

# Math 226: Calculus II      Sections 1 & 2      5 credits

## Fall 2019 Syllabus

<b>Professor Cindy McCabe</b> Office: D354 Science Building Phone: 715-346-2085 Email: <a href="mailto:cmccabe@uwsp.edu">cmccabe@uwsp.edu</a> <a href="http://www.uwsp.edu/mathsci">www.uwsp.edu/mathsci</a>	<b>Office Hours</b> 8:00-8:50am Mondays 10:00-10:50am Tuesdays 2:00-2:50pm Wednesdays 12:00-12:50pm Thursdays <i>or by appointment</i>	<b>Class meets Mon – Fri</b> Sec. 1: 9:00 – 9:50 am A225 Science building Sec. 2: 1:00 – 1:50 pm A207 Science building
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**Text (rental):** *Calculus: Single Variable with Early Transcendentals*, 8<sup>th</sup> Edition, by James Stewart, published by Cengage, ISBN 978-1-305-27033-6. If you are planning to purchase a text, the full text may be preferable (ISBN 978-1-285-74155-0) rather than the Single Variable version so that Chapter 12 is included. Topics include most of those in Chapters 6 – 12.

**Optional Purchase Item:** Access code for *WebAssign* online homework and e-book for \$101. Please wait before purchasing until you hear about the free trial period to be discussed in class.

**Calculators:** A graphing calculator is required and should be brought to class daily. Recommended calculators are the TI-83 or TI-84 models. You may not share resources during exams since I want to know what you can do and want to allow each of you to show what you can do. Computers, phones, smartwatches, and devices with internet access are not allowed during exams or quizzes. They must be stowed out of sight, set to a silent mode, and not used at these times.

**Prerequisite:** Math 120 or Math 225 (either the recent or the new version of) Calculus I

**Course Goals:** Students will

- 1) gain expertise identifying, generating, and using formulas to solve hypothetical and applied problems related to integrals, series, and differential equations.
- 2) use parametric equations and polar coordinates to describe planar curves and curves in 3-space, and to compute exact slopes, areas, etc., as well as become familiar with conic sections, quadric surfaces, and introductory concepts related to vectors in 2-space and 3-space.
- 3) develop self-confidence in problem solving and the grit to engage with longer and more complex mathematical situations than were required in prerequisite mathematics courses.
- 4) improve skills for communicating their ideas and their reasoning in verbal and written form using English sentences as well as mathematical notation and language.

Note: For a more detailed list of skills students will develop related to the topics from the textbook, see the end of this syllabus.

**Communication:** Announcements, homework assignments, grade information, and other course information will be in Canvas. To access Canvas, go to <https://www.uwsp.edu>, choose Canvas from the “Logins” dropdown menu, and use your regular campus login ID and password. (Canvas is the replacement for D2L, Desire 2 Learn.) Email is a good way to contact me ([cmccabe@uwsp.edu](mailto:cmccabe@uwsp.edu)). There are times when I will send the class an **email using your UWSP address**. Please check for those.

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**Evaluation:** Final course grades will be determined by the following:

100 points for in-class quizzes (best 4 at 25 pts each: lowest score is dropped)

72 points for HW checks (top 24 scores)

39 points for other graded formative work (top 13 scores)

100 points for Exam 1 (in-class on Wed. Oct. 9)

100 points for Exam 2 (in-class on Wed. Nov. 20)

130 points for the comprehensive Final Exam (Thurs. Dec. 17. See next page for time.)

Total: 541 points for this course

Course Grades at or above	93.3	90	86.7	83.3	80	76.7	73.3	70	66.7	60	%
	505	487	469	451	433	415	397	379	361	325	Points
will receive at least a grade of	A	A -	B +	B	B -	C +	C	C -	D +	D	

I reserve the right to exercise discretion in raising a student's grade if the final weighted average does not appear to reflect the quality of a student's work (for example, because of one low exam score early in the course). I will not use discretionary judgments to lower a student's final grade.

Five regular **quizzes** and three **exams** are listed in the schedule on the last page. The lowest one of the five regular quiz grades will be dropped at the end of the semester.

Almost every day, a list of **homework** exercises will be assigned. These are the regular workouts for your brain, to build your strength and mathematical power. You have the option of doing some of the exercises online in *WebAssign* and some on paper, or of doing all of them on paper.

**When you are doing homework, either in *WebAssign* or from the text, take notes or do some work on paper for almost every exercise. Then bring that work to class so you are ready for discussions.**

Homework is extremely important to your learning process, so make sure you stay on top of it and ask questions on whatever you don't understand. Doing well with your homework should also help your grades on quizzes and exams.

There will be **homework checks** at the beginning of class once or twice each week, typically on Tuesdays and Fridays. There will be **other in-class activities** on some days, possibly done in groups, and approximately once each week there will be a short activity to submit in Canvas.

Homework checks and other graded formative work will be scored out of 3 points. These ratings will be: *Solid performance – 3 points, Substantial work done – 2 points, Partial understanding exhibited – 1 point, or No contribution – 0 points.*

Homework check scores will be based on your *WebAssign* work and/or your work done on paper, and on your participation in class that day. The top 24 scores for homework checks and other sustaining work will be used in your course grade, leaving at least **four extra days** to allow for times you had to miss class or come to class unprepared. Similarly, there will be at least 15 other instances of graded formative work, and the top 13 scores will be used, leaving at least two of these as extras.

I do not anticipate other graded items, but if any arise, they will be announced in class and the course points will be adjusted.



