

MATH 6233: Geometry

Spring Semester 2016

Instructor: Dr. Abdollah Khodkar

Office: Boyd 309

Phone: (W) 678-839-4126, (C) 404-384-6131

Fax: 678-839-6490

Email: akhodkar@westga.edu

Online Office Hours: Tuesday and Thursday 3pm-4pm, Wednesday 10:30-11:30am. If you would like to talk to me but cannot make it during one of these times, please make an appointment. I will be on campus on Tuesday and Thursday and will be available between 10am and 11:30am and between 3:00pm and 4:00pm. If you want to see me on campus, just send me an email.

Prerequisites: College Geometry (MATH 4233)

Hours Credit: 3 hours

Class Type: This class is 95% or more online

Textbook: Geometry by David A. Brannan, Matthew F. Esplen, and Jeremy J. Gray

Courses Description: Study of various geometries (Affine, Projective, Inversive, non-Euclidean, and Spherical) and how they are related.

Discussions: Questions that are of importance to everyone in the class may be posted to the appropriate discussion topic. Posting to the discussion boards allows all students in the class to see the answer.

Learning Outcomes: The student will have an understanding of:

1. The coordinate and vector approach to Geometry
2. Properties of Affine Transformations and the Fundamental Theorem of Affine Geometry
3. The Projective Plane RP^2 , Projective Transformation and Cross Ratio
4. Desargue's Theorem, Pappus' Theorem and Brianchon's Theorem
5. Affine and Projective Planes, and their relationship with each other
6. Inversion, Extended plane, Inversive Geometry and Coaxal families of Circles

Topics include:

<u>Sections</u>	<u>Title</u>
2.1	Geometry and Transformation
2.2	Affine Transformations and Parallel Projections
2.3	Properties of Affine Transformations
2.4	Using the Fundamental Theorem of Affine Geometry
2.5	Affine Transformations and Conics
3.1	Perspective
3.2	The Projective Plane RP^2
3.3	Projective Transformations
3.4	Using the Fundamental Theorem
3.5	Cross-Ratio
5.1	Inversion
5.2	Extending the Plane
5.3	Inversive Geometry
5.4	Fundamental Theorem of Inversive Geometry
5.5	Coaxal Families of Circles

Rescheduling tests/Final: If you have a *university-approved excuse* for missing a test or final, you may be allowed to reschedule, but you must make arrangements with me in advance.

Quizzes: There will be an online quiz each week (14 quizzes all together). Each quiz will be worth 3% toward your final grades.

Students should turn in their solutions as an attachment in .pdf format to an email. Students will have access to their weekly quizzes on each Monday and their quizzes should be turned in by Saturday 12 midnight of the same week.

Tests: There will be three online tests. Each will be worth 11%.

Test 1: Thursday and Friday February 4 and 5, 2016.

Test 2: Thursday and Friday February 25 and 26, 2016.

Test 3: Thursday and Friday March 24 and 25, 2016.

Students should email me their solutions as an attachment in .pdf format to an email.

Final exam: The final exam will be online on April 21-23, 2016.
The final exam will be worth 25%.

The dates for tests and final exam are subject to change.

Grading Scale:

- A= 90-100%
- B= 80-89%
- C= 70-79%
- D= 60-69%
- F= 0-59%

Grading: Your final grade will be determined as follows:

Quizzes: 30%; Test one: 10%; Test two: 10%, Mid-term exam 25%, Final exam 25%.

Students, please carefully review the following information at this link

http://www.westga.edu/assetsDept/vpaa/Common_Language_for_Course_Syllabi.pdf.

It contains important material pertaining to your rights and responsibilities in this class. Because these statements are updated as federal, state, university, and accreditation standards change, you should review the information each semester.

Common Language for Course Syllabi

Updated June 21, 2013

Students should review the following information each semester, because these statements are updated as federal, state, university, and accreditation standards change.

Americans with Disabilities Act

Students with a documented disability may work with UWG Accessibility Services to receive essential services specific to their disability. All entitlements to accommodations are based on documentation and USG Board of Regents standards. If a student needs course adaptations or accommodations because of a disability or chronic illness, or if he/she needs to make special arrangements in case the building must be evacuated, the student should notify his/her instructor in writing and provide a copy of his/her Student Accommodations Report (SAR), which is available only from Accessibility Services. *Faculty cannot offer accommodations without timely receipt of the SAR; further, no retroactive accommodations will be given.*

UWG Email Policy

University of West Georgia students are provided a MyUWG e-mail account. The University considers this account to be an official means of communication between the University and the student. The purpose of the official use of the student e-mail account is to provide an effective means of communicating important university related

information to UWG students in a timely manner. It is the student's responsibility to check his or her email.

