FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—NEW COURSE PROPOSAL

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

RECOMMENDED COURSE IDENTIFICATION:

PREFIX _____MAS_____ **COURSE NUMBER** ___6405_____ **LAB CODE** (L or C) _____

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

COMPLETE COURSE TITLE

ADVANCED ALGEBRA AND GEOMETRY

EFFECTIVE DATE
(first term course will be offered)

_____

CREDITS:
3

TEXTBOOK INFORMATION:
.   J. Bewersdorff, Galois Theory for beginners, AMS, 2006.
.   C. V. Durell and A. Robson, Advanced Trigonometry, Dover reprint, 2003.

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

COURSE DESCRIPTION, NO MORE THAN 3 LINES:

Integrative treatment of advanced topics in classical algebra and geometry.

PREREQUISITES W/MINIMUM GRADE:* MODERN ALGEBRA (MAS 4301) OR PERMISSION BY INSTRUCTOR	**COREQUISITES:** NONE	**OTHER REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL):**

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.

MAS 6405 Advanced Algebra and Geometry (3 credits)

Catalogue description: Integrative treatment of advanced topics in classical algebra and geometry.

Course objectives: Students will

1. learn an integrative treatment of advanced topics in classical algebra and geometry,
2. learn how to handle more efficiently challenging problems in classical algebra, geometry, and calculus,
3. be able to write simple proofs of propositions when possible.

Prerequisites: Modern Algebra (MAS 4320) or permission of instructor.
Corequisites: None.

Recommended Texts

1. J. Bewersdorff, Galois Theory for beginners, AMS, 2006.
2. C. V. Durell and A. Robson, Advanced Trigonometry, Dover reprint, 2003.

Bibliography:

1. H. S. M. Coxeter, Introduction to Geometry, Wiley classics.
2. H. B. Fine, College Algebra, AMS Chelsea, 2004.
3. L. S. Hahn, The use of complex numbers in geometry, MAA, 1992.
4. G. H. Hardy, A Course of Pure Mathematics, Cambridge Library.
5. G. H. Hardy, L. E. Littlewood, and G. Polya, Inequalities, Cambridge Library .
6. K. Kendig, Conics, MAA, 2005.
7. B. Spain, Analytic conics, Dover reprint, 2007.
8. P. Yiu, Introduction to the Geometry of the Triangle, Florida Atlantic University Lecture Notes, 2001.

Syllabus:

1. The uses of complex numbers (2 weeks)
2. Theory of equations and symmetric polynomials (3 weeks)
3. Inequalities (1 week)
4. Analytic theory of conics (3 weeks)
5. The art of integration (2 weeks)
6. Differential geometry of plane and space curves (3 weeks)
7. Selected advanced topics on geometry (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