FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—NEW COURSE PROPOSAL

DEPARTMENT NAME: MATHEMATICAL SCIENCES	COLLEGE OF: SCIENCE

RECOMMENDED COURSE IDENTIFICATION:

PREFIX ____MTG_____ **COURSE NUMBER** _____6226_____ **LAB CODE** (L or C) _____

(*TO OBTAIN A COURSE NUMBER, CONTACT ERUDOLPH@FAU.EDU*)

COMPLETE COURSE TITLE

ADVANCED EUCLIDEAN GEOMETRY

EFFECTIVE DATE
(first term course will be offered)

_____

CREDITS:
3

TEXTBOOK INFORMATION: R. A. JOHNSON, ADVANCED EUCLIDEAN GEOMETRY, DOVER, 2006.

GRADING (*SELECT ONLY ONE GRADING OPTION*): **REGULAR** ____x__ **PASS/FAIL** _____ **SATISFACTORY/UNSATISFACTORY** _____

COURSE DESCRIPTION, NO MORE THAN 3 LINES:

A course on Advanced Euclidean Geometry emphasizing the uses of homogeneous barycentric coordinates in triangle geometry and of dynamic software to explore basic theorems and problems.

PREREQUISITES W/MINIMUM GRADE:*	COREQUISITES:	OTHER REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL):
LINEAR ALGEBRA OR PERMISSION OF INSTRUCTOR	NONE	

PREREQUISITES, COREQUISITES & REGISTRATION CONTROLS SHOWN ABOVE WILL BE ENFORCED FOR ALL COURSE SECTIONS.

***DEFAULT MINIMUM GRADE IS D-.**

MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE:

PH D IN MATHEMATICS

Other departments, colleges that might be affected by the new course must be consulted. List entities that have been consulted and attach written comments from each.

_____ Paul Yiu, yiu@fau.edu, (561)-297-2481_____

Faculty Contact, Email, Complete Phone Number

SIGNATURES

SUPPORTING MATERIALS

Approved by:	*Date:*
Department Chair: _____	_____
College Curriculum Chair: _____	_____
College Dean: _____	_____
UGPC Chair: _____	_____
Dean of the Graduate College: _____	_____

Syllabus—must include all details as shown in the UGPC Guidelines.

Written Consent—required from all departments affected.

Go to: *http://graduate.fau.edu/gpc/* to download this form and guidelines to fill out the form.

Email this form and syllabus to *sfulks@fau.edu* and *eqirjo@fau.edu* one week **before** the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website by committee members prior to the meeting.

MTG 6226 Advanced Euclidean Geometry (3 credits)

Catalogue description: A course on Advanced Euclidean Geometry emphasizing the uses of homogeneous barycentric coordinates in triangle geometry and of dynamic software to explore basic theorems and problems.

Prerequisites: Linear Algebra or permission of instructor.

Corerequisites: None.

Course objectives: Students should be able to

1. perform geometric constructions using a dynamic software,
2. conjecture geometric theorem with the aids of dynamic software,
3. write short proofs of geometric propositions when possible.

Recommended Texts

1. R. A. Johnson, Advanced Euclidean Geometry, Dover reprint, 2007.
2. P. Yiu, Introduction to the Geometry of the Triangle, Florida Atlantic University Lecture Notes, 2001.

Bibliography

1. N. Altshiller-Court, College Geometry, Dover reprint, 2007.
2. P. Yiu, Euclidean Geometry, Florida Atlantic University Lecture Notes, 1998.
3. Publications on classical Euclidean geometry in various journals.

 Syllabus
1. Review of Euclidean Geometry and Trigonometry (1 week)
2. Introduction to dynamic software (Geogebra or Geometer's Sketchpad) (1 week)
3. The arbelos (1 week)
4. Homogeneous barycentric coordinates in triangle geometry (1 week)

5. The Euler line and nine-point circle (1 week)
6. Tritangent circles (1 week)
7. The Pythagorean configuration (1 week)
8. The symmedian point and other classical triangle centers (2 week)
9. Simson lines and reflections (1 week)
10. Inversions (2 weeks)
11. Conics (2 weeks)
12. Further topics (2 weeks)
    Total: 16 weeks

Method of Instruction: Lecture.

Assessment: Homework 40%/Journal 20%/ Tests 20%/Exam 20%

Grading Criteria: 92--100% A; 90--91% A-; 88-89% B+; 82—87% B; 80—81% B-; 78—79% C+; 70—77% C; 60—69% D; 0—59% F.

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca Ration – SU 133 (561-297-388), in Davie – MOD 1 (954-226-1222), in Jupiter – SU 117 (561-799-8585), or at the Treasure Coast – CO 128 (772-873-3305), and follow all OSD procedures.

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a series breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see http://www.fau.edu/regulations/chapter4/4/001_Honor_Code.pdf