NEW RIVER COMMUNITY COLLEGE

DUBLIN, VIRGINIA

COURSE PLAN

Course Number and Title: MTH 178 – Topics in Analytic Geometry

Prepared By: Harriette M. Roadman (Instructor) — Spring, 2007 (Date)

Approved By: _____ (Interim Dean) — Spring, 2007 (Date)

Course Description

Covers conic sections, polar and parametric graphing. Designed for mathematical, physical, and engineering science programs.
Corequisite: MTH 176. Lecture 2 hours per week.

Prerequisites

MTH 175 (Calculus of one variable I) or equivalent.

Instructor Information

Harriette Markos Roadman
Office: Godbey Hall 57
Office hours: Will be posted on the office door and on Blackboard

Phone: 540-674-3600, ext. 4384
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Instructional Materials

Textbook: Calculus: Early Transcendentals, James Stewart, 5th Ed., Thomson-Brooks/Cole, 2003, ISBN 0-534-39321-7
Calculator: TI 84, 86 or 89
Software: MATLAB 6

Specific Objectives

With successful completion of this course, the student should be able to:

1. Identify and sketch parabola.
2. Find the equation of parabola in applications.
3. Identify and sketch ellipses.
4. Find the equation of an ellipse in applications.
5. Identify and sketch hyperbola.
6. Find the equation of hyperbola in applications.
7. Find the equation of conic sections when translated.
8. Find the equation of conic sections when rotated.
9. Translate between rectangular and polar coordinates.
10. Sketch graphs in polar coordinates.
11. Find derivatives and integrals in polar coordinates.
12. Express plane curves in parametric form.
13. Find the length of plane curves.
14. Sketch vectors in the plane.
15. Express vectors in the plane in algebraic form.
16. Evaluate vector-valued functions.
17. Find curvature and acceleration of functions.
18. Define lines and curves in three-space.
19. Find velocity, acceleration, and curvature of functions in three-space.
20. Evaluate integrals numerically.
21. Solve equations numerically.

Instructional Procedures

Instruction will be primarily through lecture, utilizing the classroom electronic display systems, calculators, and MATLAB software. Students will be assigned homework problems from the text book and worksheets using the MATLAB software. The topics are divided into 3 units, with a test on each unit, and a comprehensive final exam at the end of the semester.

Course Communications: We will use Blackboard and email for outside of class communication, grade postings and document availability. Course documents will be posted in Documents in Blackboard. Any alteration in class meetings, assignment due dates, or any other pertinent information will be posted in Blackboard. You should check the announcements in Blackboard, and your VCCS email account, frequently.

Attendance: The NRCC attendance policy will be followed. There are no excused or unexcused absences. Students are responsible for any information missed when they are absent, including any changes in the schedule. Attendance will be monitored closely. Class attendance is considered to be an essential component in learning. NRCC's policy states that the instructor may withdraw you from a class if you are absent for the equivalent of two week's worth of classes; this includes absences due to illness and emergency. If you have extenuating circumstances it is your responsibility to contact me.

Academic Integrity

It is expected that all work completed in this course is the result of effort by the student registered in the course. If it is determined that the student registered for the course has cheated by obtaining unauthorized assistance on any of the graded components of the course, the student will receive an "F" for the course.

Worksheets

Worksheets using MATLAB will be handed out for each unit. Students will work in groups of 3 or 4, each group turning one worksheet. The worksheets will be graded on a 10 point scale. Each member of the group will receive the same grade.

Homework

The best way to learn mathematics is to work out mathematical problems. Therefore, homework problems are assigned in each section covered. The homework will be collected, and one problem from each homework assignment will be graded. You will receive a bonus on each test based on the number of correct problems. The bonus will be calculated as follows:

Integer value of: [(# of correct homeworks turned in)*10/(# of possible homeworks)]

The problems must be in order and fully worked out, not just the answers from the back of the book.
The work must be clear and readable.
Assignments must be turned in at the beginning of class on the due date.
No late work will be accepted.

