

MAT 4133 Advanced Placement Calculus BC 1

Fall 2025

SCHEDULE: Period 9-10 or 15-16 12-12:50 or 3-3:50 MWRF

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Office Hours: M: 8am – 8:45am; 2pm – 2:45pm

T: 10:30am-1pm

W: 8am – 8:45am; 2pm – 2:45pm; 4pm – 5:30pm

Th: 10:30am – 11:45am

F: 8am – 8:45am; 2pm – 2:45pm

and by appointment

I will also be available by email until 10pm most evenings. Any changes to these hours will be posted outside my office door and/or as a Canvas announcement.

DESCRIPTION: This course meets four days a week and covers the College Entrance Examination Board's BC syllabus in Advanced Placement Calculus. Students are encouraged to register for the AP exam and may find that their college grants them credit for up to two semesters of calculus. Topics covered in the two-semester sequence include limits, derivatives, integrals, series, vectors, and parametric equation, as well as their applications in numerous real-world problems. Treatment of these topics involves both theory and its implementation on graphing calculators, and as part of the study of these topics, we will also consider how different cultures have contributed to and approached many of these topics.

DUAL CREDIT: Ball State University offers 4 college credit hours per semester in MATHS 165 and MATHS 166 to students who pass both semesters with a grade of at least C. Successful completion of the first course is a pre-requisite for enrollment in the second course. Enrollment to the University for credit must be done at the beginning of the fall semester.

PREREQUISITE: For returning students, excellent performance in AP Precalculus EL 1-2 with teacher recommendation. For new students, placement.

COURSE CONTENT:

Chapter 1	Limits and Their Properties	1.1-1.5
Chapter 2	Differentiation	2.1-2.6
Chapter 3	Applications of Differentiation	3.1-3.9
Chapter 4	Integration	4.1-4.6
Chapter 5	Logarithmic, Exponential and Other Transcendental Functions	5.1-5.9
Chapter 6	Differential Equations	6.1-6.4
Chapter 7	Applications of Integration	7.1-7.2

TEXT: Larson, and Edwards, *Calculus of a Single Variable*, eleventh edition, 2018, CENGAGE Learning, ISBN 978-1-337-28690-9.

CALCULATOR: The TI-84 Plus calculator will be used extensively in this course. The TI-83 and TI-83 Plus calculators are similar. Use of TI-89, TI-92 and other symbolic algebra calculators will **not** be allowed for exams and quizzes in this course.

METHODS OF STUDENT EVALUATION:

- Students who have a planned absence are responsible for scheduling make-up times for missed quizzes and/or tests. This should be done ahead of time and can be arranged by email or in person.
- Students who are unexpectedly absent from class on the day of a quiz or test should either email the instructor or speak directly to the instructor immediately upon return to class to schedule a make-up time for the missed assessment. Quizzes may NOT be made up for unexcused absences. Tests may be made up for unexcused absences, but a penalty may be levied.

Exams (50%): At the end of each unit, there will be an exam covering that material. Exams are modeled on the AP Exam and that unit's material may also include content from previous units. Dates will be announced at least one week in advance. Exams may have calculator and no-calculator sections.

Quizzes (20%): There will be approximately 7-10 short quizzes.

Homework (10%): For nearly every section, there will be a homework assignment. For each section, students will be expected to either submit a digital scan of this assignment or complete a short homework quiz over that assignment on Canvas. Due dates will be listed on Canvas. What may also be included in the homework grade is projects. These are extended assignments involving challenging applications and problems that will be given either as individual or group projects.

Late Homework: One late homework quiz will be accepted with no penalty up to class time the next day. (Saturday and Sunday don't count; *Tuesday does!*) Subsequent late assignments will be accepted for up to 70% credit – with 10% being deducted each school day late. (Excused absences are not subject to late penalty – see your student handbook for school policy.) Requests for extensions will be considered on a case-by-case basis and should be made before the assignment is due.

Final Exam (20%): A comprehensive final exam will be given during the designated exam week. As the final exam is cumulative, its score may replace one lower exam score from earlier in the semester.

