**DEPARTMENT NAME:** MATHEMATICAL SCIENCES  
**COLLEGE OF:** SCIENCE

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**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

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**CREDITS:**  
3

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

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**EFFECTIVE DATE**  
*(first term course will be offered)*

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

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**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.

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**PREREQUISITES W/MINIMUM GRADE:**  
LINEAR ALGEBRA OR PERMISSION OF INSTRUCTOR

**COREQUISITES:**  
NONE

**OTHER REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL):**

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**MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE:**  
PHD IN MATHEMATICS

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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.

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**Paul Yiu, viu@fau.edu, (561)-297-2481**
Faculty Contact, Email, Complete Phone Number

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**SIGNATURES**

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

**Date:**

**SUPPORTING MATERIALS**

**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.

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**FAUnewverseGrad—Revised May 2008**
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


Bibliography

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