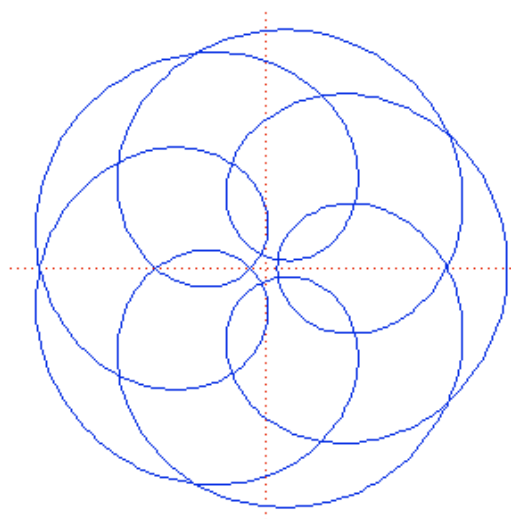


Math 155: Calculus and Analytic Geometry II
Section #1816
TTh 11:30am-1:20pm, OC3508
Fall 2017

Hypotrochoid



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Parametric Cartesian equation:

$$x = (a - b) \cos(t) + c \cos((a/b - 1)t),$$

$$y = (a - b) \sin(t) - c \sin((a/b - 1)t)$$



Prerequisite: The prerequisite for Math 155 is completion of Math 150 with a grade of “C” or better, or an approved equivalent.

Course Description: This course is the second in a three-semester calculus sequence designed for mathematics, science, and engineering majors. Topics include advanced integration techniques, improper integrals, infinite series, conic sections, parametric equations, and polar coordinates.

Course Objectives: At the end of this course you should be able to (1) Determine an appropriate integration technique and use it to evaluate a given integral; (2) Determine the convergence or divergence of a given infinite series; (3) Find a power series representation for a given function and determine its interval of convergence; (4) Use a power series representation of a function to obtain an approximation for the function at a given value, or to obtain an approximation of the definite integral of the function; (5) Sketch graphs of parametric and polar equations; (6) Find derivatives when x and y are functions of a parameter; (7) Find arc length of a curve when its equation is given in parametric form; (8) Find area and arc length when equations are given in polar form; (9) Graph the conic sections and find the equation for a given conic section having been given adequate information about the graph; and (10) Use appropriate technology to solve problems from the course topics.

Student Learning Outcomes: (1) Given a function, students will be able to apply the advanced technique(s) to find the integral of the function. (2) Given an infinite series, students will be able to analyze convergence. (3) Students will be able to apply the concepts of differential and integral calculus to polar and parametric functions.

Textbook: Larson, Hostetler, Edwards, *Calculus, 10th ed.*, Brooks/Cole, 2010. Prepare for each class by reading those sections of the text that will be covered in class. ***Bring your text to each class meeting.***

Calculators: On each test, the use of a graphing calculator is required. In general, the Math Department recommends the use of one of the various versions of the TI-83, or TI-84.

Course Evaluation and Grading: Your course grade will be based on the following:

Participation and Attendance	20 pts	A = 895 - 1000
Homework	115 pts	B = 790 - 894
Course Engagement Binder	60 pts	C = 700 - 789
Tests	600 pts	D = 550 - 699
Final Exam	205 pts	F = below 549

In addition to homework, there will be 3-5 tests, and a Final Exam. **THERE ARE NO DROPPED TEST/EXAM/HOMEWORK SCORES** in this course.

If for ANY reason, you must miss class on the day of a test or exam, you **MUST** make arrangements with me **IN ADVANCE** for taking the test at some other time. It is your responsibility to make the necessary arrangements **beforehand**. Make-up tests *may not* be given for full credit.

*******The final exam date is Tuesday, December 12th, starting at 11:00am.*******

In this class we will be learning how use calculus, algebra, and geometry to do problems in a clear, step-by-step fashion. For all tests, points are assigned to steps and notation, as well as to the final answer. Getting the correct answer is only worth a small portion of the total points for a problem. To earn full credit for a problem, you must show all steps, use correct analysis, clear algebra, proper notation, and arrive at the correct answer. If you make mistakes on a test, it is likely that you will be asked to submit test corrections. If you fail to submit your test corrections, a **zero** will be posted for your test score.

Participation and Attendance: In order to get the most out of this course, plan to attend each class regularly, arrive on time, and stay for the entire period. Since attendance is mandatory, you will be dropped after the fourth absence. Re-enrollment (*which may occur once*) is possible, but you must discuss it with me first. Again, attendance is your responsibility as are its consequences.

It is your obligation, as well as your responsibility, to participate in class discussions and in-class assignments. I encourage everyone to be active learners; this means you ask questions in class whenever you do not understand something. In addition, I am available for individual assistance during my scheduled office hours, or by appointment. I advise you to get to know your classmates and to work in groups, if possible. PLEASE NOTE: 2% of the final grade is determined by class participation and attendance. I will take the following issues into consideration:

- Your ability to answer questions on assigned readings
- Your ability to focus on mathematics while in class, —saving personal conversations for outside the classroom
- Your ability to successfully work in small groups
- Your ability to offer insight to questions asked by fellow classmates
- Your ability to be on time to class
- Your ability to leave food or drinks outside the classroom
- Your ability to turn in assignments on time
- Your ability to refrain from talking to your neighbors when I am lecturing, —for some students the noise is distracting and disruptive
- Your ability to maintain a positive and supportive attitude, —being sensitive to the feelings of others, and avoiding criticism, teasing, or joking that might be hurtful

School Holidays: September 4th, November 10th, and November 23rd – 25th (Thanksgiving Break).

