and falls under these guidelines. Any infractions of self-plagiarism are subject to the same penalties as copying someone else's work without proper citations. Students who have taken this class previously and would like to use the work from previous assignments should contact the instructor for permission to do so.

If you have any questions about your work and the academic integrity policy, please discuss your assignment or concerns with your instructor, teaching assistant, or your college Academic Integrity Officer in advance of submitting an assignment. Student resources on Sun Devil Integrity and strategies for completing your work with integrity and avoiding plagiarism are available here: [ASU Student Resources for Academic Integrity](#) or [provost.asu.edu/academicintegrity](http://provost.asu.edu/academicintegrity) for more information.

## Harassment Prohibited

ASU policy prohibits harassment on the basis of race, sex, gender identity, age, religion, national origin, disability, sexual orientation, Vietnam era veteran status, and other protected veteran status. Violations of this policy may result in disciplinary action, including termination of employees or expulsion of students. Students are encouraged to report harassment to instructors and the Dean of Students Office.

## Student Conduct

ASU and the College of Integrative Sciences and Arts expects and requires its students to act with honesty, integrity, and respect. Required behavior standards are listed in the [Student Code of Conduct and Student Disciplinary Procedures](#), [Computer, Internet, and Electronic Communications policy](#), [ASU Student Academic Integrity Policy](#), and outlined by the [Office of Student Rights & Responsibilities](#). Anyone in violation of these policies is subject to sanctions. [Students are entitled to receive instruction free from interference](#) by other members of the class. An instructor may withdraw a student from the course when the student's behavior disrupts the educational process per [Instructor Withdrawal of a Student for Disruptive Classroom Behavior](#). The Office of Student Rights and Responsibilities accepts [incident reports](#) from students, faculty, staff, or other persons who believe that a student or a student organization may have violated the Student Code of Conduct.

Students must refrain from uploading to any course shell, discussion board, or website used by the course instructor or other course forum, material that is not the student's original work, unless the students first comply with all applicable copyright laws; faculty members reserve the right to delete materials on the grounds of suspected copyright infringement.

## Title IX

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://sexualviolenceprevention.asu.edu/faqs>.

As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, <https://eoss.asu.edu/counseling>, is available if you wish to discuss any concerns confidentially and privately. ASU online students may access 360 Life Services, <https://goto.asuonline.asu.edu/success/online-resources.html>.

## Student Accessibility and Inclusive Learning Services (SAILS)

Qualified students with disabilities who will require disability accommodations in this class are encouraged to make their requests to the instructor at the beginning



of the semester either during office hours or by appointment. Note: Prior to receiving disability accommodations, verification of eligibility from the Student Accessibility and Inclusive Learning Services is required. Disability information is confidential.

**Student Accessibility and Inclusive Learning Services** ([eoss.asu.edu/drc](https://eoss.asu.edu/drc))

**Email:** DRC@asu.edu

**SAILS Phone:** 480-965-1234

**SAILS FAX:** 480-965-0441

## Tutoring

Free tutoring support is available in person and online for most courses. Services are offered through ASU's University Academic Success Programs for currently enrolled students.

- Tutoring is available in math, business, science, statistics, and engineering courses.
- Writing tutoring is available for any writing project at any stage of the writing process.
- Supplemental Instruction (SI) facilitates collaborative study groups for selected courses.
- Graduate academic tutoring is available for writing and statistics.
- Academic skills tutoring can help with critical reading, study skills, note taking, and more.
- Resources are available through our YouTube channel, Zoom recordings, and handouts.

Visit <https://tutoring.asu.edu> or call (480) 965-9072 for more information about these services, to view our schedules, or to book an appointment.

## Statement on Inclusion

Arizona State University is deeply committed to positioning itself as one of the great new universities by seeking to build excellence, enhance access, and have an impact on our community, state, nation, and the world. To do that requires our faculty and staff to reflect the intellectual, ethnic, and cultural diversity of our nation and world so that our students learn from the broadest perspectives, and we engage in the advancement of knowledge with the most inclusive understanding possible of the issues we are addressing through our scholarly activities. We recognize that race and gender historically have been markers of diversity in institutions of higher education. However, at ASU, we believe that diversity includes additional categories such as socioeconomic background, religion, sexual orientation, gender identity, age, disability, veteran status, nationality, and intellectual perspective.

## Mental Health

As a student, like anyone else, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating, and/or lack of motivation. These emotional health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. ASU Counseling Services provides counseling and crisis services for students who are experiencing a mental health concern. Any student may call or walk-in to any ASU counseling center for a same-day or future appointment to discuss any personal concern. Here is the website: [eoss.asu.edu/counseling](https://eoss.asu.edu/counseling). After office hours and 24/7 ASU's dedicated crisis line is available for crisis consultation by calling 480-921-1006.

## Establishing a Safe Environment

Learning takes place best when a safe environment is established in the classroom. In accordance with [SSM 104-02](#) of the Student Services Manual, students enrolled in this course have a responsibility to support an environment that nurtures individual and group differences and encourages engaged, honest discussions. The success of the course rests on your ability to create a safe environment where everyone feels comfortable to share and explore ideas. We must also be willing to take risks and ask critical questions. Doing so will effectively contribute to our own and others' intellectual and personal growth and development. We welcome disagreements in the spirit of critical academic exchange, but please remember to be respectful of others' viewpoints, whether you agree with them or not.

All incidents and allegations of violent or threatening conduct by an ASU student (whether on- or off-campus) must be reported to the ASU Police Department (ASU PD) and the [Office of the Dean of Students](#). If either office determines that the behavior poses or has posed a serious threat to personal safety or to the welfare of the campus, the student will not be permitted to return to campus or reside in any ASU residence hall until an appropriate threat assessment has been completed and, if necessary, conditions for return are imposed. ASU PD, the Office of the Dean of Students, and other appropriate offices will coordinate the assessment in light of the relevant circumstances.

## Prohibition of Commercial Notetaking Services

In accordance with [ACD 304-06 Commercial Note Taking Services](#), written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the note taker's name as well as the instructor's name, the course number, and the date.

## Course Evaluation

Students are expected to complete the course evaluation. The feedback provides valuable information to the instructor and the college and is used to improve student

learning. Students are notified when the online evaluation form is available. The results are always anonymous and cannot be reviewed by the instructor/department until after final grades have been posted.

## Trigger Warning

Please note that some course content may be deemed offensive by some students, although it is not my intention to offend anyone. In addition, some materials that we link with online might also be considered offensive, troubling, or difficult to review in terms of language or graphics. I attempt to provide warnings when introducing this kind of material; yet, if I forget to do so, or if something else (in my materials or posts from fellow students) seems offensive, please contact me at [isom@asu.edu](mailto:isom@asu.edu), or the faculty head, [Doug Green](#).

## Academic Affairs Manual

For a complete guide to Arizona State University course policies, please refer to the [Academic Affairs Manual \(ACD\)](#).

## Syllabus Disclaimer

The syllabus is a statement of intent and serves as an implicit agreement between the instructor and the student. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. Remember to check your ASU email and the course site often.