



MATH-M 211 Calculus I – Fall 2015

Bedford-North Lawrence High School

Credits	4	General Education Breadth of Inquiry CASE	Mathematical Modeling; Natural & Mathematical Sciences N&M
Instructor	<a href="#">Hilary Whitaker</a>	Office	1350
Email	<a href="mailto:whitakerh@nlcs.k12.in.us">whitakerh@nlcs.k12.in.us</a>	Office Hours	3:00-3:30
Meeting Times	Daily	Meeting Location	1350
Prerequisite(s)	M211: Two years of high school algebra, one year of high school geometry, precalculus math (or its equivalent), and trigonometry; or both M025 and M026	Lab fees	
Course Description	M211: Limits, continuity, derivatives, definite and indefinite integrals, applications. A student may receive credit for only one of the following: M119, M211, J113. Credit not given for both M211 and X201. A combination of M119 and X201 is equivalent to M211 as preparation for M212. The combination of J113 and X201 is not advised as preparation for M212.		
Core Transfer Library Course	Yes, CTL Name: Calculus, Long 1		
Textbook Title & Author	<a href="#">Calculus, Early Transcendentals, Larson &amp; Edwards, 5th edition, Cengage</a>		
Learning Objectives	<p>Mathematical Modeling courses provide rigorous instruction in fundamental mathematical concepts and skills presented in the context of real-world applications. The modeling skills provide analytical methods for approaching problems students encounter in their future endeavors.</p> <p>Students proficient in Mathematical Modeling should demonstrate the ability to</p> <ul style="list-style-type: none"> <li>• create mathematical models of empirical or theoretical phenomena in domains such as the physical, natural, or social science;</li> <li>• create variables and other abstractions to solve college-level mathematical problems in conjunction with previously-learned fundamental mathematical skills such as algebra;</li> <li>• draw inferences from models using college-level mathematical techniques including problem solving, quantitative reasoning, and exploration using multiple representations such as equations, tables, and graphs;</li> <li>• take an analytical approach to problems in their future endeavors.</li> </ul> <p>Course-specific objectives: Students should be able to</p>		

	<ol style="list-style-type: none"> <li>1. Calculate limits where a function is not defined,</li> <li>2. Recognize where a function is continuous,</li> <li>3. Calculate derivatives a limit of difference quotients,</li> <li>4. Calculate using rules of differentiation the derivatives of elementary functions (polynomials, exponential and trigonometric functions, logarithms) and algebraic combinations thereof,</li> <li>5. Compute local, global extrema, points of inflection, and plot such functions</li> <li>6. Solve optimization problems,</li> <li>7. Solve related rate problems,</li> <li>8. Calculate definite integrals by the fundamental theorem of Calculus, using substitution to find antiderivates</li> </ol>							
How IU Grade will be Calculated	Semester grades based on two nine week grades. Each nine week grade based on total points of quizzes, notebooks, and tests. <table style="margin-left: 40px;"> <tr> <td>1<sup>st</sup> Semester</td> <td>35%</td> </tr> <tr> <td>2<sup>nd</sup> Semester</td> <td>35%</td> </tr> <tr> <td>Final Exam</td> <td>30%</td> </tr> </table>		1 <sup>st</sup> Semester	35%	2 <sup>nd</sup> Semester	35%	Final Exam	30%
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2 <sup>nd</sup> Semester	35%							
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IU Grading Scale	Suggested							
	A+: 98-100%	C+: 77-79.9%						
	A: 93-97.9%	C: 73-76.9%						
	A-: 90-92.9%	C-: 70-72.9%						
	B+: 87-89.9%	D+: 67-69.9%						
	B: 83-86.9%	D: 60-66.9%						
	B-: 80-82.9%	D-: 60-62.9%						
High School Grading Scale	BNL High School Scale							
	A: 93.5-100%	C: 72.5-81.4%						
	A-: 92.5-93.4%	C-: 71.5-72.4%						
	B+: 91.5-92.4%	D+: 70.5-71.4%						
	B: 83.5-91.4%	D: 66.5-70.4%						
	B-: 82.5-83.4%	D-: 65.5-66.4%						
	C+: 81.5-82.4%	F: 65.4% & below						
Schedule of	<u>Chapter-Section</u>	<u>Assignment</u>						

