Course Syllabus – Final version

Math 4233-01: College Geometry

Spring Semester, 2015

University of West Georgia

Instructor: Dr. David G. Robinson, Humanities #221, 678-839-4137
E-Mail: davidr@westga.edu
Office Hours (subject to change): *MWF* 11:10 a.m. – 12:50 p.m., 2 – 2:50 p.m.

Class Meetings: *MW* 3:30 – 4:50 p.m., Boyd #302
These will consist of a combination of lectures, question-and-answer sessions, and general discussions. All reading will be assigned in advance of the meeting thereon. (See attached schedule.)

Text/Resources: *Required:*

- Adler, Irving, A New Look at Geometry, Dover Publications, Mineola, NY, 1966, 1994, 2012 (ISBN – 10: 0-486-49851-4); Chapters 1 – 8.
- *Compass and straight-edge* (Strongly recommended: *Circle Master Compass*, from Key Curriculum Press)

Optional:

- *The Geometer's Sketchpad*, Key Curriculum Press; *Regular Edition* **available at no cost** to students on some UWG computers; or *Student Edition* may be purchased online for use on home computer.

Additional Resources:

- G.F. Simmons, (1) *Precalculus Mathematics in a Nutshell*, (2) *Calculus with Analytic Geometry*
- H.S.M. Coxeter, (1) *Geometry Revisited,* (2) *Introduction to Geometry*
- G. Polya, (1) *How to Solve It*, (2) *Mathematical Discovery*
- T.L. Heath, (1) A *History of Greek Mathematics*, (2) *The Thirteen Books of Euclid's Elements*
- John Stillwell, *Mathematics and its History*

Prerequisites: Math 3003with a grade of C or better, or permission of instructor

Main Topics:

- Geometry before Euclid (Chs. 1 – 2)
- Euclid's Geometry (Ch. 3)
- Coordinate Geometry (Ch. 4)
- Transformation Geometry (Ch. 6)
- Non-Euclidean Geometry (Chs. 7 – 8)

General Objectives:

Besides developing and deepening your understanding of the topics mentioned above, there are some general areas of mathematical ability in which you should progress during this course in order to be better equipped for future courses of study and future work situations. These include:

- Proper use of mathematical terminology and notation
- Effective use of hand and electronic tools to discover new ideas, solve problems and present solutions
- Effective use of synthetic, analytic and analogical methods of problem solving
- Proper and effective use of both inductive and deductive reasoning to discover and prove theorems
- Clear and persuasive formal mathematical writing and speaking
- Appreciation for and knowledge of the history of mathematics

Evaluation Procedures:

Your understanding of the material and your progress toward the aforementioned objectives will be evaluated on the basis of your *written and oral solutions* to numerous problems (assigned regularly throughout the term), your *contributions to class meetings*, a *comprehensive final exam* and a *term paper/project* (7 – 10 pages) on a special topic approved by the Professor.

Evaluation Criteria:

Grades on all work will be based upon

- accuracy of information (including calculations and use of mathematical symbols and terminology)
- depth and breadth of solutions
- logic and clarity of arguments
- neatness and clarity of presentation
- correctness of grammar and spelling
- thoroughness and timeliness of work
- intellectual honesty and creativity
- achievement of personal potential
- difficulty of the assignment

Grades: My scale for converting numerical grades (i.e., percentage points) to letter grades will be as follows:

89-100 A, *77-88* B, *65-76* C, *50-64* D, *below 50* F

Your final grade will be based on your *problem solutions* (60%), your *term paper/project* (15%), *final exam* (15%), and *participation in and contributions to class meetings (10%).*

Attendance and Tardiness policies:

- Attendance at class meetings is important! However, should you find for some reason that you must miss a meeting, remember that you are still responsible for any and all material you may have missed during your absence. *You will also automatically lose 1 of the 10 meeting participation/contribution points for each meeting you miss beyond the first.*
- **All electronic correspondence between student and instructor about matters pertaining to this course should be by way of your UWG e-mail account. In particular, all documents for this course may be downloaded from the UWG website by opening the "files" folder for this course in the "myCOURSES" section of the "myUWG" site.**
- I assume you will abide by the *UWG Honor Code. This means among other things that you will not submit any work for a grade that is not your own work.* Violators of the code will receive no credit for the work in question and, in more serious cases, may be expelled from the course with a grade of 'F'.
- For complete information on your rights and responsibilities in this or any other course at UWG go to http://tinyurl.com/UWGSyllabusPolicies.