

MA 341
Topics in Geometry
Spring 2014
MWF 10:00–10:50 am — Room CB 339

Instructor: Carl Lee.

Office: 967 Patterson Office Tower.

Mailbox: 715 Patterson Office Tower.

Email: lee@ms.uky.edu (preferred method for reaching me).

Phone: 257-1405 (or 257-3336 to leave a message).

Office Hours: MWF 10:00–10:50, and by appointment, since I realize that this time may not be convenient for everyone.

Course Web Page: I will use the UK Blackboard course site and also post materials here: <http://www.ms.uky.edu/~lee/ma341sp14/ma341sp14.html>.

Course Description: Selected topics in geometry including Euclidean and some non-Euclidean geometries. In particular, we will discuss aspects of axiomatic systems; points, lines, planes, and incidence; coordinates and trigonometry; polygons and polyhedra; distance, length, and angles; area, volume, and surface area; transformations, congruence, similarity, and symmetry. Student learning outcomes include demonstrating knowledge and understanding of the concepts, theorems, proofs, and algorithms considered in the course, solving mathematical problems, constructing proofs, and communicating mathematics.

Prerequisites: Consent of instructor, but be aware that from time to time we will make use of concepts and techniques from calculus.

Required Materials: There are no books or materials to purchase. I encourage you to bring a laptop, if you have one, but this is not required. We will make use of some online materials, including the following:

- Euclid's Elements, <http://aleph0.clarku.edu/~djoyce/java/elements/elements.html>.
- The Foundations of Geometry, <http://books.google.com/books?id=ulIGAQAIAAJ&ots=tI6oAcAtLp&dq=foundations%20of%20geometry&pg=PP1#v=onepage&q=foundations%20of%20geometry&f=false>
- SMSG Texts, <http://onlinebooks.library.upenn.edu/webbin/book/lookupname?key=School%20Mathematics%20Study%20Group>.
- GeoGebra, <http://www.geogebra.org/cms>.
- SketchUp, <http://www.sketchup.com>.
- POV-Ray, <http://www.povray.org>.

Attendance and Participation: Attendance is expected. This class is designed for active involvement of the students. You will be actively supporting each other as you gain experience and understanding. Multiple ideas and points of view are important. You will benefit from hearing others' approaches to analysis and problem solving, and they will benefit from you. So attendance and active participation are expected. I expect activities in class to be related to the course. In particular, cellphones should be silenced, and use of laptops and other electronic devices should be devoted to the course activities.

If you miss a class for any reason, please let me know the reason immediately—an email message will suffice. I will give you an opportunity to make up graded work missed due to an excused absence.

S.R. 5.2.4.2, <http://www.uky.edu/StudentAffairs/Code/part2.html>), defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays

no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (859-257-2754).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.

Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request “appropriate verification” when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.

Homework: There will be frequent homework assignments, usually assigned weekly, with specified due dates. The homework problems will have varying length and complexity. Some homework might actually be classwork collected in class. It is fine to discuss the homework together, but you must write up your own solutions in your own words.

Exams: I am planning to have three in-class exams during the semester. Tentative dates: February 10, March 7, and April 9. It is possible that some of these might be taken-home exams or have take-home components.

Final Exam: Wednesday, May 7, 3:30–5:30 pm, in our regular classroom, though part or all of this exam might be take-home.

Grading: Your course score will be based on the following percentages:

48% Homework
39% In-Class Exams
13% Final Exam

Academic Integrity: Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised

to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of Student Rights and Responsibilities (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Accommodations Due to Disability: If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email

address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

Suggestions and Other Course Issues: Suggestions for improvement are welcome at any time. Any concern about the course should be brought first to my attention. Further recourse is available through the offices of the Mathematics Department Director of Undergraduate Studies and the Department Chair, both accessible from the Main Office in 715 Patterson Office Tower.

Important Dates:

January 14 — Tuesday — Last day a student may officially drop a course or cancel registration with the University Registrar for a full refund of fees

January 15 — Wednesday — First day of classes

January 20 — Monday — Martin Luther King, Jr., Birthday Academic Holiday

January 22 — Wednesday — Last day to add a class for the 2010 Fall Semester

January 22 — Tuesday — Last day to officially withdraw from the University or reduce course load and receive an 80 percent refund

February 5 — Wednesday — Last day to drop a course without it appearing on the students transcript

February 12 — Wednesday — Last day to officially withdraw from the University or reduce course load and receive a 50 percent refund

March 10 — Monday — Midpoint of 2010 Fall Semester

March 17–22 — Monday–Saturday — Spring Vacation — Academic Holiday

April 11 — Friday — Last day to withdraw from the University or reduce course load. Students can withdraw or reduce course load after this date only for urgent nonacademic reasons.

May 2 — Friday — Thursday — Last day of classes

May 7 — Wednesday — Final Exam, 3:30–5:30 pm

May 10 — Saturday — Commencement