DATES	TOPIC	Textbook		
		Reading Selections and Videos to Study		
	Pre-Assessment Graphing Basics	Blitzer's Algebra and Trigonometry (5e) -Section 1.1: Pages 93-101; Section 1.2: Pages 10 – 110:; <a href="https://www.youtube.com/watch?v=BaQXFstxCMo">https://www.youtube.com/watch?v=BaQXFstxCMo</a> (Forms of Linear Equations) ;		

	Blitzer's Algebra and Trigonometry (5e) - Section 2.6, Pages 286 - 297 and 2.7, Pages		
	Combining	308 View the Khan Academy Videos and other related videos below:	
	Functions		
WEEK 4		• https://www.youtube.com/watch?v=n34dqyVCXs4	
	<b>Composition of</b>	https://www.youtube.com/watch?v=u9v_bakOIcU	
	Functions	• https://www.youtube.com/watch?v=tQ01R4j8MSQ	
		• https://www.youtube.com/watch?v=3ggdZjDXpis	
	Inverse Functions	<ul> <li>https://www.youtube.com/watch?v=n34dqyVCXs4</li> </ul>	
		• <a href="https://www.youtube.com/watch?v=nSmFzOpxhbY">https://www.youtube.com/watch?v=nSmFzOpxhbY</a>	
	TEST 2	<ul> <li>https://www.youtube.com/watch?v=q739Wcf0ZUg</li> </ul>	
		• <a href="https://www.youtube.com/watch?v=q739Wcf0ZUg">https://www.youtube.com/watch?v=q739Wcf0ZUg</a>	
		Blitzer's Algebra and Trigonometry (5e) - Section 1.3, Pages 132-136; Section 3.1, Pages,	
	Solving Word	330 – 342 <u>https://www.youtube.com/watch?v=NBdtKR3btvs</u>	
	Problems – Models		
WEEK 5	and Applications	• https://www.youtube.com/watch?v=lEkex7L-bc8	
WEEK 5		• https://www.youtube.com/watch?v=r2v90BDEfXY	
	Quadratic	• View the following Khan Academy videos – link has been provided below	
	Functions	https://www.youtube.com/watch?feature=player_detailpage&v=7QMoNY6FzvM	
	Tunctions	https://www.youtube.com/watch?feature=player_embedded&v=i7idZfS8t8w	
	MID-TERM	https://www.youtube.com/watch?feature=player_embedded&v=17vazisotow	
		intps://www.youtube.com/waten:reature=player_embeddedeev=11 va 1v+31ve	
WEEK 6		Blitzer's Algebra and Trigonometry (5e) - Section 1.4, Pages 137 – 141.	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Complex Numbers	Enter s <u>ringesta and ringerometry</u> (ee) section in, rages 15,	
	Compress 1 (was or 5	View the related videos below:	
		<ul> <li>https://www.youtube.com/watch?v=9Fm8aUyf1Yo</li> </ul>	
		• https://www.youtube.com/watch?v=-CmwjC_1mQA	
		• https://www.youtube.com/watch?v=KhdZvfH6fGg	
		https://www.youtube.com/watch?v=GH2fzLCCdKc	

