SPECIAL TOPICS: GRAPH THEORY   1:00PM MWF   FALL 2011   SH 306

Instructor: Jonathan White

E-Mail: JWhite@Coe.Edu

Web Page: http://public.coe.edu/~jwhite/

Office: Stuart 316

Office Hours: MTWF 9:00-9:50am and by appointment

Office Phone: 399-8280

Home Phone: 362-3350 (between 7am and 10pm)

Text: *Introduction to Graph Theory: A Discovery Course for Undergraduates*, James M. Benedict

This course will provide an introduction to the area of mathematics known as Graph Theory. My intention is to convey that content, as well as a serious taste of what "real mathematics" is like, through what is sometimes called a Moore Method approach, meaning that students are expected to work out most of the material themselves, with class time almost entirely devoted to students presenting their work to the class.

The class will work very differently, both in terms of daily conduct and grading, than typical math courses. My hope is that we can provide an excellent learning experience to an extremely wide range of interests, and to accomplish that I propose the grading system outlined on the attached sheet. The intention is to provide sufficient flexibility for each student to customize the course to suit individual interests and abilities.

Since I hope this course will be different things for different people, it is difficult to provide a true synopsis here. What should be true for everyone is that this course will give a sort of case study in how, when you examine something closely, mathematical structures emerge on various levels; when you further study those structures, you can learn things that were completely obscure at the initial examination, and in the end you can end up learning deep lessons with applicability far beyond the original field.

Any students with disabilities which might affect their performance in this class should contact me as soon as possible to arrange accommodations.

Coe's faculty has adopted an academic integrity policy. It is your responsibility to understand and follow it.

Diversity, in all its forms, is valuable.

Grading Scheme

Grades will not be point-based, but rather activity-based. Earning a certain grade in this class will require accomplishing a certain number of tasks. The following table specifies the requirements (of which *all* must be met) for each grade:

	A	A–	B+	B	B–	C+	C	C–
Participation	41+	41+	40+	40+	40+	39+	39+	39+
Problems Presented	21+	20+	19+	18+	17+	16+	15+	14+
Articles	2+	2+	1+	1+	1+	1+	1+	1+
Math Culture	12+	11+	10+	9+	8+	7+	6+	5+
Quests	100%+	100%+	90%+	90%+	90%+	80%+	80%+	80%+

"Articles" are published, peer-reviewed articles to be read and presented in class. Articles should be pre-approved by Jon. These will generally happen in the second half of the semester.

"Quests" will be evaluations somewhere between quizzes and tests, generally undertaken on an individual basis. In most cases they may be attempted as many times as desired.

SPECIAL TOPICS: GRAPH THEORY   1:00PM MWF   FALL 2011   SH 306

SPECIAL TOPICS: GAME THEORY   1:00PM MWF   SPRING 2009   SH 309

Math Culture Points

A significant portion of the grade for this course will take the form of Math Culture Points. These will be earned through activities outside of class including, but not necessarily limited to, those listed below:

Activity	Points	Max #
Colloquium Attendance	1	–
Colloquium Presentation	1-3	2

Meeting Attendance
   Midwest Undergraduate Mathematics Symposium (April 3rd - 4th)
   Nebraska Conference for Undergraduate Women in Mathematics (Jan. 30th - Feb. 1st)
	3	2

Mathematics Competition Participation
   Iowa Collegiate Mathematics Competition (Feb. 28th)
   Mathematical Contest in Modeling (Feb. 5th - 9th)
	2	2

Math Culture Reading
   Some weeks specific readings will be posted on the course web page
   With approval, any column on MAA.org
   With approval, an article from *Math Horizons*, *CMJ*, etc.
	1	–
		5
		5

Math Club Activities (when appropriate) Winter Break Book, Movies, Pi Day celebration, Speakers, etc.	1	5
Volunteer Math Outreach Working with students at Polk Elementary, etc.	1	3

Other Appropriate Coe Activities
   Attending a Quantitative Research Symposium Presentation
   Poverty Simulation
   Psychology Experiment Participation
   Contemporary Issues Forum
	1	
		2
		–
		2
		–

Generally Math Culture Points can be earned for at most two activities in any given week, so you should plan to spread your participation throughout the semester. In each case above, credit assumes both full participation and posting a brief summary/response on Moodle. These reflections should generally be between 100 and 300 words, and include both a brief summary and your personal thoughts on the event, and must be submitted within one week of the event.