Assignments	1-5	1, 6, 10, 11, 15, 18, 37, 64, 96, 97
	1-6	6, 9, 20, 47, 48, 79, 90, 93, 101, 103
	2-1	1,2, 3, 4,5, 6, 8, 10, 11
	2-2	2, 4, 5, 7, 13, 14, 18, 19, 20, 24, 26, 28, 31, 34, 35, 37, 42, 53, 73, 74, 75, 76
	2-3	4, 6, 9, 15, 21, 27, 30, 37, 41, 46, 54, 60, 63, 69, 72, 75, 78, 81, 89, 92, 95, 109, 111, 112
	2-4	1-6 all, 7, 10, 11, 12, 14, 17, 21, 27, 28, 31, 35, 39, 45, 50, 53, 57, 61, 69, 73, 80, 81, 86, 90, 93, 65, 103, 111, 113
	2-5	3, 5, 11, 15, 17, 23, 27, 31, 33, 39, 41, 43, 45, 49, 55, 57, 59, 65, 67, 69, 70, 73, 74, 75
	3-1	2, 5, 10, 14, 17, 22, 25, 29, 33, 37, 39, 40, 41, 42, 43, 44, 45, 46, 47, 49, 61, 64, 65, 71,73, 78, 85, 90, 91, 92, 93
	3-2	1, 3, 6, 7, 10, 13, 18, 19, 22, 23, 26, 27, 31, 33, 35, 38, 41, 44, 47, 50, 51, 53, 57, 59, 62, 63, 67, 69, 75, 77, 80, 81, 85, 87, 93, 94, 95, 97, 101, 103, 106, 111, 116, 121
	3-3	1, 4, 5, 8, 9, 11, 13, 16, 21, 25, 27, 30, 35, 37, 39, 40, 41, 43, 48, 49, 52, 53, 67, 72, 73, 75, 79, 83, 87, 88, 89, 90, 95, 113, 127, 132, 136
	3-4	1, 4, 7, 9, 14, 17, 22, 25, 28, 33, 49, 51, 53, 55, 57, 63, 65, 68, 71, 75, 79, 86, 89, 93, 95, 107, 117, 123, 125, 129, 131, 137, 139, 141, 147, 149, 151, 167, 171, 173
	3-5	1, 4, 7, 10, 13, 16, 19, 21, 25, 27, 32, 34, 41, 49, 53, 55, 58, 59, 63, 69, 71, 75, 77
	3-6	1, 3, 7, 11, 13, 17, 21, 25, 33, 39, 48, 59, 67
	3-7	1, 3, 5, 8, 13, 15, 18, 20, 21, 22, 25, 28, 30, 37, 38, 39, 44, 46
	3-8	1, 5, 9, 20
	4-1	4, 5, 8, 9, 11, 15, 17, 19, 24, 27, 33, 37, 39, 44, 48, 50, 51, 64, 67, 68,69
	4-2	1, 3, 5, 13, 15, 16, 19, 20, 21, 24, 29, 31, 33, 35, 42, 43, 47, 49, 51, 53, 55, 58, 72,82, 85, 86, 87
	4-3	1, 4, 6, 8, 9, 12, 13, 16, 17, 18, 22, 28, 32, 35, 39, 45, 48, 50, 52, 58, 61, 67, 71, 75, 76, 77, 81, 84, 85, 87, 90, 95, 98, 101, 105, 107, 109, 113, 114, 117
	4-4	1, 2, 3, 4, 5, 11, 12, 17, 20, 27, 29, 31, 37, 39, 41, 43, 47, 55, 57, 59, 63, 67, 69, 73,79, 80, 81, 82, 83, 88, 89, 94, 95
	4-5	1, 3, 5, 7, 10, 15, 17, 19, 24, 27, 32, 33, 38, 41, 43, 45, 49, 55, 61, 64, 65, 77, 87, 97
	4-6	1-4, 5, 15, 17, 21, 28, 30, 37, 41, 43, 45, 55, 59, 65, 73, 79, 83, 89, 90
	4-7	2, 4, 6, 11, 15, 19, 22, 25, 26, 33, 43, 49
	4-8	1, 6, 7, 11, 13, 19, 23, 25, 31, 33, 34, 37, 39, 40, 44, 47, 50, 51
	5-1	1, 5, 6, 11, 14, 17, 19, 23, 27, 29, 31, 35, 40, 41, 45, 49, 51, 53, 55, 57, 58, 59, 76, 77, 79, 82, 85, 87, 89, 93
	5-2	1, 4, 8, 9, 15, 17 ,19, 23, 25, 31, 33, 36, 37, 40, 42, 46, 49, 53, 57, 62, 67, 73, 88
	5-3	1, 3, 4, 9, 10, 11, 12, 14, 16, 18, 19, 20, 21, 23, 25, 31, 33, 36, 38, 39, 41, 43, 45, 47, 49, 52, 57, 58, 61, 62, 71, 73, 75
	5-4	1, 5, 10, 15, 21, 23, 27, 31, 36, 41, 44, 50, 51, 62, 65, 67, 72, 76, 78, 83, 91, 97, 101, 103, 108, 115, 116
	5-5	1, 4, 6, 14, 18, 25, 35, 39, 43, 50, 53, 58, 61, 66, 69, 74, 76, 80, 84, 93, 99, 106, 113, 115, 117, 122, 127, 130, 133, 136, 139, 143, 151, 156