		Blitzer's Algebra and Trigonometry (5e), Section 2.5, Pages 270-281.
WEEK 7		Ditalet 5 Ingesta and Higorometry (ee), because 20, 1 ages 270 201.
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Transformations of	• View the following Khan Academy videos – link has been provided below
	Functions	https://www.youtube.com/watch?feature=player_embedded&v=5oQgzup9nx4
		https://www.youtube.com/watch?feature=player_embedded&v=5oQgzup9nx4
	Polynomial	https://www.youtube.com/watch?feature=player_embedded&v=5oQgzup9nx4
	<b>Functions and</b>	
	Models	Blitzer's Algebra and Trigonometry (5e), Section 3.2 Pages 347-359
		• View the following Khan Academy videos – link has been provided below
	TEST 3	https://www.youtube.com/watch?feature=player_detailpage&v=tZKzaF28sOk
		https://www.youtube.com/watch?feature=player_embedded&v=4OPINzI4dWc
		Blitzer's Algebra and Trigonometry (5e), Section 3.4 Pages 376-386.
		• View the following Khan Academy videos – link has been provided below
WEEK 8	Zeros of	
	Polynomial	https://www.youtube.com/watch?feature=player_embedded&v=YMyv9-9VXw4
	Functions	https://www.youtube.com/watch?v=rPzFngio&feature=player_embedded
		https://www.youtube.com/watch?feature=player_embedded&v=Jx4amKfIoP4
		https://www.youtube.com/watch?feature=player_embedded&v=5YAmwfT3Esc
		Blitzer's Algebra and Trigonometry (5e), Section 3.5 Pages 391-405.
WEEK 9		
	<b>Rational Functions</b>	• View the following Khan Academy videos – link has been provided below
	and Models	https://www.youtube.com/watch?v=_qEOZNPce60&feature=player_embedded
		https://www.youtube.com/watch?feature=player_embedded&v=0cPptjKTR7M
		Blitzer's Algebra and Trigonometry (5e), Section 1.2, Pages 111-117.
		• View the following Khan Academy videos – link has been provided below
WEEK 10	<b>Rational Equations</b>	https://www.youtube.com/watch?feature=player_embedded&v=5wUJLMWZ5Fw
		https://www.youtube.com/watch?feature=player_embedded&v=6eqgIZyXgK8
	TEST 4	https://www.youtube.com/watch?feature=player_embedded&v=ZWTZm6Aveqg

		Blitzer's Algebra and Trigonometry (5e) Section 3.7, Pages 423-430.
WEEK 11	Variations Problem Solving Using Variations	• View the following Khan Academy videos – link has been provided below <a href="https://www.youtube.com/watch?feature=player_embedded&amp;v=is07Wg_0DiY">https://www.youtube.com/watch?feature=player_embedded&amp;v=is07Wg_0DiY</a> <a href="https://www.youtube.com/watch?feature=player_embedded&amp;v=92U67CUy9Gc">https://www.youtube.com/watch?feature=player_embedded&amp;v=92U67CUy9Gc</a> <a href="https://www.youtube.com/watch?teature=player_embedded&amp;v=92U67CUy9Gc">https://www.youtube.com/watch?feature=player_embedded&amp;v=92U67CUy9Gc</a> <a href="https://www.youtube.com/watch?teature=player_embedded&amp;v=92U67CUy9Gc">https://www.youtube.com/watch?teature=player_embedded&amp;v=92U67CUy9Gc</a> <a href="https://www.youtube.com/watch?teature=player_embedded&amp;v=92U67CUy9Gc">https://www.youtube.com/watch?teature=player_embedded&amp;v=92U67CUy9Gc</a> <a href="https://www.youtube.com/watch?teature=player_embedded&amp;v=92U67CUy9Gc">https://www.youtube.com/watch?teature=player_embedded&amp;v=92U67CUy9Gc</a> <a href="https://www.youtube.com/watch?v=9Giu9tk6H6I">https://www.youtube.com/watch?v=9Giu9tk6H6I</a> <a href="https://www.youtube.com/watch?v=WGqmAmzUODM">https://www.youtube.com/watch?v=WGqmAmzUODM</a> <a href="https://www.youtube.com/watch?v=awp2vxqd-14">https://www.youtube.com/watch?v=awp2vxqd-14</a>
WEEK 12	Polynomial and Rational Inequalities	Blitzer's Algebra and Trigonometry (5e); Section 3.6: Pages 410-415 and 418-420. View Khan video: <a href="https://www.khanacademy.org/math/algebra2/advanced-equations-and-inequalities/quadratic-inequalities/v/quadratic-inequalities-visual-explanation">https://www.khanacademy.org/math/algebra2/advanced-equations-and-inequalities/quadratic-inequalities/v/quadratic-inequalities-visual-explanation</a>
WEEK 13	Solving Other Types of Equations	Blitzer's Algebra and Trigonometry (5e); Section 1.6, Pages 167-178.  • Watch Khan Videos <a href="https://www.khanacademy.org/math/algebra2/radical-equations-and-functions/solving-square-root-equations/v/extraneous-solutions-to-radical-equations">https://www.khanacademy.org/math/algebra2/radical-equations</a> <a href="https://www.khanacademy.org/math/algebra2/polynomial-functions/factoring-polynomials-quadratic-forms-alg2/v/factor-by-grouping-and-factoring-completely">https://www.youtube.com/watch?v=Mzh_o2KYasA</a>

