Module Syllabus:

Course Title: Euclidean Geometry
Course Code: 250261
Semester: Second 2004/2005
Lecturer :   Amin Witno
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Short Description:

This module is an axiomatic approach to modern Euclidean Geometry with emphasis on reading and writing mathematical proof. Topics include Euclid's five postulates, Models in Finite Geometry, Projective Geometry, Hilbert's axioms for Euclidean Geometry, Neutral Geometry, Hyperbolic Geometry, and further discussion on the Parallel Postulate.

Topics by the Week:

Week	Dates	Topics
1	20/2 – 24/2	Survey of the origins of geometry, Euclid's postulates, the parallel postulate and discussion of its attempted proofs
2	27/2 – 3/3	Revision of the methods of mathematical proofs.
3	6/3 – 10/3	The Incidence Axioms and propositions.
4	13/3 – 17/3	Models and Isomorphisms of models
5	20/3 – 24/3	The Betweenness Axioms and propositions
6	27/3 – 31/3	The Betweenness Axioms and propositions (continue)
7	3/4 – 7/4	The Congruence Axioms and propositions
8	10/4 – 14/4	The Congruence Axioms and propositions (continue)
9	17/4 – 21/4	The Continuity Axioms and the Parallelism Axiom
10	24/4 – 28/4	Theorems in Neutral Geometry
11	1/5 – 5/5	Theorems in Neutral Geometry (continue)
12	8/5 – 12/5	Equivalence of the Euclid's Parallel Postulate
13	15/5 – 19/5	Hyperbolic Geometry axioms and theorems
14	22/5 – 26/5	Consistency of the 2 geometries, Discussions on elliptic geometry and other geometries
15	29/5 – 2/6	Project: Drawing in Hyperbolic Geometry using "Non-Euclid" software
16	5/6 – 14/6	Final Exam will be held in this period

Mark Distribution:
- Exam 1   3/4/2005   20%
- Exam 2   8/5/2005   20%
- Projects   TBA   10%
- Final Exam   6/6/2005   50%

Textbook:
- Marvin J. Greenberg, Euclidean and Non-Euclidean Geometries, 3rd Edition 1994, Freeman

Websites:
- Basic Sciences Department- http://www.philadelphia.edu.jo/math
- Amin Witno Website- http://www.witno.com/
- Hyperbolic Geometry freeware by Joel Castellanos- http://cs.unm.edu/~joel/NonEuclid/