

Course Syllabus  
**Math 2009-01: Sophomore Seminar**  
Spring Semester, 2016  
University of West Georgia

**Instructor:** Dr. David G. Robinson, Humanities #221, 678-839-4137  
E-Mail: davidr@westga.edu  
Office Hours: *MW* 10:10 – 10:50 a.m., 12:10 – 12:50 p.m., 2:10 – 3:20 p.m.  
*F* 10:10 – 10:50 a.m., 12:10 – 12:50 p.m.

**Class Meetings:** *Mondays* 5:30 – 6:22 p.m., Boyd #303  
These will consist of a combination of lectures, question-and-answer sessions, problem presentations, films, and general discussions.

**Text/Resources:** No required texts.  
[Some good resources for general histories of mathematics are the works of: Carl Boyer, D.M. Burton, F. Cajori, T.L. Heath, Morris Kline, David E. Smith, D.J. Struik, Howard Eves, and John Stillwell.]

**Prerequisites:** Completion of core math requirements (Math 1113 or higher)

**Topics:** Origins and Development of Mathematical Thought:  
*Egypt and Mesopotamia* – Pyramids, Rhind Papyrus, Plimpton 322.  
*Pre-Socratic Hellenic math* – Pythagoras, Zeno, Archytas, *et al.*  
*Athens* – Plato, Eudoxus, Aristotle, *et al.*  
*First Alexandrian School* – Euclid, Archimedes, Apollonius, *et al.*  
*Second Alexandrian School* – Menelaus, Ptolemy, Diophantus, Pappus  
*Chinese, Hindu, Mayan and Arabic math* – Brahmagupta to Al-jabr  
*Southern Europe (1200 – 1600)* – Fibonacci, Cardano, Kepler, Galileo, *et al.*  
*Northern Europe (1600 – 1800)* – Descartes, Fermat, Pascal, Newton, Leibniz, the Bernoullis, de Moivre, Euler, Lagrange, Laplace, *et al.*  
*Modern Era (1800 – present)* – Gauss, Abel, Lobachevsky, Galois, Cauchy, Riemann, Cayley, Boole, Dirichlet, Weierstrass, Cantor, Poincare, Chebyshev, Hilbert, Gödel, Von Neumann, Erdős, Mandelbrodt, *et al.*

Mathematics in Science and engineering: Harmonics, astronomy, optics, agriculture, architecture, mechanics, thermodynamics, chemistry, biology, sociology, political science, finance, insurance, aerodynamics, computing, cryptography, decision theory, information science, internet technology, etc.

Mathematics in the Arts, Popular Culture and Professional Work: Music, poetry, drawing, magic, numerology, gambling, games, sports, drama, cinema, TV; Professions - teaching, law, medicine, insurance, banking, construction, quality control, data analysis, forecasting, coding, etc.

**General Objectives:**

Besides learning about the topics mentioned above, there are some particular skills you should improve upon along the way in order to be able to apply what you learn in this course to future courses of study and work. These include:

- use of mathematical terminology and notation
- mathematical abstraction
- mathematical problem-solving techniques
- communication skills – both formal and informal
- appreciation of the interplay between mathematics and the surrounding culture

**Evaluation Procedures:**

Your understanding of the subject material and your progress toward the aforementioned objectives will be evaluated on the basis of your *written work*, *an oral presentation*, and *class participation* (attendance, preparedness and contributions.)

**Evaluation Criteria:** Grades on all work will be based upon

- accuracy of information (including calculations and use of mathematical notation 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 the following distribution of points:

<i>Math Autobiography (1 type-written page)</i>	5 %
<i>Weekly Problem sets (2 – 3 problems per week)</i>	40 %
<i>Final Exam (15 minute Oral Presentation)</i>	15 %
<i>Class participation *</i>	40%

\*Class participation includes attendance: Missing more than one class meeting *for any reason* will result in a deduction of 3 points per absence (beyond the first) from the 40 points available.

**Important Reminders:**

- Attendance is important! However, should you find for some reason that you must miss a class meeting, remember that you are still responsible for any and all material you may have missed during your absence.
- Assignments must be turned in at the prescribed times (see attached schedule) in order to be eligible for any credit. *All work on these assignments must be your own, i.e., no help from anyone, without prior permission from the instructor. Failure to abide by this policy will lead to serious consequences: automatic zero on the assignment in question, possible expulsion from the class, etc.*
- 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.
- For complete information on your rights and responsibilities in this or any other course at UWG go to <http://tinyurl.com/UWGSyllabusPolicies>