		Blitzer's Algebra and Trigonometry (5e); Section 4.1, Pages 442-451
WEEK 14	Exponential and Logarithmic Functions	https://www.khanacademy.org/math/algebra/introduction-to-exponential-functions/exponential-growth-and-decay/v/exponential-growth-functions https://www.khanacademy.org/math/algebra2/exponential-and-logarithmic-functions/graphs-of-logarithmic-functions/v/comparing-exponential-logarithmic-functions
WEEK 15	Blitzer's Algebra and Trigonometry (5e); Section 4.3, Pages 469-476  • Watch Khan Videos	
	Solving Exponential and Logarithmic Equations	https://www.khanacademy.org/math/algebra2/exponential-and-logarithmic-functions/properties-of-logarithms/v/introduction-to-logarithm-properties-part-2  Read Section 4.4, , Pages 479-489  Watch Khan Videos
	FINAL EXAM	https://www.khanacademy.org/math/algebra2/exponential-and-logarithmic-functions/solving-exponential-equations-with-logarithms/v/exponential-equation https://www.khanacademy.org/math/algebra2/exponential-and-logarithmic-functions/solving-exponential-equations-with-logarithms/v/solve-exponentials

# Fort Valley State University College of Arts & Science Department of Mathematics & Computer [XXXXX] SEMESTER MATH 1113 SECTION [XXXX] PRECALCULUS

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Instructor [XXXXXXXXX], Title [XXXXXXX]

Office: [XXXXXX] Building Phone: (478) 825-[XXXX]FAX: (478) 825-[XXXX]

#### I. General Information

**A.** Course: MATH 1113. **[XXXX]** - - Pre-calculus (4 Semester Hrs.)

B. Location: [XXXX]

## **II. Course Description and Resources:**

**A. Description:** Students acquire algebraic and trigonometric competencies essential to the study of calculus. A general review of algebraic, trigonometric, exponential and logarithmic functions is completed prior to the study of trigonometry, systems of linear equations, matrices and determinants and sequences.. To enhance learning, critical thinking reasoning processes are used throughout the course.

**B. eTextbook: Blitzer, Robert, Algebra & Trigonometry** 5e, 2014, Pearson, Boston, MA . ISBN: 978-0-321-83724-0.

**C.** Access to MATHXL: This software management system is required from the first day of class. With this system, students will have access to the etextbook.

The MATHXL online, course management system does not only provide constructive, guided assistance on how to complete homework assignments, but it also provides immediate feedback in the form of grades and hints for mastering the assignments at hand. Students are also able to send messages to the instructor from within MATHXL to seek advice on how to complete problems.

In using an etextbook, students are required to bring computers to class to have access to the textbook materials during the class period for the following reasons.

- Classes will be conducted using interactive discussions and assignments from the textbook.
- Homework assignments will be made using the textbook.
- Test materials will be based on the information in the textbook.
  - **D. Graphing Calculator:** A scientific calculator such as a TI-83 or TI-84 graphing calculator is needed in this course.

