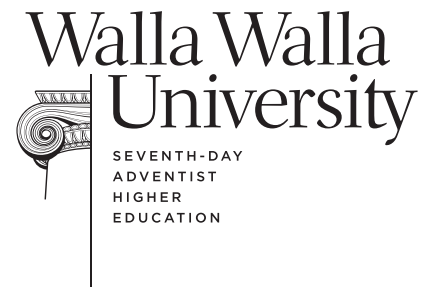


Syllabus for MATH 181B  
Analytic Geometry and Calculus I  
Autumn Term 2014, 4 Credits  
MTWF 1:00-1:50 PM, Kretschmar Hall 347



**Instructor:** Ross E. Magi, KRH 337, 509-527-2350  
**Email:** ross.magi@wallawalla.edu (best way to contact me)  
**Office Hours:** 10-11 MTWF and 2-3 TWTh  
**Webpage:** access via <https://webwork.wallawalla.edu/moodle/>  
**Textbook:** *Calculus*; Larson and Edwards; 10th ed.; 2014; Cengage Learning; ISBN 9781285057095

**Bulletin Description:** Study of functions, limits, continuity, derivatives, definite integrals, and the Fundamental Theorem of Calculus. Prerequisite: MATH 117, 122, or departmental placement.

*My Child, listen to what I say, and treasure my commands.*

*Tune your ears to wisdom and concentrate on understanding.*

*Search for them as you would for silver; seek them like hidden treasures.*

*Then you will understand what it means to fear the Lord, and and you will gain knowledge of God.*

*For the Lord grants wisdom! From His mouth come knowledge and understanding.*

Proverbs 2:1-6 NLT

**Objectives:** As informed by the university's core values, the objectives of this course are as follows:

- Excellence in thought
  - The main goal of this course is for students to develop a deeper understanding of calculus. Through examples, lectures, classroom discussion, homework, and exams, students will have the opportunity to develop their understanding of calculus and demonstrate their comprehension of the course material.
- Generosity in service
  - While this course does not have a formally assessed service learning component, students may generously serve their classmates through their considerate contributions to class discussions. These may come in the form of asking questions, suggesting solutions to example problems, or suggesting alternate explanations to concepts.
- Beauty in expression
  - It is the instructor's firm belief that the logical and rational nature of mathematics holds a type of beauty. Students will share in this beauty through providing well thought out and clearly presented solutions both on written homework assignments and in class exams.
- Faith in God
  - While this course does not have a formally assessed religious component, it is the instructor's belief that sincere work and effort brings glory to God. Further, faith should not be devoid of reason. The critical reasoning skills developed through taking college courses, including mathematics courses, should be applied by students to develop a robust and meaningful faith.

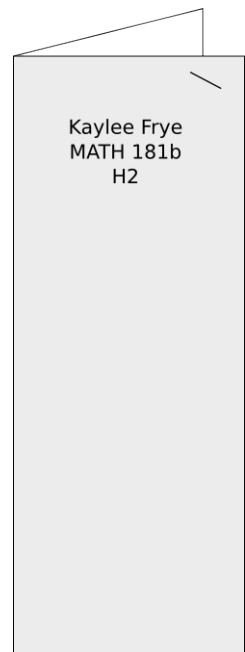
**Assessment:** Grades for the course will be assigned as follows:

Homework and quizzes	25%		B+ 88-89.9	C+ 78- 79.9	D+ 68-69.9
Midterms	3×15%	A 92-100	B 82-87.9	C 72-77.9	D 62-67.9
Final Exam	30%	A- 90-91.9	B- 80-81.9	C- 70-71.9	D- 60-61.9

All materials submitted by a student will be evaluated in a timely manner (typically 2 weeks). Exams will be scored and be accessible for viewing by a student before the next exam in a given course. The score for each class requirement may be accessed via the Moodle class login.

**Homework:** The surest way to succeed in this course is to study each day. To encourage this behavior, there will be homework exercises on WebWork for each section in the book. Each WebWork assignment will be due by midnight on the day following the day that section was completed in class. For example, a section completed on Monday will have a WebWork assignment due by 11:59 pm on Tuesday night. The exception to this rule is Friday assignments, which will be due by 11:59 pm the following Monday night. Late WebWork assignments will not be accepted. WebWork due dates may be extended under appropriate extenuating circumstances such as illness, funeral attendance, approved athletic activity, or other circumstances deemed appropriate by your instructor.

