COURSE INFORMATION SHEET
# MATHEMATICS 149- Introductory Calculus

**Lecture:**     Tuesdays and Thursdays     9:45AM – 11:00 AM     A2212
**Tutorial:**    Monday                     9:45AM – 11:00 AM     A2151

**Calendar Description:** (3-2) A
This course teaches functions and graphing, integrals and derivatives, as well as exponential, trigonometric, and logarithmic functions.

**Prerequisite:** Math 30
*Note:* Students may not receive credit for both MA 149 and the former MA 151

**Instructor:**   John Wiest
**E-mail:**       jwiest@ambrose.edu
**Office:**       G2202
**Office Hours:** Mon 11:00 AM-1:00 PM,  Tue 1:00 PM-3:00PM, or by appointment

**Text:**  *Calculus: Early Transcendentals*
Jon Rogawski
W.H. Freeman & Co.

**Attendance:**
Students are expected to attend all lectures and tutorials to ensure success on quizzes, exams, and assignments.  All quizzes will be administered during tutorial hours.  Students not attending lectures may find themselves missing information not covered in the textbook.  Any student who is absent for a quiz or exam should speak to the professor and, where possible, provide a doctor's note when applicable.

**Course Information:**
The course consists of 2½ hours of lecture and 1¼ hour of lab/tutorial per week. As mentioned above, quizzes will be written during lab/tutorial hours.  The best 4 marks on quizzes will be taken in for grades. Otherwise, the tutorial is a space where students will be asked to practice and demonstrate their growing knowledge of the course material. There will be five assignments consisting of assigned problems from your textbook.  While all assigned questions will be required for submission, only a select few solutions, chosen by the instructor after submission, will be graded. Assignments should be handed in on loose leaf paper, written by hand, and be titled with the assignment number, the student's first and last names, as well as their student identification number. Assignment due dates will be discussed in class by the instructor.

**Learning Objectives:**
By the end of the course, students should
1) Gain a greater conceptual understanding of the real numbers and the number line.
2) Understand limits of functions at specific points both conceptually and procedurally.
3) Understand the definition of the derivative, learn how to compute it, and learn many of its uses.
4) Understand the definition of the integral, learn how to compute it, and learn some of its uses.

The following is a tentative schedule for the topics that will be covered in the course (as well as some important dates.

| Week of | Topic |
|---|---|
| Sept. 08 | Remembering Algebra, Real Numbers and Functions |
| Sept. 13 | Real Numbers, Functions and Graphs; Linear and Quadratic Functions; The Basic Classes of Functions |
| **Sept. 17** | **Last day to enter or withdraw from a course without penalty.** |
| Sept. 20* | Trigonometric Functions |
| Sept. 27 | Inverse Functions; Exponential and Logarithmic Functions; Limits |
| Oct. 04* | Limits; Basic Limit Laws; Continuity; Evaluating Limits; Trigonometric Limits |
| **Oct. 11** | **Thanksgiving Monday (no Tutorial)** |
| Oct. 12 | Intermediate Value Theorem; Definition of the Derivative; Differentiation Rules; Rates of Change; Higher Derivatives |
| Oct. 18* | Derivatives of Trigonometric Functions; The Chain Rule; Implicit differentiation; Derivative of the Inverse |
| Oct. 25 | Derivatives of Exponential and Logarithmic Functions Related Rates |
| Nov. 01!!!!!!!!!!!!! | Linear Approximation; Extreme Values; Mean Value Theorem |
| Nov. 08 | Graph Sketching; Optimization; |
| **Nov. 11** | **Remembrance Day (No Classes)** |

| Nov. 17* | L'Hopital's Rule; Antiderivatives; Approximating Area; |
| Nov. 22 | The Definite Integral; The Fundamental Theorem of Calculus |
| Nov. 29* | The Method of Substitution; Area between two curves |
| Dec. 06 | Finishing up and Review-ish stuff |

**Final Exam Schedule to be announced by registrar's office.**
Weeks with a (*) are those in which a quiz will be administered. The Midterm will be on November 02 during regular lecture time.

**Marking:**

| | |
|---|---|
| Assignments | 15% |
| Quizzes (best 4 out of 5) | 25% |
| Midterm | 25% |
| Final    (cumulative) | 35% |

**Grading Scheme**

| | | | | |
|---|---|---|---|---|
| A | 90-100% | | C | 63-66% |
| A- | 85-89% | | C- | 60-62% |
| B+ | 80-84% | | D+ | 54-59% |
| B | 76-79% | | D | 50-53% |
| B- | 70-75% | | F | Below 50% |
| C+ | 67-69% | | | |

*It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Student Handbook and Academic Calendar. Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.*

*Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a "Course Extension" from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the appropriate deadline (as listed in the Academic Calendar http://www.ambrose.edu/publications/academiccalendar). Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."*

*We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university*

*college. Students are expected to be familiar with the policies in the current Academic Calendar and the Student Handbook that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean.*

*Students are advised to retain this syllabus for their records.*

*Course changes, including adding or dropping a course, may be made during the Registration Revision period, as outlined in the Calendar of Events. All course changes must be recorded on a Registration form, available from the Office of the Registrar. Due to circumstances such as class size, prerequisites or academic policy, the submission of a Registration form does not guarantee that a course will be added or removed from a student's registration. Students may change the designation of any class from credit to audit up to the date specified in the Calendar of Events, although students are not entitled to a tuition adjustment or refund after the Registration Revision period.*