## III. Learning Outcomes and Objectives

This course addresses the following Fort Valley State University (University System of Georgia) General Education Outcomes (GEO) and Departmental Learning Outcomes (DLO).

#### A. General Education Outcomes:

- i) <u>Critical Thinking Overlay:</u> "Students will use critical reasoning in demonstrating their abilities to interpret, analyze, evaluate, make inferences, or explain information, arguments, or observations."
- ii) A2 Quantitative Reasoning: "The student identifies the problem, develops and solves the mathematical model appropriate to a given problem situation and interprets the solution with accuracy."

## **B.** Course Learning Outcomes:

- 1. Students will solve problems involving linear and nonlinear equations and inequalities and their applications. They will write an equation of a line given characteristics of the line.
- **2.** Students will identify and graph function using domain and range, intercepts and zeros, symmetry, shifting, reflection and stretching as well as graphing polynomials using zeros asymptotes, upper and lower bound theorem.
- **3.** Students will evaluate and analyze trigonometric functions and identities and sketch the graphs of trigonometric functions as well as inverse functions. They will solve trigonometric equations and apply sum, difference, double angels, half angles, identities as well as soling application problems involving laws of sine and cosine.
- **4.** Students will solve application problems involving logarithms, graph hyperbolas, parabolas, and ellipses and convert between rectangular and polar coordinates.

#### **C.** Course Objectives: By the end of this course, students will be able to

- 1. Solve quadratic equations using the quadratic formula.
- 2. Use the discriminant to determine the number and type of solutions.
- 3. Solve problems modeled by using the quadratic equations.
- 4. Find and identify vertical and horizontal asymptotes.
- 5. Graph exponential functions.
- 6. Write a logarithmic expression/function as an exponential function and vice versa.
- 7. Solve periodic compounding and continuous compounding problems.
- 8. Graph logarithmic functions and identify the domain and range of each.
- 9. Expand or condense logarithmic expressions using the properties of logarithms.
- 10. Use diverse methods to solve logarithmic and exponential equations.
- 11. Recognize and construct different types of angles 19 standard position.
- 12. Convert angles from radians to degrees units- vice versa.
- 13. Solve problems involving arc lengths, area of sectors and angular and linear speeds.
- 14. Define trigonometric functions using right triangle trigonometry.
- 15. Graph the sine and cosine functions and their transformations using their amplitudes, periods and phase shifts. Determine their domains and ranges.
- 16. Use a unit circle to define trigonometric functions of real numbers.
- 17. Determine which trigonometric functions are even or odd.
- 18. Solve trigonometric equations.
- 19. Use the Law of Sines and cosines to solve oblique triangles and applied problems.
- 20. Use the Law of Sines, if possible, to solve triangles in the ambiguous case.

- 21. Use Heron's formula to find the area of a triangle
- 19. Solve systems of Linear Equations and sketch their graphs.
- 20. Perform matrix operations and find the determinants.
- 21. Generate the terms of an arithmetic sequence and form the sum.

#### **IV.** Required Assignments

**Homework** – There will be **MathXL homework** assignments corresponding to each section in the textbook. These assignments **must be completed and submitted online on or by the due date**. Grades will be automatically recorded within the MathXL System.

**Quizzes, Modular Exercises and/or Projects** – may be given in class or online. Pop quizzes will not be announced. Other quizzes will be announced.

**Tests and Final Exam** – Approximately five tests (including the midterm exam) and a comprehensive final exam will be given during the semester.

