

Course Information Sheet

Course: Prairie State College Math 172-01 - Calculus II - 5 Credit/Contact Hours - Fall 2017

IAI Code: M1 900-2, MTH 902

Delivery Mode: Face-to-face

Meeting Time: MW 12:00pm-2:15pm

Meeting Place: Room 4270

Instructor: Steve Kifowit, Rm 2305, Ph. (708) 709-3954

Email: skifowit@prairiestate.edu

Web: <http://stevekifowit.com>

Office Hours: MW 10am-12pm, TTh 12pm-12:30pm, or by appointment

Text: *Calculus*, 10th edition (2014); Larson and Edwards

Course Description: This is the second course in the three-semester sequence of courses covering calculus for scientists and engineers. Topics covered include: applications of integrals, transcendental functions, integration techniques, L'Hopital's rule, improper integrals, infinite sequences and series, and polar coordinates.

Course Prerequisite: Math 171 (Calculus I) with a C or better.

Course Goals/Objectives:

General Education Objectives---The mathematics component of general education focuses on quantitative reasoning to provide a base for developing a quantitatively literate college graduate. Every college graduate should be able to apply simple mathematical methods to the solution of real-world problems. A quantitatively literate college graduate should be able to:

- a.) interpret mathematical models such as formulas, graphs, tables and schematics, and draw inferences from them;
- b.) represent mathematical information symbolically, visually, numerically and verbally;
- c.) use arithmetic, algebraic, geometric and statistical methods to solve problems;
- d.) estimate and check answers to mathematical problems in order to determine reasonableness, identify alternatives and select optimal results; and
- e.) recognize the limitations of mathematical and statistical models.

Specific Course Objectives---In addition to meeting the general education objectives, every successful Math 172 student should be able to:

- 1.) integrate and differentiate functions such as logarithmic functions, exponential functions, trigonometric and inverse trigonometric functions, and hyperbolic functions;
- 2.) use techniques of integration such as integration by parts, partial fractions, and trig substitution;
- 3.) evaluate limits using L'Hopital's rule;
- 4.) evaluate improper integrals;
- 5.) determine if an infinite series converges or diverges;
- 6.) set up and solve application problems involving volume, area, surface area, arc length, work, and fluid force;
- 7.) represent functions as power series and find the radius of convergence of power series; and
- 8.) use computer algebra systems to solve problems.

Attendance Policy: Regular class attendance is an essential component of successful learning. Students are responsible for prompt attendance and participation in all class meetings. **If you miss class, you will not be allowed to make up any tests, quizzes, or assignments that you may have missed (but you may reschedule a test or quiz in advance of a missed class period).** All material covered in class is the student's responsibility.

Grading: Your grade will be based on your performance on three 100-point tests, a 150-point final exam, approximately ten 10-point quizzes, and miscellaneous problems, projects, and WebAssign (50-100 points).

Very roughly, tests count for about 50% of your grade, the final exam counts for about 25%, and quizzes count for about 17%. The grading scale is as follows:

- A --- 88% and above
- B --- 77% - 87%
- C --- 66% - 76%
- D --- 55% - 65%
- F --- below 55%

You may estimate your current grade at any time during the semester by computing the following percentage: $100\% * (\text{Total points accumulated}) / (\text{Total points possible})$. Please feel free to discuss your grade with me at any time during the semester. Throughout the semester, grades will be posted online in D2L.

Flipped Classroom: Throughout the semester, we will be using a modified "flipped classroom" approach. For the most part, you will be expected to read the text, watch videos, and study material before coming to class. Class time will be spent on discussion and working problems. A small amount of time each day may be spent on lecture, but the majority of the "lecture part" of the course will be done independently, on your own time. We may deviate from the suggested lecture pace.

Homework: Textbook homework problems will be assigned on a daily basis. Your work will not normally be collected, but we will discuss homework problems in class. If any suggested written homework problems are to be submitted for grading, you will be given advance notice of at least one class period. Keep up to date with the homework! Homework problems (or very similar problems) often show up on quizzes and tests. WebAssign problems will also be assigned on a regular basis.

Quizzes: Be prepared for a ten-point quiz on each Wednesday (unless a test is scheduled). No make-up quizzes will be given. All quiz work (including take-home quizzes) is to be done on an individual basis unless otherwise stated. At the end of the semester, your lowest quiz score will be dropped.

Tests/Exams: Test problems will be similar to class examples, quiz problems, and homework problems. In addition to computational problems, tests may include multiple choice, true/false, short answer, and/or writing problems. You must show all work on all tests to receive full credit. **You must work individually on all tests.** No make-up tests will be given. At the end of the semester, your lowest test score will be replaced by two-thirds of your final exam score (if this helps you).

Final Exam: The final exam is comprehensive and will be worth 150 points toward your final grade. The final exam counts for more than 25% of your grade. Please take it seriously! See the lecture pace for the date of the final exam.

