

## BISMARCK STATE COLLEGE

Bismarck State College, an innovative community college, offers high quality education, workforce training, and enrichment programs reaching local and global communities.

**CURRENT SEMESTER:** Fall 2018

**COURSE:** Math 165 Calculus I

**CREDIT HOURS:** 4 semester hours

**INSTRUCTOR CONTACT INFORMATION:**

Katrina Eberhart, Associate Professor of Mathematics

Office: JSC 101G

Office phone: 701.224.2612

katrina.eberhart@bismarckstate.edu

Office hours: MTW 8:30 – 9; 3 – 3:30; R 9 – 10; 11 – 12; F 10 – 11; or by appointment.

**COURSE MATERIALS:** *Text:* APEX Calculus I Late Transcendentals, by Gregory Hartman, revised for Bismarck State College

*Required Reading Guide:* APEX Calculus I Late Transcendentals Reading Guide, by Michele Iams and Gwennie Byron

*Required Calculator:* You must have a graphing calculator, as it will be used extensively. I recommend a TI-83+ or TI-84+, as this is the model that will be used in class demonstrations.

**NOTE:** Calculators with a computer algebra system (TI-89, TI-Nspire, etc.), cell phone calculators, and downloadable apps for other electronic devices **will not** be allowed on exams.

**COURSE DESCRIPTION:** *Prerequisite:* Math 107, or qualifying ACT or placement score. In this course, topics we will cover include analytic geometry, limits and continuity, derivatives with applications, L'Hôpital's rule, anti-differentiation, the Fundamental Theorem of Calculus, and numerical integration.

**COURSE OUTCOMES:**

Course Learning Outcomes	Program Learning Outcomes	Institutional Essential Learning Outcomes (IELOs)
Understand the concepts of the derivative as representing rate of change and the definite integral as representing area and distance	Demonstrate competence in a variety of mathematics courses including algebra, finance, calculus, differential equations, linear algebra, and statistics by analyzing, mathematically modeling, and solving a variety of problems, then interpreting the solution utilizing reflective decision making.	Quantitative Literacy
Develop problem solving skills, especially showing how to model a written description of a physical situation with a function, differential equation, or an integral		Quantitative Literacy
Communicate mathematics by explaining solutions both verbally and in written sentences and judging the reasonableness of said solutions		Quantitative Literacy
Use technology to help solve problems, experiment, interpret results, and support conclusions		Quantitative Literacy

The BSC Institutional Essential Learning Outcomes can be found at <https://bismarckstate.edu/uploads/0/BSCsInstitutionalEssentialLearningOutcomes.pdf>

**UNIT OBJECTIVES:** As defined by the North Dakota University System upon completion of the course, students will:

1. be able to work with functions, their derivatives, and their applications.
2. be able to work with definite integrals and their applications.
3. be able to work with the notion of limits and their applications.
4. be able to understand continuity.
5. be able to use the Mean Value Theorem and its applications.
6. demonstrate an understanding of how to solve problems using the Fundamental Theorem of Calculus.

**ACTIVE LEARNING:** In addition to educational strategies such as reading, listening, and reflecting, when appropriate this class makes use of learning techniques commonly known as active learning. Students should expect to participate in active learning techniques such as discussions and presentations, small group activities, writing, problem-solving, movement, case studies, role-playing, etc. These activities promote analysis, synthesis, and evaluation of class content in order to improve student learning outcomes.

**ASSESSMENT METHODS:** During the course you will be asked to do various assignments from within different groupings which have a different weight. Your final grade will be determined using the following categories.

**CLASS PREPERATION/ASSIGNMENTS (20%):** Each section we complete will have a companion reading guide assignment to be completed for class. Random pages of the reading guide will be collected. If not present on a day these are collected, a zero will be given. Eight to ten assignments for collection will also be given periodically. Assignments are due at the start of class: late assignments will not be accepted.

**UNIT EXAMS (65%):** There will be 4 unit exams this semester. Even though exams may have different point totals, each holds the same weight in this category. Exact exam dates will be announced in class. I must be notified *prior to an exam* if you are going to be absent, and we can discuss a time to take the exam. If I am not notified before the exam, I will not give a make-up exam.

**FINAL EXAM (15%):** There will be a comprehensive exam on Tuesday, December 11, at 10 a.m.

**GRADING:** If you have questions about your grade at any time, I will be happy to discuss it with you. The final letter grade for this course will be based on the following percentages:

100 – 90	A
89 – 80	B
79 – 70	C
69 – 60	D
59 – 0	F

**ATTENDANCE/MAKE-UP:** Although attendance will not be formally taken, **it is crucial if you intend to do well in this class.** I expect to see you in class every day and that you work for the entire hour. If there is some reason you cannot make it, remember that when you are absent, you are responsible for the material that has been covered.

## **POLICIES AND PROCEDURES:**

**ACADEMIC HONOR CODE:** Students at BSC are expected to be honorable in behavior and above reproach in pursuit of their academic achievements. Cheating, plagiarism, or collusion in class work, laboratory performance, shop work, or test taking is unacceptable and subject to disciplinary action. More information can be found at

<https://bismarckstate.edu/uploads/resources/356/studentacademicahonorcode.pdf>.

