

**Nashville State Community College**  
**STEM Division**  
**Mathematics Program**

**2018 Master Course Syllabus**

**MATH 1910 – Calculus I**

**Course Information:**

**Course Title:** MATH 1910 – Calculus I

**Credits:** 4

**Class Hours:** 4

**Course Description:**

An introductory first course in the traditional three-course calculus sequence. Topics include plane analytical geometry, function theory including limits and continuity, the differential and integral calculus of algebraic, trigonometric, and transcendental functions of one independent variable, curve sketching, maxima and minima, and related rates.

Prerequisites: Math 1710 and 1720, or Math 1730

**Instructor Information:**

**Name:**

**Email:**

**Office Phone:**

**Office Location:**

**Office Hours:**

**Required Textbook(s) & Other Materials:**

**Textbook:** Calculus, Early Transcendentals, 2<sup>nd</sup> Edition by Briggs, Cochran, & Gillett

**ISBN:** 0321947347

**Access Code:** Some instructors may only require a MyMathLab access code that contains an e-text and may be used for homework and/or quizzes. ISBN: 032119991X

**Optional:** Student Solutions Manual, ISBN: 0321954327

**Supplies:** A graphing calculator is strongly recommended or required. The TI-84+ calculator will be the demonstration tool in the classroom. A TI-89 calculator or other software that performs symbolic manipulations may **not** be used for exams.

Once enrolled, all students should verify that they have the correct textbook and materials information by consulting the D2L/NS Online shell for the course. If you are registered with the Access Center and

require an alternate format for the textbook and other course materials, please contact the Access Center at 615-353-3721, 615-353-3741, or [accesscenter@nsc.edu](mailto:accesscenter@nsc.edu).

### **Course Outcomes:**

Upon successful completion of this course, students should be able to:

- Solve problems using mathematics and determine if solutions are reasonable.
- Apply mathematical concepts to solve real-life problems using formulas (deduction) and interpret the meaning of the solution.
- Construct meaningful connections (transfer of knowledge) between mathematics and other disciplines.
- Apply technology for mathematical reasoning and problem solving.
- Analyze data/graphs by using mathematical modeling and/or statistical reasoning.

### **Course Competencies:**

The following are detailed course competencies intended to support the course outcomes:

- Evaluate limits numerically, graphically, and algebraically.
- Apply differentiation rules to algebraic and transcendental functions, which includes explicit and implicit differentiation.
- Formulate word problems in mathematical terms to solve related rates and optimization applications.
- Apply integration rules to algebraic and trigonometric functions, which includes the substitution method.

### **Topics to Be Covered:**

- Review of Functions (optional)
- Representing Functions (optional)
- Inverse, Exponential, and Logarithmic Functions (optional)
- Trigonometric Functions and their Inverses (optional)
- The Idea of Limits
- Definitions of Limits
- Techniques for Computing Limits
- Infinite Limits
- Limits at Infinity
- Continuity
- Precise Definition of Limits
- Introducing the Derivative
- Working with Derivatives
- Rules of Differentiation
- The Product and Quotient Rules
- Derivatives of Trigonometric Functions
- Derivatives as Rates of Change
- The Chain Rule
- The Natural Logarithmic and Exponential Functions
- Logarithmic and Exponential Functions with Other Bases

- Inverse Trigonometric Functions
- Implicit Differentiation
- Derivatives of Logarithmic and Exponential Functions
- Derivatives of Inverse Trigonometric Functions
- Related Rates
- Maxima and Minima
- What Derivatives Tell Us
- Graphing Functions
- Optimization Problems
- Linear Approximation and Differentials
- Mean Value Theorem
- Newton's Method (optional)
- Antiderivatives
- Approximating Areas Under Curves
- Definite Integrals
- Fundamental Theorem of Calculus
- Working with Integrals
- Substitution Rule

### **Course Assessments:**

The following performance assessments will be used to demonstrate students' understanding, knowledge, and skills:

In-class exams, homework and/or quizzes, and a comprehensive final exam.

### **Grading Policy:**

Each instructor will provide their grading policy.

### **Late Work Policy & Make-up Procedures for Missed Assignments and Work:**

Each instructor will provide their policies for late work and make-ups.

### **Attendance Policy**

Students are expected to attend all scheduled classes and laboratories. Absences in a course may affect a student's final grade. The student is responsible for all assigned work in the course regardless of excused or unexcused absences. Tardiness may also affect a student's final grade.