	<p>5-6 3, 10, 14, 19, 23, 39, 48, 51, 53</p> <p>5-7 1, 6, 7, 13, 16, 21, 32, 37, 40, 41, 43, 48, 51, 55, 60, 61, 69, 71, 73, 76, 79, 92, 95, 102, 103, 104</p> <p>6-1 3, 11, 18, 23, 26, 27, 33, 36, 39, 41, 42, 43, 46, 53, 57, 58, 59, 60, 62, 63, 68, 71, 74</p> <p>6-2 1, 4, 7, 11, 15, 17, 21, 25, 26, 33, 38, 40, 41, 42, 43, 57, 60, 62, 64, 69, 73</p> <p>6-3 1, 5, 9, 13, 15, 19, 21, 23, 26, 49, 59, 73, 77,</p> <p>7-1 2, 4, 6, 10, 30, 32, 40, 48, 51, 56, 59, 61, 65, 69, 97</p> <p>7-2 3, 7, 11, 13, 18, 27, 33, 59</p> <p>8-7 13, 21, 25, 35, 37</p>
Classroom Policies & Information	<p>Before class you should read the sections that will be covered in class that night. This will give you an advantage in having another presentation besides the instructor's. In mathematics the best way to <i>learn</i> is by <i>doing</i> problems. Homework will be assigned every class period. Make sure you <b>show all work</b> on homework and exams. If answers appear mysteriously on a long problem and you show no work you will receive no credit for the problem. Homework is an essential part of the course. To perform well in the course, you should expect to spend several hours before each class doing the homework problems.</p> <p>Homework assignments should be prepared on 8½ inch by 11 inch 3-hole punched, loose leaf paper. Clearly indicate the section number and the problem numbers. Your work should be neat and complete, flowing from the top to the bottom of each sheet. You should keep your homework in a notebook.</p> <p>To receive credit for a college course, you must demonstrate to a qualified individual that you understand the material and have mastered the required skills. I cannot read your mind; therefore, "I did it in my head" is unacceptable. Analysis and problem solving is a critical component of any math course and this one is no exception. The more problems you solve, in class or on the assignments, the better your understanding and comprehension level will be.</p> <p>Grades are determined by total points. A test is worth 100 points, a notebook is worth 30 points and quizzes are generally worth 20 points. So if there were two quizzes in the first chapter there would be 100+20+20+30=170 points possible in chapter one. If you earned 150 points then you would have 150/170 points or approximately an 88% average (B). There will be a grade sheet on which you may keep track of your grades.</p> <p>At the end of 9 weeks the percentage will be your quarter grade.</p> <p>At the end of the semester you will also have a semester grade that will be based on 3/7 of your 1<sup>st</sup> 9 weeks, 3/7 of your 2<sup>nd</sup> 9 weeks, and 1/7 of your semester test.</p> <p>Grades will be weighted differently for an IU grade with the total grade being weighted evenly between the first semester grade, second semester grade and IU Final.</p> <p>Cheating will be rewarded with a 0 on the assignment and a call to parents on the first offense. On the second offense all credit will be forfeited for the semester.</p>
Attendance Policy	<p>Regular, prompt attendance is expected. Remember, in a math course, each lesson builds on the previous lesson.</p> <p>If you miss just one class, you run the risk of being unable to continue with new material. Therefore, you must get caught up IMMEDIATELY!! DON'T TAKE MISSING CLASS LIGHTLY!!! You will fall behind!</p>
Late Work Policy	<p>Late work is not accepted without penalty unless absence is school excused. A 30% fine/day is assessed for unexcused absence.</p>
Make-up/Retake Exam Policy	<p>If you miss a test your grade will be recorded as a 0. Makeup tests are not given if you are unexcused. However, if you have a serious and documented excuse for missing an exam and/or you contact me prior to the time of the scheduled test, then I may be able to give you a makeup. It will not be the same test previously given in class and usually is more difficult. Retakes are not given.</p>
Dual Credit-High School Credit Policy Statement	<p>The rigor of this course will be periodically reviewed by Indiana University faculty in an effort to maintain the high quality of education that each student receives. Due to the unique format of this course, students must decide during the IU enrollment period whether they wish to receive dual credit (high school and IU credit) or only high school credit. Students who choose to take the course only for high school credit and receive a passing grade may not register at a later date or repeat the course (while in high school) for college credit.</p>
IU Academic	<p>The rights and responsibilities of Indiana University students are explained in the Indiana University</p>

Misconduct Statement	<p>Code of Student Rights, Responsibilities, and Conduct, <a href="http://www.indiana.edu/~code/">http://www.indiana.edu/~code/</a>. The Code describes the types of misconduct for which students may be penalized, including cheating, fabrication, plagiarism and interference with other students' work, as well as actions which endanger the University and the University community and possession of firearms. The Code also indicates the procedures to be followed in these cases. All students are required to adhere to the responsibilities outlined in the Code</p> <p>The definition and clarification related to academic misconduct is here: <a href="http://www.indiana.edu/~code/code/responsibilities/academic/index.shtml">http://www.indiana.edu/~code/code/responsibilities/academic/index.shtml</a> Examples of Plagiarism: <a href="http://www.indiana.edu/~wts/pamphlets/plagiarism.pdf">http://www.indiana.edu/~wts/pamphlets/plagiarism.pdf</a></p> <p>Per IU policy, ACP instructors are required to investigate and then report all incidents of academic misconduct to the Dean of Students.</p> <p><i>Adopted by the Board of Trustees, effective August 1, 2009</i></p>
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