**ACCESSIBILITY:** If you have a disability that may limit your ability to fully participate in this class, please contact the Student Accessibility Office (SAO) at 224-5671. Personnel from the SAO will work with you and your instructor to arrange for reasonable accommodations after you have completed the registration process and it has been determined that you qualify.

**CAMERA/VIDEO RECORDING:** Photographic, audio, and video recording of this class and/or the instructor are prohibited unless specifically requested by a student and approved/authorized in writing by the instructor or the Student Accessibility Office.

**EMAIL:** Please note that I will only correspond with students through their BSC email account. Student Email Policy states: “In an effort to protect student privacy and better ensure student authenticity, official email exchanged between registered students and BSC personnel requesting a response shall require the response be exchanged from the student’s official email address (i.e., [NDUS ID@bismarckstate.edu](mailto:NDUSID@bismarckstate.edu)). This policy is for the protection of faculty, staff, and students.” More information can be found at <https://bismarckstate.edu/uploads/resources/1197/studentemailpolicy.pdf>.

**MILITARY/VETERAN STATEMENT:** If you are currently or have served in the military, please contact the Veterans Services Office at 224-5779 regarding services/benefits to which you may be entitled.

**DROP/WITHDRAWAL DEADLINES:** Term dates can be found on Campus Connection in the class details. Drop and withdraw dates for each term can be found at <https://bismarckstate.edu/academics/records/calendarsdeadlines/>.

**STUDENT RIGHTS AND RESPONSIBILITIES:** Student rights and responsibilities along with student policies can be found at [https://issuu.com/bismarckstatecollege/docs/bsc\\_student\\_rights\\_and\\_responsibili?e=19734813/52188116](https://issuu.com/bismarckstatecollege/docs/bsc_student_rights_and_responsibili?e=19734813/52188116)

**TITLE IX:** For more information on sexual misconduct/Title IX please go to the BSC home page ([www.bismarckstate.edu](http://www.bismarckstate.edu)), scroll to the bottom and click on Title IX.

**GUEST SPEAKER STATEMENT:** Bismarck State College is committed to presenting timely, innovative, educational opportunities for its students. As part of those efforts, BSC faculty may invite guest speakers to address the student members of this course. Under FERPA regulations, such guest speakers are considered volunteers who serve a legitimate educational interest to institutional services or functions. Guest speakers will be informed by the faculty member of their responsibilities under FERPA to ensure student privacy. For more information, please visit the Department of Education’s FERPA Student Privacy webpage at <https://studentprivacy.ed.gov/>

**COURSE OUTLINE:** The course is organized by units. The following is a tentative schedule:

Unit 1: weeks 1 – 4

Unit 2: weeks 5 – 8

Unit 3: weeks 8 – 12

Unit 4: weeks 12 – 16

Final exam: week 17 (Tuesday, December 11 at 10 a.m.)

**TUTORING:** Math tutors are available at the Sykes Student Success Center in the walkway between the Jack Science Center and Schafer Hall. Please take advantage of the free, drop-in services offered. There is also a link to a free, online, 24/7 tutoring service (Smart Thinking) in the Blackboard course shell.

**BLACKBOARD (Bb):** As a supplement to the course, documents and materials used in class will be available on Bb. Course grades will be updated periodically on this site throughout the semester. For access, visit

<https://online.bismarckstate.edu> or use the Online Campus link from the BSC homepage. If you have not used Bb before, your username and password are the same as your Campus Connection login information. If you have problems logging in, contact the Distance Learning Office at 701.224.5779 or 701.224.5766.

**CLASS EXPECTATIONS:** I have high educational expectations of my students and believe those expectations can be met. The following is at minimum what is expected of you during this semester.

**1. Prerequisite content knowledge.** To be a successful calculus student, I expect you to have knowledge of algebra, geometry, trigonometry, and elementary functions (including linear, polynomial, rational, exponential, logarithmic, trigonometric, inverse trigonometric, and piecewise-defined functions). You should be familiar with the properties and graphs of these functions. You should also understand the language of functions (including domain, range, zeros, intercepts, etc.) and know the exact values of trigonometric functions of common angles on the unit circle (e.g.,  $0$ ,  $\frac{\pi}{6}$ ,  $\frac{\pi}{4}$ ,  $\frac{\pi}{3}$ ,  $\frac{\pi}{2}$ , and their multiples) without referring to technology. If you are uncomfortable with any of the aspects just described, this may not be the course for you.

**2. Respectfulness.** I expect you to be respectful of those around you throughout this course. This includes (but is not limited to) your behavior, whether it be inappropriate actions during class or even simply being distracted by your cell phone.

**3. Focus.** I expect for the 50 minutes you are in this room, your focus is on math. The group-style learning activities are for your benefit: it is extremely important you work hard for the time you are here.

**4. Responsibility.** I expect you to be responsible for your own education. Part of being responsible includes (but again, is not limited to) regulating your learning behaviors—knowing how much time you need outside of class to master material, seeking help when subject matter is unclear, not waiting until the last minute to study or complete assignments, not giving up when problems take more than 10 minutes, etc. You will get out of this class what you put in to it!

**5. Preparedness.** I expect all assigned readings and reading guide pages completed prior to coming to class. Furthermore, preparedness includes bring necessary materials to class. It is your responsibility to have a writing utensil, a calculator, etc.