Credit Hour Policy

The University of West Georgia grants one semester hour of credit for work equivalent to a minimum of one hour (50 minutes) of in-class or other direct faculty instruction AND two hours of student work outside of class per week for approximately fifteen weeks. For each course, the course syllabus will document the amount of in-class (or other direct faculty instruction) and out-of-class work required to earn the credit hour(s) assigned to the course. Out-of-class work will include all forms of credit-bearing activity, including but not limited to assignments, readings, observations, and musical practice. Where available, the university grants academic credit for students who verify via competency-based testing, that they have accomplished the learning outcomes associated with a course that would normally meet the requirements outlined above (e.g. AP credit, CLEP, and departmental exams).

University of West Georgia Honor Code

At the University of West Georgia, we believe that academic and personal integrity are based upon honesty, trust, fairness, respect, and responsibility. Students at West Georgia assume responsibility for upholding the honor code. West Georgia students pledge to refrain from engaging in acts that do not maintain academic and personal integrity. These include, but are not limited to, plagiarism, cheating, fabrication, aid of academic dishonesty, lying, bribery or threats, and stealing.

The University of West Georgia maintains and monitors a confidential Academic Dishonesty Tracking System. This database collects and reports patterns of repeated student violations across all the Colleges, the Ingram Library, and the School of Nursing. Each incidence of academic dishonesty is subject to review and consideration by the instructor, and is subject to a range of academic penalties including, but not limited to, failing the assignment and/or failing the course. Student conduct sanctions range from verbal warning to suspension or expulsion depending on the magnitude of the offense and/or number of offenses. The incident becomes part of the student's conduct record at UWG.

Additionally, the student is responsible for safeguarding his/her computer account. The student's account and network connection are for his/her individual use. A computer account is to be used only by the person to whom it has been issued. The student is responsible for all actions originating through his/her account or network connection. Students must not impersonate others or misrepresent or conceal their identities in electronic messages and actions.

Academic Honesty

(Acknowledgement is hereby given to Georgia State University on whose policy this is based).

As members of the academic community, all students are expected to recognize and uphold standards of intellectual and academic integrity. The University System of Georgia assumes as a basic and minimum standard of conduct in academic matters that students be honest and that they submit for credit only the products of their own efforts. Both the ideals of scholarship and the need for fairness require that all dishonest work be rejected as a basis for academic credit. They also require that students refrain from any and all forms of dishonorable or unethical conduct related to their academic work.

In an effort to foster an environment of academic integrity and to prevent academic dishonesty, students are expected to discuss with faculty the expectations regarding course assignments and standards of conduct. In addition, students are encouraged to discuss freely with faculty, academic advisers, and other members of the academic community any questions pertaining to the provisions of this policy.

Definitions and Examples

The examples and definitions given below are intended to clarify the standards by which academic honesty and academically honorable conduct are to be judged.

- Plagiarism
- Cheating on examinations
- Unauthorized Collaboration
- Falsification
- Multiple Submissions
- Evidence and Burden of Proof

The list is merely illustrative of the kinds of infractions that may occur, and it is not intended to be exhaustive. Moreover, the definitions and examples suggest conditions under which unacceptable behavior of the indicated types normally occurs. However, there may be unusual cases that fall outside these conditions that also will be judged unacceptable by the academic community.

Plagiarism

Plagiarism is presenting another person's work as one's own. Plagiarism includes any paraphrasing or summarizing of the works of another person without acknowledgment, including the submitting of another student's work as one's own. Plagiarism frequently involves a failure to acknowledge in the text, notes, or footnotes the quotation of the paragraphs, sentences, or even a few phrases written or spoken by someone else.

The submission of research or completed papers or projects by someone else is plagiarism, as is the unacknowledged use of research sources gathered by someone else when that use is specifically forbidden by the instructor. Failure to indicate the extent and nature of one's reliance on other sources is also a form of plagiarism.

Finally, there may be forms of plagiarism that are unique to an individual discipline or course, examples of which should be provided in advance by the instructor. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences of violating this responsibility.

Cheating on Examinations

Cheating on examinations involves giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include the use of notes, texts, "crib sheets," websites, electronic documents or notes, and computer programs during an examination (unless specifically approved by the instructor), or sharing information with another student during an examination (unless specifically approved by the instructor). Other examples include intentionally allowing another student to view one's own examination and forbidden collaboration before or after an examination.

Unauthorized Collaboration