There will also be weekly written homework assignments. The purpose of written homework is for students to practice writing clear and precise solutions. A solution includes the entire reasoning process, not just the answer. In addition to numbers and symbols, Please feel free to use words and even complete sentences in your solutions. Written homework should be on 8.5" × 11" paper, with all frills removed, stapled in the upper-left corner, and folded and labeled as shown in the picture. Written homework is due by class time each Friday. Late homework will be accepted with a 15% penalty until the end of the day the Monday after it was due.



Any in-class computer lab activities will be announced at least one week in advance and will be graded as homework.

**Quizzes:** Announced or unannounced quizzes may be given over the lectures and homework. These quizzes will be short (approximately 10 min).

**Tests:** Three 50-minute examinations will be given during the quarter. These will cover the lectures and the homework. All tests will be comprehensive, though special focus will be placed on material covered since the previous test. Tests will be taken without calculators.

**Final Exam:** The final exam is schedule for Wednesday, December 17, from 8:00-9:50. Attendance is required, so make your travel plans early with this appointment in mind.

**Attendance:** Students are expected to attend all classes. Students are also expected to give their full attention to class discussions and to be courteous, respectful, and supportive of the learning environment. Phones, computers, and other distractions are not to be used during class. Modifications to the

homework assignments or test schedule may be announced in class.

**Resources:** Please make use of my office hours for any questions you may have. I am happy to meet at other times if the listed hours do not fit with your schedule. Free drop-in tutoring is offered at the TLC located in the basement of Village Hall. Your textbook also has supplementary online material including worked homework problems, instructional videos, and various interactive examples. I encourage you to explore this online material available at <http://www.larsoncalculus.com/calc10/>.

**Teaching Certification:** Those students seeking Washington state teaching certification should consult <http://math.wallawalla.edu/teacherEd/>.

**Academic Integrity:** Some collaboration on homework is allowed—and even encouraged—but work you submit for grading must be your own. Any type of cheating on an exam, including (but not limited to) copying another student’s work or using unauthorized electronics or notes, will result in a zero grade for the exam or a failing grade for the quarter, and possible further discipline from the Associate Vice President for Academic Administration. The university’s official academic integrity policy can be found at <http://www.wallawalla.edu/academics/academic-administration/academic-policies/academic-integrity-policy/>.

**Disabilities:** If you have a physical and/or learning disability and require accommodations, please contact your instructor or the Disability Support Services office at 527-2366. This syllabus is available in alternative print formats upon request. Please ask your instructor. The university’s official disability support policy can be found at <http://www.wallawalla.edu/resources/student-support-services/disability-support-services/general-policy/>.

## Tentative Schedule for MATH 181b

Sept:	M	29	Syllabus and intro
	T	30	1.1 A preview of calculus
Oct:	W	1	1.2 Finding limits graphically and numerically
	F	3	1.3 Evaluating limits analytically
	M	6	1.4 Continuity and one-sided limits
	T	7	1.5 Infinite limits
	W	8	2.1 The derivative and the tangent line problem
	F	10	2.2 Basic differentiation rules and rates of change
	M	13	Catch-up
	T	14	Review
	W	15	Service day—No class
	F	17	Exam 1
	M	20	2.3 Product and quotient rules and higher-order derivatives
	T	21	2.4 The chain rule
	W	22	2.5 Implicit differentiation
	F	24	Catch-up
	M	27	2.6 Related rates
	T	28	3.1 Extrema on an interval
	W	29	3.2 Rolle's theorem and the mean value theorem
	F	31	3.3 Increasing and decreasing functions and the first derivative test
Nov:	M	3	3.4 Concavity and the second derivative test
	T	4	Catch-up
	W	5	Review
	F	7	Exam II
	M	10	3.5 Limits at infinity
	T	11	3.6 A summary of curve sketching
	W	12	3.7 Optimization problems
	F	14	3.8 Newton's method
	M	17	Lab: Newton's method lab
	T	18	3.9 Differentials
	W	19	4.1 Antiderivatives and indefinite integration
	F	21	4.2 Area
			Thanksgiving break
Dec:	M	1	4.3 Riemann sums and definite integrals
	T	2	Catch-up
	W	3	Review
	F	5	Exam III
	M	8	4.4 The fundamental theorem of calculus
	T	9	4.5 Integration by substitution
	W	10	4.6 Numerical Integration
	F	12	Final review
	W	17	Final Exam: 8:00-9:50