#### V. Course Schedule (May be subject to change due to unforeseen events)

Week	LESSON	TOPIC	Sections covered
1	1-2	Quadratic and Rational Equations and Modeling	3.1, 3.5
2	3 – 4	Exponential and Logarithmic Functions and Models	4.1 – 4.2
3	5 – 6	Properties of Logarithms and Exponents	4.3 - 4.4
		TEST 1	
4	7 - 8	Angles and their Measures; Right Triangle Trigonometry	5.1 - 5.2
5	9 – 10	Graphing Sine and Cosine Functions; Circular Trig Functions	5.4 - 5.5
		MID-TERM EXAM	
6	11	Graphing all Trig Functions and Determining their Properties	5.5 – 5.6
7 - 8	12 – 13	Inverse Trig Functions; Verifying Trigonometric Identities	5.7; 6.1 – 6.2
		TEST 3	
<b>9</b> - 10	14 – 15	Solving Multiple-angle Identity Problems; Solve Trig Equations	6.3; 6.5
11	16	Laws of Sine and Cosine	7.1 - 7.2
		TEST 4	
12	17 - 18	Systems of Linear Equations; Matrix Operations and Determinants	8.1; 9.3, 9.5
13	19	Arithmetic Sequences, Summation and Factorials	11.1-11.2
		TEST 5	
14	20	Geometric Sequences and Series	11.2 – 11.3
15		Post-Assessment, General Education Outcomes Assessment, Final Review, Final Exam	

## VI. Grading Standards and Criteria

A. Your Final Average will be Determined Using the Following Weights:

	Test or Assessment	Weight
1	Common Comprehensive Final Exam	20%
2	Test Average (includes the Midterm Exam)	60%
3	MATHXL Homework and other Work (Quizzes, Project,	20%
	etc., as assigned)	
4	Excessive Absences (deducted from Average)	- x Days
	Total	100%*

**B. Grading Scale.** Grades will be assigned using the final average as follows

A: 90 – 100; B: 80-89; C: 70-79; D: 60-69; F: below 60.

Note: Grades will be posted in Bannerweb at midterm and at the end of the course according to the following rubric:

#### C. Calculation of Mid-Term and Final Averages

Your Midterm Average (MAV) will be calculated based on 80% of your Test Average, 10% of the <u>average</u> of your in-class and MXL Homework and 10% of your pop quiz and MXL Quiz Averages.

Your **Final Average** (**FAV**) will be calculated using the scale above with one low test grade and low homework or quiz grade being dropped. The mid-term nor final test grade will be dropped.

#### VII Class Policies

- **A.** Attendance Policy Students are allowed four unexcused absences. For each absence over four that is not officially excused, one point will be deducted from the final course average before the corresponding letter grade is assigned. Every three tardies to class will be converted to one absence.
- B. **Dress Code Policy** Students' clothing are to be classroom appropriate. Pants are to be worn without underwear being seen. **NO CAPS, HOODS, HATS, SCARVES OR HEAD COVERINGS** are permitted in class. "*Daisy Dukes*" shorts are also not appropriate. Any student who violates this policy will be asked to leave the classroom to return with the appropriate dress.
- C. **Testing and Assessment Policy** Students are required to take examinations, quizzes or assessments on the dates that they are announced and administered. Only students presenting official excuses will be allowed to take an exam or test that has been missed.
  - Under no circumstance will a pop quiz be re-administered.
  - All students must take assessments that are required by the department
  - Tests on MATHXL must be taken by the published date and will not be reopened.

## C. FVSU's Academic Dishonesty Policy:

Any student who is found in violation of the institution's Academic Dishonesty Policy is subject to expulsion or suspension from the university. A lesser sanction may be imposed for the commission of offenses involving cheating or defraud on examinations. Examples of such offenses include giving assistance not authorized by the instructor in the preparation of an essay, laboratory report, examination or other class assignments. Having someone take an online examination for you or do your online homework is a violation of this policy and will result in an automatic failure of the course.

Any student who takes or attempts to take, steal, or otherwise procure in an unauthorized manner the instructor's tests, any material pertaining to the conduct of a class, including but not limited to examinations, laboratory experiments, and roll books will be subject to expulsion from the university.

## D. FVSU's Policy on Plagiarism:

The appropriation of someone else's ideas, passages arguments, interpretation of events or factual information, in either hard copy or electronically, demonstrates a lack of integrity and constitutes plagiarism. It is not acceptable at Fort Valley State University.

