Instructor: Hema Nadkarni
Email: hema_nadkarni@yahoo.com  
hema.nadkarni@wvm.edu
Office hours: T 10:40 am – 11:10 am in SM 4F

Course Information – Requirements and Technical Details

Prerequisite:
Math 106 or Math 106R or qualifying score on placement test and proof of Algebra II

Textbook:
Precalculus: Mathematics for Calculus, 7th ed.
Authors: James Stewart, Lothar Redlin, Saleem Watson

Publisher: Cengage, 2016
ISBN-10: 1305071751

Materials:
You will need a graphing calculator TI 83+ or TI 84+. TI 83+ app on cell phones or iPads in place of calculators will not be allowed in class, especially during tests and exams.

Course Description:
This is a college level course in algebra for majors in science, technology, engineering, and mathematics. Topics include polynomial, rational, radical, exponential, absolute value, and logarithmic functions, systems of equations, theory of polynomial equations, and analytic geometry.

Student Learning Outcomes:
Form a mathematical model when given an application involving polynomial, rational, radical, exponential, or logarithmic function.

Evaluate a function, and determine the characteristics of a function, represented graphically, symbolically, or numerically.

Course Objectives:
Upon completion of the course, the student should be able to
Analyze and investigate properties of functions.

Synthesize results from the graphs and/or equations of functions.

Apply transformations to the graphs of functions.

Recognize the relationship between functions and their inverses graphically and algebraically.

Apply techniques for finding zeros of polynomials and roots of equations.

Solve and apply linear, polynomial, rational, radical, absolute value, exponential, and logarithmic equations and solve linear, nonlinear, and absolute value inequalities.
Solve systems of equations and inequalities.

Analyze conics algebraically and graphically.

Use formulas to find sums of finite and infinite series.

Apply functions and other algebraic techniques to model real world STEM applications.

Solve applications problems involving functions, polynomials, systems of linear equations, conic sections, sequences, and Series.

**Topics to Cover:** The following topics will be covered.

- **Equations:** including Equations that contain complex solutions.
  - a. Linear equations
  - b. Polynomial equations
  - c. Rational equations
  - d. Radical equations
  - e. Absolute value equations
  - f. Exponential equations
  - g. Logarithmic equations

- **Inequalities**
  - a. Linear inequalities
  - b. Absolute value inequalities
  - c. Quadratic inequalities
  - d. Polynomial inequalities
  - e. Rational inequalities

- **Functions:** Particular emphasis on linear, polynomial, rational, radical, exponential, absolute value, logarithmic, and piecewise functions
  - a. Definition of a function
  - b. Evaluating a function
  - c. Domain and range of a function
  - d. Average rate of change of a function
  - e. Function algebra (add, subtract, multiply, divide, composition)

- **Inverse functions**
  - a. One-to-one function
  - b. Find the inverse of a function graphically
  - c. Find the inverse of a function algebraically

- **Characterization of the zeros of polynomials**
  - a. Real zeros
  - b. Complex zeros
  - c. Fundamental Theorem of Algebra (brief introduction)

- **Logarithmic and Exponential Functions**
  - a. Exponential functions
  - b. Logarithmic functions
  - c. Properties of logarithms
  - d. Logarithmic and exponential equations
  - e. Exponential growth and decay

- **Graphs of functions:** Particular emphasis on quadratic, absolute value, radical, rational, logarithmic, exponential functions
  - a. Asymptotic behavior
  - b. Intercepts
  - c. Vertices
  - d. Transformations

- **Systems of equations and inequalities**
  - a. Systems of nonlinear equations
  - b. Systems of inequalities

- **Conic sections**
  - a. Conics
  - b. Parabolas
  - c. Ellipses
d. Hyperbolas

- Sequences and series
  - Sequences and series
  - Arithmetic sequences
  - Geometric sequences and series

### Evaluation – Details affecting your grade

**Assignments for evaluation:** Students will be evaluated using Exams, Quizzes, and Homework.

Quizzes: There will be short unannounced quizzes as well as hour long tests which will test your understandings of the concepts taught in class. They will be in the form of questions with short answers, written assignments and problems which will mostly be applications based on the topics as we learn them. The short 10 minute pop quizzes will be given at the beginning of the class. Students coming late will not be allowed to take them later.

Tests: There will be 4 long tests, each worth 50 points. The test schedule is given on the syllabus.

