

**NEW RIVER COMMUNITY COLLEGE**

**DUBLIN, VIRGINIA**

**COURSE PLAN**

**Course Number and Title:** MTH 115-02 - Technical Mathematics I

**Prepared by:** Travis Coake Spring, 2010  
(Instructor) (Date)

**Approved by:** \_\_\_\_\_ Spring, 2010  
(Dean) (Date)

**Instructor: Travis Coake**  
**Email: [nrcoakt@nr.edu](mailto:nrcoakt@nr.edu)**  
**Office: 50 Godbey**  
**Phone: 674-3600 ext. 4299**  
**Office Hours: TBA**

**I. Course Description**

Presents algebra through exponential and logarithmic functions, trigonometry, vectors, analytic geometry, and complex numbers. Prerequisites: A placement recommendation for MTH 115 and Algebra I and geometry, or Algebra I and Algebra II, or equivalent. Lecture 3 hours per week.

**II. Introduction**

This is a technical mathematics course that includes topics needed in a variety of technical fields. Topics included are algebra, trigonometry, vectors, and complex numbers. A strong background in algebra is necessary for success in this course.

**III. Specific Objectives**

At the conclusion of this course a student who earns a 'C' or higher will be able to:

1. Use a scientific calculator
2. Round-off correctly
3. Identify significant digits
4. Use scientific notation
5. Understand/use line and angle relationships

6. Understand/use terms related to an angle(s)
7. Classify triangles by their sides/angles.
8. Calculate the perimeter of a polygon
9. Calculate the circumference of a circle
10. Calculate the area of a polygon
11. Calculate the area of a circle
12. Apply concepts of sector and arc length of a circle
13. Recognize various geometric solids such as cylinder, cone, pyramid, prism, sphere
14. Calculate surface area and volume of various geometric solids
15. Understand/use the concept of similar triangles
16. Know/apply the fact that  $180^\circ = \pi$  radians
17. Define the trigonometric functions and their values
18. Solve right triangles and their applications
19. Understand the signs of the trigonometric function of angles greater than  $90^\circ$
20. Determine trigonometric functions of any angle
21. Solve problems using radian measure and its applications
22. Understand vectors and their components
23. Solve applications involving vectors
24. Solve oblique triangles using law of sine and/or law of cosines
25. Understand complex numbers and their basic operations
26. Convert between forms of rectangular, polar, and exponential complex numbers

#### **IV. Instructional Procedures**

The instructional procedures will include lectures, discussion, problem sessions, reviews, and tests. Students are encouraged to ask questions and respond to questions asked by either the instructor or another student.

#### **V. Instructional Materials**

##### **A. Student Materials**

1. Textbook: Basic Technical Mathematics, 9<sup>th</sup> Edition  
Author: Allyn J. Washington  
Publisher: Pearson, Prentice Hall  
ISBN-13: 978-0-13-814225-4
2. A calculator with dual-line display  
Some suggested models are: TI-30XII, TI-34

##### **B. Instructor Materials**

1. The instructor will use chalkboard/whiteboard, transparencies, and graphing calculators when appropriate.
2. The instructor will prepare handouts to supplement material in the book when appropriate.

## VI. Course Content

- A. Real number operations and calculator skills (Chapter 1)
- B. Basic geometry (Chapter 3)
- C. Trigonometric functions (Chapter 5)
- D. Vectors (Chapter 8)
- E. Complex numbers (Chapter 14)

## VII. Evaluation

**Tests:** There will be five (5) tests. Each of these will be announced several days in advance. No test will be given early. There are no make-up tests. A test will be cancelled only if the college is officially closed. The lowest test grade will be dropped.

**Quizzes:** There will be both announced and unannounced quizzes and/or homework grades. Each quiz will be from 5 to 20 points. The homework and quizzes combined will make up 15% of the final grade. There will be no make-up quizzes and no quiz will be given early. In the event that a student misses a quiz or homework, then I will drop the lowest quiz grade and the lowest homework grade.

**Exam:** The final exam will be a cumulative final exam.

**Course Grade:** Your Course Average will be determined by your performance on the graded components of the course:

<b>Homework</b>	15%
<b>Tests</b>	60%
<b>Final Exam</b>	25%

Grades will be determined from your Course Average:

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

**Cheating:** Any student involved in cheating will receive a grade of "0" for that material and a possible "F" for the course. The final exam may not replace a "0" for cheating.

**Attendance:** Regular and prompt attendance is necessary for success in this course and all of your other courses. If a student misses a quiz because he is tardy or leaves class early, a grade of "0" is recorded for that quiz. Two tardies or early departures will count as one absence.

## **VIII. 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 from a class 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" 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 "I" may be awarded only if the student would have been eligible under the previously stated policy to receive a "I" 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 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. Two tardies are equivalent to 1 absence.

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" except under 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.

### **No-Show Policy**

A student must either attend face-to-face courses or demonstrate participation in distance learning courses by the last date to drop for a refund. A student who does not meet this deadline will be reported to the Admissions and Records Office and will be withdrawn as a no-show student. No refund will be applicable, and the student will not be allowed to attend/participate in the class or submit assignments. Failure to attend or participate in a course will adversely impact a student's financial aid award.

### **COURTESY**

Please turn off your cell phone before class. If you come in late, sit in the empty desk near the door.

## **IX. Diversity and Disability Statements**

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 for assistance in developing a plan to address your academic needs.

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.