

Wahoo High School
2011-12 Calculus & Analytic Geometry (Math 1600) Syllabus

Instructor: Mike Bomar

Required Textbook/Materials: **University Calculus Early Transcendentals, Second Edition** by Hass, Weir, Thomas with **MyMathLab** by Pearson/Addison –Wesley, Paper, Pencils, and Graphing Calculator (TI-83 recommended)

Course Description: This 7.5 quarter credit hour course reviews functions, introduces the notion of a limit and proceeds to use the limit to develop the concepts of the derivative and the integral. The problems in this syllabus should be completed to achieve an average competency in this course. From those of you looking for a more thorough understanding of Calculus, working additional problems and asking questions in class is an excellent beginning.

- A.** Limits, Continuity, and the Derivative
- B.** The Derivative Function, and differentiation rules
- C.** Applications of Derivatives
- D.** Definite and Indefinite Integrals
- E.** Applications of Definite Integrals

Grading: Numerical grades have the following letter grades equivalence:

- A** 90% or above
- B** 80% to 89%
- C** 70% to 79%
- D** 60% to 69%
- F** Below 60%

The final course grade will be determined using the following components:

Daily Attendance and Participation	50 points
MyMathLab Homework	100 points
10-Quizzes or Worksheets	100 points
3-One Hour Exams	300 points
Comprehensive Final Exam	200 points
Total	750 points

This syllabus is an approximate schedule and guide. The instructor may vary pacing, content, and exam schedule. If you must miss a class, please make arrangements to get important class announcements. You should read lecture material before class, and do the indicated homework after the lecture on the material. Please turn off all cell phones before attending lecture. The recommended assignments are listed on the following page.

Week	Unit and Topic	Page	Recommended Exercises
	Introduction & Outline		
2.1	Rates of Change & Tangents to Curves	57	1, 3, 4, 5, 8, 9, 12, 13, 14, 15, 19, 20, 22
2.2	Limit of a Function and Limit Laws	67	1-6, 10, 15, 19, 25, 30, 35, 38, 43, 45, 47, 51, 54, 57, 61, 65, 73, 79, 83
2.3	Precise Definition of a Limit	76	1, 4, 5, 7, 9, 12, 13, 16, 17, 23, 29, 37, 39, 41, 49, 59
2.4	One Sided Limits	84	1, 2, 5, 9, 12, 15, 23, 29, 35, 39
2.5	Continuity	95	1-10, 13, 15, 20, 21, 25, 27, 30, 33, 40, 43, 54, 77
2.6	Limits Involving Infinity: Asymptotes	108	1, 2, 7-9, 11, 15, 21, 25, 27, 29, 35, 41, 42, 45, 49, 53, 57, 69, 73, 101
3.1	Tangents and Derivatives at a Point	119	2, 3, 5, 7, 8, 9, 13, 15, 17, 20, 23, 25, 28, 30, 33, 34, 41
3.2	The Derivative as a Function	125	1, 3, 5, 7-9, 13, 20, 23, 27-31, 36, 37, 41, 45, 46, 53
3.3	Differentiation Rules	137	1-11, 13, 17, 20, 25, 29, 31, 35, 43, 49, 51, 53, 57, 58
3.4	The Derivative as a Rate of Change	146	1-5, 7, 10, 11, 13, 17, 18, 21, 23, 25
3.5	Derivatives of Trigonometric Functions	153	1-15, 19, 23, 31, 34, 40, 42, 53, 54, 57, 62, 70
3.6	The Chain Rule	161	3, 5, 9, 11, 14, 17, 21, 23, 27, 29, 33-36, 39, 43, 47, 57, 65, 73, 77, 83, 85, 87, 97, 98
	EXAM 1		
3.7	Implicit Differentiation	168	1, 2, 7, 11, 22, 28, 29, 32, 35, 38, 46
3.8	Derivatives of Inverse Functions	178	3-5, 8, 13, 21, 28, 31, 32, 38, 39, 47, 52, 57, 63, 65, 75, 82, 89, 93
3.9	Inverse Trigonometric Functions	185	1-7, 10, 11, 13-16, 21, 24, 25, 33, 35, 38, 39, 52
3.10	Related Rates	191	1, 2, 3, 6, 10, 12, 13, 15, 23, 24, 27, 29, 31, 38, 41
3.11	Linearization and Differentials	203	1-7, 11, 13, 17, 21, 23, 25, 39, 43, 44, 45, 51, 53, 57
4.1	Extreme Values of Functions	219	1-4, 7, 10, 11, 14, 17, 20, 23, 28, 37, 40, 41, 55, 61, 71

4.2	The Mean Value Theorem	228	1, 2, 5, 6, 9, 12, 14, 16, 21, 25, 33-35, 37, 39, 41, 43, 45, 48, 56
4.3	The First Derivative Test	233	1, 3, 6, 8, 13, 15-17, 19, 23, 30, 33, 43, 47, 49, 55, 67
4.4	Concavity and Curve Sketching	243	1-3, 8, 11, 19, 23, 28, 43, 54, 61, 64, 73, 81, 83, 85, 88, 102, 103, 106, 109
4.5	Indeterminant Forms and L'Hopitals Rule	253	1-3, 5, 11, 13, 16, 21, 27, 37, 43, 51, 56, 59, 60
4.7	Newton's Method	269	1, 2, 5, 10, 11, 13, 15, 23
	EXAM 2		
4.6	Applied Optimization	260	1, 3, 7, 9, 11, 12, 15, 29, 31, 37, 39, 43, 58
4.8	Antiderivatives	277	1, 3, 6, 8, 11, 13, 15, 18, 19, 21, 27, 29, 35, 40, 41, 45, 49, 52, 55, 61, 66, 75, 78, 81, 83, 95, 97, 105, 119
5.1	Area and Estimates with Finite Sums	296	1, 3, 6, 7, 9, 11, 13, 17, 20
5.2	Sigma Notation and Limits of Finite Sums	304	1, 3, 5, 7, 10, 12, 16, 17, 19, 23, 30, 33, 35, 39, 44
5.3	Definite Integrals	313	1-9, 11, 14, 15, 17, 27, 35, 43, 49, 51, 55, 60, 71
5.4	The Fundamental Theorem of Calculus	325	1, 4, 7-15, 22, 23, 29, 36, 37, 39, 43, 47, 51, 57, 59, 62, 75
5.5	Indefinite Integrals and Substitution	333	1-8, 15-17, 21, 24, 27, 31, 36, 40, 47, 55-58, 61, 71, 73, 77
5.6	Substitution and Area Between Curves	341	1-5, 7, 10, 13, 19, 25, 32, 37, 41, 45, 47, 51, 55, 57, 58, 60, 67, 69, 75, 80, 87, 99
6.1	Volumes using Cross-Sections	361	1, 2, 5, 8, 14, 15, 17, 22, 23, 25, 35, 45, 51
6.2	Volumes by Cylindrical Shells	369	1, 3, 6, 9, 10, 16, 21, 25, 28, 32, 39
6.3	Arc Length	376	1, 4, 7, 10, 13, 17, 19, 26
	Catch-Up & Review		
	EXAM 3		
	Comprehensive Final Exam		
	Final Review		