In online courses, attendance is signaled by logging on to the D2L/NS Online shell, participating as prompted (e.g., responding to an instructor's email, posting to a discussion board) and/or completing and submitting assignments. Campus closures do not affect attendance and assignment completion in online courses.

## Grading Scale:

Letter Grade	Percentage Range
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

### FA

According to NSCC policy, if a student fails a course, but has not officially withdrawn from the course, and her/his last date of attendance is before the last date to withdraw, the student will receive a grade of FA (i.e., "Failure for Attendance Reasons").

### FN

An FN is awarded to students who never attended class.

## Technology Statement

Nashville State's classes are considered to be web-enhanced. Faculty have an expectation that students will use a computer and the Internet to complete assignments, engage in online discussions, and access various course materials through D2L/NS Online course shells. Computers are available for student use at each campus during campus open hours.

## D2L/NS Online and myNSCC

It is students' responsibility to check D2L/NS Online course shells for all enrolled courses and myNSCC, including student email, on a regular basis. These are the official communication channels between the college and students, who are responsible for the information communicated through those channels. D2L/NS Online contains specific course information and myNSCC contains information important for other purposes.

## ADA Compliance Statement

Nashville State complies with the Americans with Disabilities Act (ADA). If you require accommodations for any courses in which you are enrolled, contact the Access Center at 615.353.3741 or 615.353.3721, or e-mail [accesscenter@nsc.edu](mailto:accesscenter@nsc.edu). If you are registered with the Access Center and require an alternate format for the textbook and other course materials, please contact the Access Center.

## Classroom Misconduct

Nashville State Community College has a zero-tolerance policy for disruptive conduct in the classroom. Students whose behavior disrupts the classroom will be subject to disciplinary measures. Please review the [Nashville State Student Code of Conduct policy](#). Please be aware that children are not allowed in class or to be left unattended on campus.

## Academic Misconduct

Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. Students are responsible for understanding and abiding by the [Academic Misconduct Policy](#) in the Nashville State Student Code of Conduct. In addition to other possible disciplinary measures that may be applied through regular college procedures as a result of academic dishonesty, the instructor has the

authority to assign an “F” or a “zero” for the exercise, paper, or examination, or to assign an “F” for the course. Students may appeal through the appropriate college grade appeal procedures.

### **Academic Early Alert System**

Nashville State Community College uses an Early Alert System to let students know of a faculty member’s concern in one or more of these academic areas: lack of attendance, lack of classroom participation, late or missing assignments, and/or poor performance on assignments/tests. \*Please note that Early Alerts do not affect a student’s academic standing. If you receive an Early Alert email, please see your instructor and your academic advisor as soon as possible.

### **RAVE Emergency Alert System**

Emergency events can happen at any time and Nashville State Community College wants to be able to notify students if and when they occur. For this reason, all students have been enrolled in the free RAVE alert system. If you have not already done so, please log in at <https://www.getrave.com/login/nsc> to confirm and update your contact information and notification preferences. It is critical that your information be correct so that you will receive any emergency notifications. Your RAVE Username is your NSCC email address. If you've never received an email from RAVE with your password, or if you need to reset your password, select “Forgot your password?” and a new password will be emailed to you. Should the RAVE system indicate “user not found”, select Register and create your own RAVE account.

### **Inclement Weather & Campus Closings**

Nashville State will use the RAVE alert system to send a text message to students, staff, and faculty about adjusted hours of operation and/or closings at individual campuses. All students should check the Nashville State web site home page at [www.nsc.edu](http://www.nsc.edu) for announcements on campus closures, which may vary from campus to campus. Campus closures will also be announced on local television stations. Students should use their own best judgment in determining whether to report to campus during inclement weather when classes are not cancelled.

Even when campuses are closed, students are still responsible for completing all assigned work. When classes are cancelled, faculty will post online assignments and any additional instructions in the D2L/NS Online course shell. Check D2L/NS Online for a message from your instructor regarding your online assignment requirements. Faculty have discretion over adjusting deadlines or due date for assignments, but students are responsible for completing all assigned work by the due date established by the instructor.

### **Class Cancellation Policy**

If the class is cancelled, the instructor will notify all students by posting in the D2L/NS Online course, e-mailing through D2L/NS Online, and/or by posting a sign on the classroom door. In the event of class cancellation, students must access D2L/NS Online to complete classwork and the assignment that will be posted in the course D2L site.