Schedule of Topics and Assignments

With this Course Plan, you should also receive a schedule of topics to be covered, and the assigned homework problems in the text. You will be given a due date for each homework assignment at the time the assignment is made.

Additional Information:

If you are unable to meet with me during scheduled office hours, please contact me and we can arrange an alternate meeting time/place. The best way to get in touch with me is via email.

Evaluation Criteria and Grading Scale

The course grade will be determined by the student's performance on each of the three Tests, the Worksheets and the comprehensive Final Exam.

Tests	60 %
Worksheets	15 %
Final Exam	25 %

There will be no make-up tests. The final exam grade will be substituted for the lowest test grade if it improves your average.

Letter grades will be assigned based on your final percentage as follows:

Course (%)	Grade
90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
Below 60	F

Withdrawal Policy

Student Initiated Withdrawal Policy

A student may drop or withdraw from a class without academic penalty during the first sixty percent (60%) of a session. For purposes of enrollment reporting, the following procedures apply:

a. If a student withdraws from a class prior to the termination of the add/drop period for the session, the student will be removed from the class roll and no grade will be awarded.

b. After the add/drop period, but prior to completion of sixty percent (60%) of a session, a student who withdraws or is withdrawn from a course will be assigned a grade of "W." A grade of "W" implies that the student was making satisfactory progress in the class at the time of withdrawal, that the withdrawal was officially made before the deadline published in the college calendar, or that the student was administratively transferred to a different program.

c. After that time, if a student withdraws from a class, a grade of "F" or "U" will be assigned. Exceptions to this policy may be made under documented mitigating circumstances if the student was passing the course at the last date of attendance.

A retroactive grade of "W" may be awarded only if the student would have been eligible under the previously stated policy to receive a "W" on the last date of class attendance. The last date of attendance for a distance education course will be the last date that work was submitted.

Late withdrawal appeals will be revised and a decision made by the Director of Student Services.

Instructor Initiated Withdrawal Policy

A student who adds a class or registers after the first day of class is counted absent from all class meetings missed. Each instructor is responsible for keeping a record of student attendance in each class.

Students who have not attended class or picked up/accessed distance learning materials by the last day to drop class and receive a refund must be withdrawn by the instructor during the following week. No refund will be applicable.

Since attendance is not a valid measurement for Distance Education (DE) courses, students may be withdrawn due to non-performance. Students should refer to his/her DE course plan for the instructor's policy.

When a student's absences equal twice the number of weekly meetings of a class (equivalent amount of time for summer session), the student may be dropped for unsatisfactory attendance in the class by the instructor.

When an instructor determines that absences constitute unsatisfactory attendance, an Instructor Withdrawal Form should be completed and submitted to the Admissions and Records Office within five days of when the student met the withdrawal criteria. The last date of attendance must be documented. A grade of "W" will be recorded during the first sixty percent (60%) period of a course. Students withdrawn after the sixty percent (60%) period will receive a grade of "F" or "U" except under documented mitigating circumstances when a letter of appeal has been submitted by the student. A copy of this documentation must be placed in the student's academic file.

The student will be notified of the withdrawal by the Admissions and Records Office. An appeal for reinstatement into the class may be approved only by the instructor.

Diversity Statement

The NRCC community values the pluralistic nature of our society. We recognize diversity including, but not limited to, race, ethnicity, religion, culture, social class, age, gender, sexual orientation and physical or mental capability. We respect the variety of ideas, experiences and practices that such diversity entails. It is our commitment to ensure equal opportunity and to sustain a climate of civility for all who work or study at NRCC or who otherwise participate in the life of the college.

Disability Statement

If you are a student with a documented disability who will require accommodations in this course, please register with the Disability Services Office located in the Counseling Center in Rooker Hall for assistance in developing a plan to address your academic needs.