Final: A comprehensive final exam will be given at the end of the semester. It is mandatory to appear for the final exam, in order to pass (Even if you have full score on all tests and homework, you must take the final exam to pass)

Homework: Homework will be assigned every week based on all topics covered during the week in the class. Please complete the homework by due dates. No late work will be accepted for any reason.

**Extra Credit:** There will be no extra credit assignments in this class.

**Grading:**

The final grade will be based on

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework and Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Tests</td>
<td>60%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90% -100%</td>
</tr>
<tr>
<td>B</td>
<td>80% -89.9%</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79.9%</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69.9%</td>
</tr>
<tr>
<td>F</td>
<td>0% -59.9%</td>
</tr>
</tbody>
</table>

**Tentative Test Schedule:**

<table>
<thead>
<tr>
<th>Test</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td>09/13/18</td>
</tr>
<tr>
<td>Test 2</td>
<td>10/04/18</td>
</tr>
<tr>
<td>Test 3</td>
<td>10/25/18</td>
</tr>
<tr>
<td>Test 4</td>
<td>11/15/18</td>
</tr>
<tr>
<td>Final Exam</td>
<td>12/11/18</td>
</tr>
</tbody>
</table>

**Final Exam** 7:30 am – 9:30 am

### Other Important Information

**Attendance Policy:** Regular attendance and participation are vital to your success. Students are expected to attend all sessions of each class. I may drop students from the class if they fail to attend the first class meeting, or when accumulated unexcused hours of absences exceed ten percent of the total number of hours the class meets during the semester. Moreover, I may drop from the class any student who fails to attend at least one class session during the first three weeks of instruction.
Add/Drop Policy: It is the responsibility of the student to withdraw from a class prior to the published deadline in order to insure that a penalty grade will not be awarded for the course.

Last day to drop a class without “W” is 09/09/18
Last day to drop a class with “W” is 11/18/18

Cheating Policy: Any student who is caught cheating will receive a 0% for that exam or assignment. Cheating includes, but is not limited to: using unauthorized notes, books or formulas during an exam, sharing calculators, looking at another student’s exam or allowing another student to look at your exam or copying homework solutions. Leaving classroom during exam is strongly discouraged. However if you have to leave the classroom in the middle of an exam, the cell phone should remain on the desk in the classroom. A student who is caught cheating repeatedly will receive an F for the course.

Emergency Procedures: The College has developed an emergency procedures plan in case of earthquake or other emergency. This document includes how to respond to emergencies that might occur on campus and in the classroom. A condensed version in the form of a yellow colored flip chart is posted along with other emergency information on a bulletin board outside of the classroom. You are encouraged to have basic emergency supplies in your car and have a flashlight with you when you are on campus, especially at night.

Evacuation: In the event of an evacuation, the emergency assembly area for this classroom is in Parking Lot #2. Take all of your belongings with you. While we will try to evacuate together as a group, if you get separated, we will regroup at our assembly area in lot #2. Do not leave campus or the assembly area unless instructed to do so by me or another responsible official (police, fire, etc.)

Syllabus Disclaimer Statement: The instructor may make changes to the syllabus during the semester. It is the student’s responsibility to stay informed of these changes. Students may contact the instructor during office hours and before/after class, time permitting. Students may also wish to have a study partner whom they can contact if they miss a class.

Disability Statement: Accommodations for a Disability: West Valley College strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including permanent disabilities or chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. You may also register with the Disability and Educational Support Program (DESP) to establish reasonable accommodations. After registration, DESP will notify me of your approved accommodations. If a course policy does not appear to agree with an approved accommodation, please come speak with me about it.

DESP contact information: The DESP office is located in the LS building; their phone number is (408) 741-2010 (voice) or (408) 741-2658 (TTY). Information about their services can be found at www.westvalley.edu/desp/ (or if you are putting the syllabus online DESP)
ADA STATEMENT: The American with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation required that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact DESP (Disability and Educational Support Program) located in the Learning Services building. Phone: 408-741-2010

Smoking Policy: West Valley College is a Smoke Free Campus and we thank you for honoring the College and District Policy to this effect. This policy includes areas outside the doors of buildings, as well as all classrooms. For interested students, FREE and Confidential Smoking Cessation Support, including Nicotine replacement products, is available in Student Health Services, No Butts About It!

WVM Alert: We have a mass notification system which informs all users of emergencies via the mode you select (e.g., text, cell phone, email, work phone, home phone). Please sign up at: www.wvm.edu/wvm-alert