The following standard overall grading scale will apply:

	92.5% - 100%	A	89.5% - 92.49%	A-
87.5% - 89.49%	82.5% - 87.49%	B	79.5% - 82.49%	B-
77.5% - 79.49%	72.5% - 77.49%	C	69.5% - 72.49%	C-
	0% - 69.49%	D*		

CLASS ATTENDANCE POLICY: Attendance is mandatory. Students may receive excused absences at the professional discretion of the school nurse, the associate director of mental health services, the associate director of college counseling and student engagement, the director of academic affairs, and the executive director of the Indiana Academy. Unexcused absences occur when students miss class without prior approval from the aforementioned designated school officials. Continued absences (both excused and unexcused) from Academy classes increase the likelihood of unsuccessful completion. Alongside steady attendance, students are expected to maintain consistent healthy habits of decorum, respect, and kindness towards their classmates, instructors, and teaching assistants. When students fail to meet these classroom behavioral standards and academic habits, it is the expectation faculty engage appropriately to bring quick and immediate resolution. When students consistently fail to meet these behavioral standards and academic habits in the classroom, an administrative consequence ladder will be adopted, and recorded, in attempt to administratively address, engage, and rectify ongoing challenges.

Students are expected to attend every class and be on time. Above Academy policies on attendance and tardiness will be followed. Sleeping in class constitutes an unexcused absence. Being late more than 10 minutes is recorded as Absent. In the event of unexcused absences, make-up homework, quizzes, or exams may not be allowed. For an excused absence, assignments due that day are expected by class time the next day (not the next class day). Absence from a prior class may not allow the student to defer a scheduled quiz or exam.

ACADEMIC INTEGRITY POLICY: As a firm believer that grades should reflect learning, academic integrity is paramount to the academic experience. Please review the Academy's Academic Integrity policy as it will be strictly adhered to in my class.

Examples of behavior subject to review under the Academic Integrity policy include, but are not limited to:

- 1, Copying someone's work and turning it in as one's own
- 2, Use of aids and/or other materials on quizzes and exams without expressed permission.
- 3, Use of calculators when explicitly forbidden to do so.
- 4, Copying another person's work or answers on a quiz or exam.
- 5, Giving information about the content of quizzes or exams to students yet to take the test.

I encourage you to work in groups when doing homework assignments as much can be learned from your peers that you may not always pick up in class. However, each individual is required to turn in work in their own handwriting accompanied by the requisite work shown to receive full credit. If you have any questions about what constitutes cheating, please come to see me. In order to preserve the credibility of all students' grades, I encourage you to tell me if you observe violations of the integrity policy.

Artificial intelligence (AI) provides exciting new tools for academic work.

- It is appropriate to use AI to explore solutions and to discover methods of approaching problems in homework situations. AI used as a learning tool can increase and support student understanding.
- AI also poses significant dangers for academic integrity. Passing off as your own any research, words, ideas, work, or solutions which you did not create is plagiarism. Whether the source is print, internet content, or generated by AI, copying work from outside resources and presenting it as your original work is not allowed. Use of AI should be properly documented.

CELL PHONES: Cell phones and other mobile devices should not be accessed or visible in the classroom. Be sure to disable device so that it will not ring, buzz, shake, or otherwise interrupt class. Enjoy the text-free hour.

IA WIRELESS DEVICE POLICY: Pursuant to Indiana Code 20-26-5-40.7, The Indiana Academy for Science, Mathematics and Humanities prohibits student use of wireless communication devices for non-instructional purposes in the classroom. As such, any and all portable wireless devices, that have the capability to provide voice, messaging, or other data communication between two or more parties, must only be used for academic purposes directly tied to the classroom activity or related educational task. Exceptions to this wireless device policy are eligible through academic accommodations, individualized education programs, or with instructor approval permitting the use of a wireless device for justification related to health, safety, and/or well-being. The improper use of a wireless device in an active classroom setting is subject to disciplinary action including but not limited to; a verbal warning, temporary seizure of said device by a school official, an unexcused absence for the class in question, written communication to parent/guardian, among other elevated consequences for repeated improper use.

LAPTOP COMPUTERS: The graphing calculator will be the primary technology in this course, and little use of laptop computers is anticipated.

METHODS OF COURSE EVALUATION: Evaluation, including student evaluation of the course, will be conducted according to Academy policy.

Ball State University aspires to be a university that attracts and retains outstanding faculty, staff, and students. Ball State is committed to ensuring that all members of the campus community are welcome through our practice of valuing the varied experiences and worldviews of the people whom we serve. We promote a culture of respect and civil discourse as evident in our Beneficence Pledge. As a reflection of Ball State's commitment to respect, civil discourse, and the Beneficence Pledge, inclusiveness at the Indiana Academy emerges as one of the priorities of our living and learning community. We strive to exist together respectfully and compassionately, creating an environment where every member can thrive.