*Withdrawal from courses after the Registration Revision period will not be eligible for tuition refund. Students intending to withdraw from some or all of their courses must submit a completed Registration form to the Registrar's office. The dates by which students may voluntarily withdraw from a course without penalty are listed in the Calendar of Events. A grade of 'W' will be recorded on the student's transcript for any withdrawals from courses made after the end of the Registration Revision period and before the Withdrawal Deadline (also listed in the Calendar of Events). 'W' grades are not included in grade point average calculations. A limit on the number of courses from which Academic a student is permitted to withdraw may be imposed. Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.*

*An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Office of the Registrar in writing within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of $50.00 must accompany the appeal to review final grades. If the appeal is sustained, the fee will be refunded.*

*Academic dishonesty is taken seriously at Ambrose University College as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to give credit to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from Ambrose. Students are expected to be familiar with the policy statements in the current academic calendar and the student handbook that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.*

# Problems to Try from the Textbook

For the sake of your sanity, don't try ALL of the problems. Just try enough to make you feel comfortable with the process involved.  DO make sure you try some of the later problems in each section (i.e. don't restrict yourself to the simpler ones at the beginning of each section).

| Section | Problems |
|---|---|
| 1.1 | All Preliminary Questions, 2 – 18, 19, 21, 23, 25, 26, 27, 28, 30, 36 – 39, 40 – 47, 59, 60, 61 – 66, 68, 70, 71, 72, 75 |
| 1.2 | 1 – 20, 21, 25, 26, 30, 31, 33, 34 – 41, 44, 45, 50, 51, 53, 54, 56 |
| 1.3 | 1 – 8, 27, 28, 29, 32, 33, 34, 36 |
| 1.4 | All Preliminary Questions, 1, 2,  5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 18 – 26, 28, 30, 31 – 34, 41 – 50, 52, 54, 55 |
| 1.5 | 1 – 6, 8 – 15, 17, 19, 23 – 28, 29 – 38, 39 – 42, |
| 1.6 | All Preliminary Questions, 1, 2 – 10, 11 – 22, 23, 25 – 30 |
| 2.1 | 1 – 16, 19, 22, 23, 25, 26, 33, 34 |
| 2.2 | All Preliminary Questions, 1, 3, 5, 7, 8, 9, 10, 11 – 16, 21, 22, 23, 24, 25, 26, 27, 28, 37, 38, 39, 44, 45, 46, 47 – 49 |
| 2.3 | 31 – 22, 25 – 28, 29, 30, 31 |
| 2.4 | 1, 2 – 4, 6, 7 – 16, 17, 18, 19, 20, 51, 52,  53 – 56, 57, 58, 59 – 68, 79 – 82, 83, 84, 85, 86 |
| 2.5 | 1 – 32, 43 – 52 |
| 2.6 | 1 – 8, 9 – 16, 19 – 32, |
| 2.7 | 1 – 16, 17, 21, 22, 23, 24 |
| 3.1 | 1, 2, 3 – 6, 7,8, 11 – 14, 21, 23, 25, 27, 29, 32, 34, 35, 37, 43, 53 – 58, 64, 69, |
| 3.2 | 1 – 8, 9 – 16, 17 – 20, 21, 23 – 32, 47, 48, 49, 51, 53, 55, 56, 57, |
| 3.3 | 1 – 6, 7 – 12, 13 – 16, 17 – 27, 42, 45, 46, 47, 48, 49 – 52 |

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|---|---|
| 3.4 | 1, 2, 3, 5 – 8, 9 – 10, 13, 16, 20, 21, 23, 28, 29, 30, 31, 32, 33, 38, 43, 45, 47, 49 |
| 3.5 | 1 – 28, 33, 34, 35, 36, 39, 40, 43 |
| 3.6 | 1 – 26, 31 – 38, 42, 43, 44, 51 |
| 3.7 | All Preliminary Questions, 1 – 4, 5, 6, 7, 15 – 72, 78, 79 – 82, 90, 92, 93 |
| 3.8 | 1, 2, 3 – 26, 29, 30, 31, 35, 36, 39 |
| 3.9 | 1,2, 3 – 8, 10, 11 – 16 |
| 3.10 | 1 – 48 |
| 3.11 | 1 – 38 (For your sanity's sake, don't try all of them.  PLEASE) |
| 4.1 | 1 – 6, 8 – 15, 34, 35, 36, 37, 53 – 61, 64 |
| 4.2 | All Preliminary Questions, 1, 2, 3 – 14, 15, 16, 17, 23 – 56, 59 – 62, 78, 79, 80, 81, 82 |
| 4.3 | 1 – 10, 12, 13, 14, 15 – 18, 25 – 52, 54, 57, 61 |
| 4.4 | 1,2, 7 – 18, 23 – 36 |
| 4.5 | 1, 2, 3 – 6, 13 – 36,  51 – 70, 75, 76 – 91 |
| 4.6 | 1- 53 (Again, DON"T try them all, and don't get discouraged if you get stumped on some of them) |
| 4.7 | 1 – 48 |
| 4.9 | 1 – 42, 43, 44, 47 – 62, 63 – 68, 71, 73, |
| 5.1 | 13 – 24 |
| 5.2 | 11, 12, 13, 14, 15, 16 |
| 5.3 | 5 – 40, 41 – 46 |
| 5.4 | All Preliminary Questions 1, 2, 3, 4, 5, 6, 7 – 14, 15 – 18, 24, 25 |
| 5.5 | 1, 3, 5, 7, 17, 18, 19, |

5.6             All Preliminary Questions, 1 – 28, 33 – 70, 74

5.7             1 – 10, 13 – 70

6.1             1 – 18, 27 - 45