Course Engagement Binder: You will be asked to maintain an *appropriate folder or, three-ring Course Engagement Binder* with class notes and *Lecture Notes*. This binder may be submitted and checked for coursework progress on a **per chapter** basis. You will need to download and print the *Lecture Notes* for each chapter from the following web address:

<http://www.miracosta.edu/home/dbonds/Math155lectureresources17.html>

In addition to watching course videos, **BEFORE YOU COME TO CLASS**, you should read and attempt the problems in the *Lecture Notes* for each section. These materials are an outline of what we will be doing during class. The main purpose of this **Course Engagement Binder** is to keep you on pace for the course, promote communication, and to help us identify any topics where assistance/intervention might be needed. Furthermore, the definitions, activities, and problems that you encounter in the *Lecture Notes* will be directly related to test questions.

60 points of your total course grade will be based on the **Course Engagement Binder** contents. Each time you submit your binder for a **chapter** check, you will receive a score out of TEN points. This score will be based on your mathematical progress towards **completion** of the *Lecture Notes*.

Homework: Homework assignments will be given in class and will be checked/graded regularly. I expect assignments to be legible, neatly organized, and worked using 3 colors. (I will explain this in class). At the end of each chapter we cover, you will be asked to complete and submit a practice test, or a test prep & review assignment. These practice tests and review documents can be found at our Math 155 Lecture Resources page. Some homework problems will be discussed during class, especially those that may have caused you particular difficulty. PLEASE NOTE: 11.5% of your final grade is based on your homework scores. Late homework will not be accepted.

Success in this Course: Mathematics is a "learn by doing" subject. A good rule is to set aside eight to twelve hours per week outside of class to do your homework assignments and to complete other study and learning tasks. These tasks include: completing homework, reading the text, doing examples from the text, making outlines or 3x5 cards, memorizing formulas, rules or processes, viewing videos or getting help from your instructor or from peers in the Math Learning Center (MLC), or the Tutoring & Academic Support Center (TASC). Do not allow yourself to fall behind in your work. Catching up before a test is an extremely difficult task.

In preparation for a given test, at a minimum, you should complete all homework and any review or supplementary handouts. If you need to refer to the text when completing a problem, redo it until you can complete it correctly without reference. Then, redo it again at a later date to be sure that you remember it. In order to assure that you are properly prepared for a test, you should practice in an environment as close as possible to the testing environment: using no references, write out all problems and solve them showing all steps, and work under an appropriate time constraint.

Office Hours: My office hours are meant for you. If your schedule conflicts with mine, see me in class to make an appointment. I will hold the following scheduled office hours:

Tuesdays & Thursdays: 1:30-2:30pm

Facilitates Learning Sessions/Extra-Credit: Associated with this course is a Facilitated Learning Session (FLS) composed of students in this class. Your Facilitated Learning Session will be lead by a student who is outstanding in teaching ability and knowledge of this course. Prior to each test, if you participate in two Facilitated Learning Session meetings, you may receive a 4 percentage-point extra credit per test. Prior to each test, if you participate in one Facilitated Learning Session meeting, you may receive a 2 percentage-point extra credit per test. PLEASE NOTE: Extra-Credit points can only be applied to test grades of C (70.0%), or better.

Accommodation of Disability: Students with verified disabilities who need academic accommodations should discuss options with me during the first two weeks of class. Please contact me and/or the Disabled Students Program and Services (DSP&S) Office for further information.

Academic Integrity and Standards of Student Conduct: This class will be conducted in accordance with widely accepted standards of academic honesty, as well as standards of student conduct supported by MiraCosta College's *Academic Standards & Policies* that are stated in the course catalog.

In addition to disruptive behavior, harassment, or willful disobedience, cheating, plagiarism, or other forms of academic dishonesty are not acceptable and will not be tolerated. Students are expected to conduct themselves in an ethical manner that promotes a safe and harmonious learning environment while on the campus. Charges of misconduct and disciplinary sanctions may be imposed upon those who violate these standards of conduct, or provisions of college regulations.

***** Mobile Phone and Personal Electronics Use Policy ***:**

- If you carry a mobile phone and/ or personal electronics, turn it/ them **OFF**, or set it/ them to "Vibrating Mode" while in class.
- Disrupting the learning environment with use of mobile phone and/ or personal electronics can lead to being dropped from the class.

Drops: If you decide to drop the course, use SURF to drop yourself. Don't wait for me to drop you automatically. Withdraw W's will be issued between September 1st and November 17th. If I drop you and you want to be reinstated, see me right away.

**I look forward to getting to know each of you. Good luck,
enjoy the course, and have a great semester!**