Academic Honesty: In a Math class, it is extremely important that the work you present to your instructor is genuinely something that you have produced. Relying heavily on other people and/or inappropriate technology can create a false sense of achievement that ultimately leads to failure when those resources are no longer available. Part of my role as your instructor is to communicate to you what resources are acceptable and appropriate. The use of inappropriate resources is a form of academic dishonesty. In general, the use of any technology or human help that allows students to simply present a problem and have the problem solved for them is prohibited. Please feel free to speak to me if you are not sure whether you are allowed to use a particular resource in doing the work for this class. There are serious consequences for submitting work that is not your own. Possible consequences include a zero score for the assignment, failure of the class, or expulsion from the college. All cases of academic dishonesty will be reported to the dean.

Calculators: The TI-83/84 Graphing Calculator is required for this course. We will also make use of computer software such as Maxima, GeoGebra, Mathematica, or Wolfram Alpha.

Phones/Tablets/Laptops: Electronic devices may be used for notetaking and computing during lectures, but they may not be used on in-class tests and quizzes. These devices must be silenced and put away during tests and quizzes. Students in special circumstances who require their phones to be readily available must discuss their situations with the instructor.

Misc. information:

- 1.) The last day to withdraw from the course is November 10. For refund information, refer to the fall schedule book. If you wish to withdraw from the course, it is your responsibility to do so. Any student who does not come to class, yet fails to withdraw, will be given the FW grade.
- 2.) You are expected to spend roughly 15 hours per week on coursework - 5 hours in class and 10 hours out of class. If you cannot make this commitment, you may want to reconsider taking this course.
- 3.) The grading scale will be strictly adhered to! Final percentages will be rounded to the nearest whole number.
- 4.) This is a fast-paced course! We will cover much material in little time. You are responsible for thoroughly reading the textbook and keeping up with the assigned material.

Disability Statement: Any student needing to arrange reasonable accommodations for a documented disability (learning, physical, psychological, or other) should contact the Disability Services Office (Room 1192).

Student Veterans Statement: Veterans and those currently serving in the Armed Services may be eligible for various benefits. Information and support are available in the Student Veterans Center (Room 1240). Online information is available at <http://prairiestate.edu/student-services/veterans-services/index.aspx>.

Religious Observance Accommodation: Prairie State College is required to excuse students who need to be absent from class, examinations, study, or work requirements because of their religious beliefs, and provide students with a make-up opportunity, unless to do so would unreasonably burden the institution. Students must notify their instructor well in advance of any absence for religious reasons. If you require special accommodations for observance of a religious holiday, please notify me during the first week of the term.

Course information, including tests, quizzes, and answer keys, can be found at
<http://stevekifowit.com/classes/m172.htm>



Lecture Pace

Math 172-01 - Calculus II

Week 1	Aug 21 & Aug 23	Course information; Sections 5.1, 5.2	Course information, Natural log
Week 2	Aug 28 & Aug 30	Sections 5.3, 5.4	Inverse functions, exponential function
Week 3	Sep 6	Sections 5.5, 5.6; No class on Sep 4	Bases other than e , Inverse trig functions
Week 4	Sep 11 & Sep 13	Sections 5.7, 5.8, 7.1	Inverse trig functions, Hyperbolic functions
Week 5	Sep 18 & Sep 20	Section 7.2, Test 1	Volumes by disks
Week 6	Sep 25 & Sep 27	Sections 7.3, 7.4, 7.5	Cylindrical shells, Arc length, Work
Week 7	Oct 2 & Oct 4	Sections 7.5, 7.6, 7.7	Work, Moments, Fluid force
Week 8	Oct 9 & Oct 11	Sections 8.1, 8.2	Basic integration, Int by parts
Week 9	Oct 16 & Oct 18	Section 8.3, Test 2	Trigonometric integrals
Week 10	Oct 23 & Oct 25	Sections 8.4, 8.5, 8.6	Trig subs, Partial fractions
Week 11	Oct 30 & Nov 1	Sections 8.7, 8.8, 9.1	L'Hopital's rule, Improper integrals, Sequences
Week 12	Nov 6 & Nov 8	Sections 9.2, 9.3, 9.4	Series, Integral test, Comparison
Week 13	Nov 13 & Nov 15	Sections 9.5, 9.6, 9.7	Alternating series, Ratio/Root tests, Taylor polys
Week 14	Nov 20 & Nov 22	Sections 9.8, 9.9; Test 3	Power series
Week 15	Nov 27 & Nov 29	Sections 9.10, 10.2, 10.3	Taylor series, Parametric equations
Week 16	Dec 4 & Dec 6	Sections 10.4, 10.5; Review/Catch-up	Arc length, Polar coords
*****	Monday, Dec 11	Final Exam --- 10am-11:50am	

*** November 10 is the last day to withdraw ***