Ferris State University

MATH126 Section 001
Algebra & Analytic Trigonometry

Spring 2009

Instructor
Dr. J.F. (Jim) Nystrom
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Office and Phone
ASC 2056, (213) 591 – 5864

Office Hours
MW 10:00 – 11:50 a.m., or by appointment.

Required Text
Ewen, Gary, Trefzger,
Technical Mathematics

Lecture
MTWF 9:00 – 9:50 am, STR 120

Class URL
http://myhomepage.ferris.edu/~nystroj/math126/
(and MyFSU course webpage)

• Course Description (Catalog Description)

(4 credits) Analytic trigonometry and trigonometric equations, the j-operator, DeMoivre's Theorem, non-linear inequalities, applications of logarithmic and exponential equations and plane analytic geometry with polar sketching. Equations of higher degree including the remainder theorem, factor theorem, synthetic division, rational and irrational roots of polynomials.

Requires: MATH 116 with a grade of C- or better or 24 ACT or 560 SAT

• Learning Outcomes

Students who have completed Math 126 are expected to be able to:
1. Simplify and/or solve equations involving exponential and logarithmic functions (including base e logarithms).
2. Demonstrate knowledge of trigonometric functions by proving trigonometric identities, graphing trigonometric functions, and solving trigonometric equations.
3. Identify, analyze and factor polynomial and rational functions of high degree; which will include the use of complex numbers and polynomial division.
4. Solve and graph inequalities in one or two variables, including graphical solutions for systems of inequalities.
5. Analyze, identify and graph various conic curves; including the circle, the parabola, the ellipse, and the hyperbola. Analyze and graph equations in polar coordinates.
• Grading

The course grade is based on Midterm Examinations, Quizzes, and a Comprehensive Final Exam. The following tables show how the course numerical grade (of 100 total points) is calculated and also how the course letter grade will be assigned.

Calculation of 100 point Numerical Grade

<table>
<thead>
<tr>
<th>Component</th>
<th>Percent of Numerical Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>10</td>
</tr>
<tr>
<td>Midterm Examination I</td>
<td>20</td>
</tr>
<tr>
<td>Midterm Examination II</td>
<td>20</td>
</tr>
<tr>
<td>Midterm Examination III</td>
<td>20</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30</td>
</tr>
</tbody>
</table>

Calculation of Letter Grade from Numerical Grade

<table>
<thead>
<tr>
<th>Grade Letter</th>
<th>Numerical Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&gt;= 92</td>
</tr>
<tr>
<td>A-</td>
<td>86 – 92</td>
</tr>
<tr>
<td>B</td>
<td>80 – 86</td>
</tr>
<tr>
<td>B-</td>
<td>74 – 80</td>
</tr>
<tr>
<td>C</td>
<td>68 – 74</td>
</tr>
<tr>
<td>C-</td>
<td>62 – 68</td>
</tr>
<tr>
<td>D</td>
<td>50 – 62</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 50</td>
</tr>
</tbody>
</table>

(Please note that the letter grade assignment is the guaranteed curve. The instructor may or may not lower the grade required for the "A", for instance, at his discretion.)

The Midterm Grade numerical grade calculation will use Quizzes for 10% and the first Midterm Exam at 90%.

• Calculator

A TI-30X, TI-36, or similar non-programmable, non-graphing calculator may be used on exams. No cell-phone or multiline-display calculators will be permitted during examinations.

• Homework and Quizzes

The homework consists of suggested problems. Homework will be assigned in class, and will be listed on the course website. There will be time in-class to review homework solutions and ask questions about the homework. There will be five – eight “pop” quizzes during the semester. No make-up quiz will be given for missed quizzes. One quiz grade will be dropped at the end of the semester.

• Attendance

For this course, while I strongly encourage attendance at each class, attendance is NOT required. If you miss a class, it is your responsibility to obtain any notes, handouts, etc., that you missed. (That is, do not ask the instructor for the notes from a class you missed.)
• Examinations

There will be three in-class Midterm examinations during the semester (tentatively set for February 5, 2009, March 19, 2009 and April 27, 2009). The Final Exam is May 5, 2009. **No make-up exam** for the Midterms will be given. Upon verification of an excused absence, the Final or another Midterm grade (whichever is lowest) will also count as the grade for a single missed Midterm exam. **NOTE:** The Midterm and Final Exams may be fairly difficult, meaning that if you do not understand the material very well, you will probably not get a very good score on the exams. Also, the instructor may choose to curve exam grades at his discretion (based on the difficulty of the exam and class performance).

• Student Conduct

All students should refrain from cheating, they should not be disruptive in class, and in general should follow the FSU Student Code of Conduct (as outlined in the FSU Student Handbook, available online from the Office of Student Conduct). Failure to follow said code will most certainly result in sanctions in accordance with the aforementioned handbook and any other applicable rules and regulations. See the **COLLEGE OF ARTS AND SCIENCES SYLLABUS ATTACHMENT** for more details about potential consequences of cheating and/or disruptive behavior. Students should turn cell phones off or to silent while in class; and students should never, ever answer a call in class.

• Services for Students with Disabilities

If you need disability accommodations in this class, you should first contact the Ferris State University Disabilities Service Office (DSO). If you suspect that you may need special accommodations, the DSO will review your documentation to determine your eligibility for services or accommodations. It is important that you contact them in a timely fashion as it may take several days to review requests and prepare accommodations.

• General Advice

Don't panic. Attend class and be on time. Study hard: keep up with the reading, start early on (and complete) all the assignments, and ask the instructor questions when you have any. Review the College of Arts & Sciences Syllabus Attachment for other helpful and important information.

**NOTE:** The last day to drop this class is March 26, 2009.
• Tentative Course Outline for MATH126-001 (Spring 2009)

We will try to cover most of the later chapters of the course textbook this semester, most likely, in the following order:

- Chapter 9: Exponentials and Logarithms
- Chapter 12: Graphing the Trigonometric Functions

**Midterm Examination (February 5, 2009)**

- Chapter 13: Trigonometric Formulas and Identities
- Chapter 14: Complex Numbers

**Midterm Examination (March 19, 2008)**

- Chapter 16: Polynomials of Higher Degree
- Chapter 17: Inequalities and Absolute Values
- Chapter 20: Analytic Geometry

**Midterm Examination (April 27, 2008)**

- Continue Chapter 20 …

**Final Exam (May 5, 2008)**