**Support is available:** Ask questions as they occur to you. Come to see me before or after class, stop by during my office hours, or schedule an appointment with me for another time. *One of the great parts of my job is working with conscientious students!* You may also benefit from working with tutors in the Math Help Room in A113A SCI, where there is free drop-in tutoring for this course and others. There are tutoring options available to you through the Tutoring-Learning Center as well. (Visit <http://www.uwsp.edu/tlc/Pages/> for those.) More specifics on tutoring will be provided in class and in Canvas as schedules are set.

**Attendance Policy:** Attendance is expected at every class meeting. It is the student's responsibility to make prompt arrangements with me for finding out what was missed and for making up any assigned work in the case of an absence. Canvas is also a great resource at these times. If you miss class, check there first for things you need to know. Quizzes and exams may only be made up in special circumstances, and normally only if arranged with me ahead of time. If a medical emergency occurs, contact the Dean of Students or the Disability & Assistive Technology office as soon as possible (\* contact info. below \*). Then we can see if an exception is in order.



**Inclusivity Statement:** It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity brought by everyone in this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity. I encourage you to make suggestions to this end. Please let me know ways to improve the effectiveness of the course for you personally, or for other students or student groups.

If you have experienced a bias incident (an act of conduct, speech, or expression to which a bias motive is evident as a contributing factor regardless of whether the act is criminal) at UWSP, you have the right to report it using this [link](#). You may also contact the Dean of Students office directly at [dos@uwsp.edu](mailto:dos@uwsp.edu).

UWSP is committed to providing reasonable and appropriate **accommodations** to students with disabilities and temporary impairments. If you have a disability or acquire an impairment or injury during the semester and you need assistance, please contact the \* Disability and Assistive Technology Center as soon as possible, on the 6<sup>th</sup> floor of Albertson Hall (library), at 715-346-3365, or at [DATC@uwsp.edu](mailto:DATC@uwsp.edu). You may also want to visit <http://www.uwsp.edu/disability/Pages/default.aspx>.

All students are expected to know the UWSP student **responsibilities** found on the Dean of Students webpage. Information on Academic Concerns is available at <https://www.uwsp.edu/dos/Pages/stu-academic.aspx>. Information on Conduct Concerns and on Personal Concerns are also available on the Dean of Students site.

**Incompletes:** A grade of incomplete may be given when circumstances arise which are beyond the student's control, and which result in the student being unable to complete the course. A grade of incomplete will only be used if the student is passing when the circumstances arise.



## Approximate Weekly Schedule – Fall 2019

Week	Approximate text sections to discuss this week	Major events this week
1. Sept. 2 – 6	6.1, 6.2, 6.5	<i>Labor Day – no class Monday</i>
2. Sept. 9 – 13	7.1 – 7.3	Quiz 1 Wednesday
3. Sept. 16 – 20	7.3, 7.4, 7.5, 7.7	
4. Sept. 23 – 27	7.7, 7.8, 8.1	Quiz 2 Wednesday
5. Sept. 30 – Oct. 4	8.2, 8.3, 9.1, 9.2	
6. Oct. 7 – 11	9.2, Review, 9.3	<b>Exam 1</b> Wednesday, Oct. 9
7. Oct. 14 – 18	9.4 – 9.6	
8. Oct. 21 – 25	11.1 – 11.3	Quiz 3 Wednesday
9. Oct. 28 – Nov. 1	11.3 – 11.6	
10. Nov. 4 – 8	11.6 – 11.9	Quiz 4 Wednesday
11. Nov. 11 – 15	11.9 – 11.11	
12. Nov. 18 – 22	11.11, Review, 10.1, 10.2	<b>Exam 2</b> Wednesday, Nov. 20
13. Nov. 25 – 29	10.2 – 10.4	<i>Thanksgiving – no class Th, Fri</i>
14. Dec. 2 – 6	10.4, 10.5, 12.1, 12.6	Quiz 5 Wednesday
15. Dec. 9 – 13	12.6, 12.2, 12.3, Review	

**Final Exam Times:** Section 1: Tuesday, Dec. 17, Science A225, 10:15am – 12:15pm

Section 2: Tuesday, Dec. 17, Science A207, 12:30 – 2:30pm

**More detailed list of learning outcomes related to topics of the text:** Students will be able to...

- 1) analyze curves, regions, and solids to decide how to integrate with respect to  $x$  or  $y$  to find area, volume, arc length, surface area, or center of mass.
- 2) recognize when to use the following methods of integration and how to use them: Integration by parts, trigonometric integration, trigonometric substitution, partial fractions, and approximation methods.
- 3) use limits to find a convergent improper integral or to show that such an integral is divergent.
- 4) complete applied and hypothetical integral problems with exact methods or with approximations, whichever is most appropriate.
- 5) recognize which series test will be most helpful for a given infinite series and use it to determine whether the series is convergent or divergent, sometimes using estimates and computing error bounds.
- 6) use power series to represent functions, finding the radius and interval of convergence.
- 7) verify solutions to differential equations, find equilibrium solutions, and use a direction field to visualize solutions to differential equations.
- 8) solve separable differential equations and first order linear differential equations, classifying a given equation into these types.
- 9) use parametric equations and polar coordinates to describe planar curves and curves in 3-space, and to compute exact slopes, areas, and other calculus concepts in these settings.
- 10) become familiar with conic sections, quadric surfaces, and introductory vector concepts in two and three dimensions.