Other examples of plagiarism include submitting someone else's work/assignment as one's own, submitting purchased papers as one's own, and submitting papers from the Internet as one's own. Students who are guilty of plagiarism are subject to disciplinary action – suspension or expulsion. Acts of plagiarism must be reported to the Department Head, Dean, Provost/Vice President for Academic Affairs, and the Vice President for Student Affairs for appropriate action

#### **Classroom Code and Behavior Conduct**

Violations of the following codes will result in the students' dismissal from class.

- Head Coverings: No hat, scarf, hood, Doo Rag or head covering is to be worn in the classroom by female or male students.
- Underwear policy: Underwear should not be exposed at any time. Pajamas, pants, shorts and/or skirts above the mid-thigh point are inappropriate for the classroom.
- Cell Phones: The use of cell phones and headsets is prohibited in the classroom.
- Disruptive Movements: Students are to remain seated in class for the duration of the period. In/Out Movements to the restroom, to accept calls, to look for or sharpen pencils are not permitted once the class begins.

- Homework and Tests/Assessments: All homework assignments must be completed and submitted in a timely manner. Tests and departmental assessments will be announced in advance and administered in class according to a prescribed schedule. Only at the discretion of the professor and in exceptional cases (when official excuses are presented) will make-up opportunities be provided.
- Late Assignments and/or Make-Up Assignments Assignments are scheduled well in advance. For this reason, no homework or laboratory assignment will be accepted after the due date. Students will not be given the opportunity to make-up an assignment or homework unless there is an unusual circumstance for which official documentation is provided from the Office of Student Affairs.
- Learning Tools: Students are required to purchase a textbook and bring it to class. Paper, a pencil/pen, graph paper, and a composition notebook are required. Students are expected to maintain an accurate record of their tests, graded homework, and assignments that are returned to them throughout the semester.
- Technology Usage: Students are expected to have e-mail addresses and be able to login to the MyMathLab web site (or other referenced internet sites) to complete their homework assignments, quizzes, test reviews and tutorials. Students are also required to bring a graphing calculator to class.
- Academic Integrity: All students in the University System of Georgia are expected to maintain high standards of academic integrity. It is dishonest to take the work of others and submit it as your own. Serious penalties for academic dishonesty are described in the <a href="FVSU Student Handbook">FVSU Student Handbook</a>. Plagiarism prevention technology will be used, as needed, to verify that submitted papers do not violate expectations for academic integrity.
- Plagiarism: "Plagiarism is the practice of taking and using, without acknowledgement, as
  one's own, the thoughts, data, or writings of another." Please read also (
  <a href="http://www.keithmurphy.info/plagiarism.htm">http://www.keithmurphy.info/plagiarism.htm</a>) for additional information on FVSU's
  current policies and practices regarding plagiarism.
- Penalty for Academic Dishonesty Expulsion or suspension from the University or any lesser sanction may be imposed for the commission of offenses involving cheating or defrauding activities on examinations. Examples of such offenses include giving assistance not authorized by the instructor in the preparation of an essay, laboratory report, examination or other assignments; taking or attempting to take, steal, or otherwise procure in an unauthorized manner, any material pertaining to the conduct of a class, including but not limited to examinations, laboratory experiments, and roll books; and plagiarizing.
- Involuntary Withdrawal: A student who has excessive absences may be involuntarily withdrawn from the class by the professor.

# VIII. Recommended Reading

A. To enhance your study skills, consult: <<u>www.etipsforagrades.com</u>>
The content on this site is unique, and is based on the first series of guides written by students for students. We encourage you to visit this site and download the "Students Helping Students" complimentary e-Book.

- B. Polya, Georg, Problem Solving
- **IX. Disclaimer:** The information and procedures expressed in this syllabus are subject to change in the event of extenuating circumstances.