

## **MATH 1420 Topics in Contemp. Math II**

### **Credit Hours**

3 credit hours

### **Course Description**

A conceptual and problem solving approach to combinatorics, discrete probability, descriptive statistics, informal solid and plane geometry, transformations, measurement, and coordinate geometry.

### **Prerequisite Course(s)**

Two years of high school algebra and acceptable placement score, or Learning Support Modules 1 - 12

### **Text (See Instructor for Details)**

Thinking Mathematically, Blitzer, 5e  
ISBN: 0321645855 Package w/ MyMathLab

### **Other text or materials required**

Calculator, graph paper, compass

### **Academic Honesty**

Acts of academic dishonesty are serious offences at JSCC. Suspension from the college could be the consequence for any act of dishonesty. No form of cheating will be tolerated. See the JSCC catalog for additional information.

### **Prerequisite Competencies**

It is expected that students have mastery of these prerequisite competencies. These topics will not be covered during class time. If assistance is needed regarding these topics, please use the services and materials provided by the Academic Assistance Center and Math Learning Center+.

Competencies include but are not limited to:

- Identification of geometric shapes and awareness of their properties
- Computation of length, area, perimeter, volume, and area of geometric figures
- The ability to graph a straight line and to graph a circle
- Experience solving linear equations
- The use of standard measurement units
- Experience with use of metric system computations
- Simple probability experiments

## Exit Competencies:

Upon successful completion of this course, a student will demonstrate comprehension and application of the following competencies.

- Construct line segments, circles, parallel lines
- Classify polygons, quadrilaterals, angles
- Identify vertical, horizontal, intersecting and parallel lines
- Know the parts of triangles and how to find various angles and/or sides
- Solve applied problems using similar triangles
- Find the six trig ratios for a given angle and solve applied problems using trig
- Design mosaics
- Perform measurement in United States and metric systems involving distance, weight, volume, temperature
- Solve applied problems involving area and volume
- Change units within the metric system and within the US system
- Know the definition of a logarithm and evaluate logarithms
- Solve exponential and logarithmic equations
- Compute interest, payments, total loan amount, APR
- Classify sequences as arithmetic, geometric or Fibonacci and calculate a term
- Calculate empirical probabilities
- Use a sample space to calculate probabilities
- Compute factorials
- Compute combinations and permutations and perform applied counting problems
- Construct a frequency distribution, bar graph, line graph, stem-and-leaf plot, circle graph, pictograph
- Recognize the misuses of graphs
- Compute the mean, median, mode, range, standard deviation, variance for a set of data
- Graph parabolas and exponential curves
- Solve applied problems involving exponential and parabolic models
- Determine if a set is a function
- Use the vertical line test to determine whether a graph represents a function and why
- Calculate values for a function and evaluate a function
- Graph a function and classify as linear, quadratic, exponential, logarithmic, probability function
- Find the difference quotient for a given function

## Writing Competency

The course will include assignments that must be written in clear, precise English.

## Support Facilities

Most JSCC math courses are supported with tutoring during the Fall and Spring semesters. See your instructor for specific tutoring opportunities available at JSCC. These facilities are not a substitute for attending class. Math tutors are not allowed to introduce new material to a student. If a class must be missed, the student must obtain class notes from a classmate and then meet with the instructor BEFORE seeking tutoring on the missed material.

### ADA

Jackson State will make reasonable accommodations for students with documented disabilities. Students should notify their instructor and Linda Nickell, Dean of Students, in the Counseling Office, Room 139 of the Student Union Building. The contact number is 425-2616 and the email is [lnickell@jsc.edu](mailto:lnickell@jsc.edu). Instructors should be notified the first week of class. All discussions remain confidential.