



## College of Humanities and Sciences

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DLSHSI URL: [www.dlshsi.edu.ph](http://www.dlshsi.edu.ph)  
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Local: 5007 (Dean's Secretary) | 1412 (Dean)  
1345 (Dept. of Integrated Humanities and Sciences)  
1408 (Dept. of Chemistry)  
1115 (Chemistry Lab) | 1405 (Biology & Physics Lab)

### COURSE SYLLABUS

<b>DEPARTMENT</b>	:	<b>Integrated Humanities and Sciences</b>
<b>COURSE CODE AND COURSE TITLE</b>	:	<b>GE- MATH 101 / College Algebra</b>
<b>NUMBER OF UNITS</b>	:	<b>3.0</b>
<b>PRE-REQUISITE</b>	:	<b>none</b>
<b>CLASS DAYS AND CLASS TIME</b>	:	_____
<b>ROOM:</b>	:	_____
<b>INSTRUCTOR/PROFESSOR</b>	:	_____
<b>CONSULTATION HOURS</b>	:	_____

#### COURSE DESCRIPTION:

This is a basic course in Algebra which deals with the real number system, algebraic expressions and operation, radicals and rational exponents, equations and inequalities, system of linear equations in two or more variables, quadratics, functions, and relations.

#### LEARNING OUTCOMES:

- LO 1: Understanding of basic concepts across the domains of knowledge
- LO 2: Critical, analytical, and creative thinking
- LO 3: Understanding and respect for human rights
- LO 4: Ability to contribute personally and meaningfully to the country's development
- LO 5: Working effectively in a group
- LO 6: Problem solving (including real-world problems)

**LEARNING PLAN:**

<b>TOPICS</b>	<b>INTENDED LEARNING OBJECTIVES</b>	<b>TEACHING AND LEARNING STRATEGIES</b>	<b>METHOD OF ASSESSMENT</b>
Class Orientation	Display knowledge of what are expected of them, the grading system, and the house rules.	Discussion of the Expectations of both Professor and Students.  Forum	
<b>1. SETS AND NUMBER SYSTEM</b> 1.1. Set and Set Operation  1.2. The Set and Set Operations on Sets  1.3. Properties of Real Numbers and Its Subsets	Define, differentiate, describe, and give examples of sets and kinds of sets.  Perform the operations on sets.  Determine and classify real numbers.  Apply the properties of real numbers and sets.	Lecture  Interactive discussion  Use of multimedia devices in the discussion	Recitation  Board work  Quiz  Problem set
<b>2. POLYNOMIALS</b> 2.1 Simplifying Polynomials  2.2 Powers with Zero, Positive, and Negative Integer Exponents  2.3 Product of Polynomials 2.4 Division of Polynomials 2.5 Synthetic Division	Define the basic terms of polynomials.  Enumerate the laws of exponents.  Simplify polynomials with the laws of exponents.  Perform the four operations of polynomials.	Lecture  Interactive discussion  Use of multimedia devices in the discussion	Seatwork  Quiz  Problem set
<b>3. SPECIAL PRODUCTS AND FACTORING</b> 3.1 Special Products	Enumerate the different types of special product formulas.	Lecture  Interactive discussion	Seatwork  Quiz

3.2 Factoring	<p>Perform multiplication of polynomials using special product formulas.</p> <p>Enumerate the different types of factoring.</p> <p>Differentiate one type of factoring from another type.</p>	Small group discussions	Problem set
4. RATIONAL EXPRESSIONS			
4.1 Fundamental Principle of Rational Expressions	Define and illustrate the two types of fractions.	Lecture	Seatwork
4.2 Simplifying Rational Expressions	Discuss the three methods of finding the LCM.	Interactive discussion Small group discussions	Board Work
<b>FIRST COMPREHENSIVE ASSESSMENT</b>			

TOPICS	INTENDED LEARNING OBJECTIVES	TEACHING AND LEARNING STRATEGIES	METHOD OF ASSESSMENT
4.2 Multiplication and Division of Rational Expressions	Perform addition and subtraction of rational expressions.	Lecture	Seatwork
4.3 Addition and Subtraction of Rational Expressions		Interactive discussion	Quiz
4.4 Complex Numbers	Perform multiplication and division on sets of rational expressions.	Small group discussion	Problem set
5. RATIONAL EXPONENTS AND RADICALS			
5.1 Rational Exponents and Radical	Define and illustrate powers with zero and negative exponents.	Lecture	Board Work
5.2 Complex Numbers	Simplify expressions of powers.	Interactive discussion	Seatwork
	Define radicals and illustrate its properties.		
	Relate powers with rational exponents to radical		

	form.		
6. LINEAR EQUATIONS 6.1 Linear Equations 6.2 Literal Equations	Gain familiarity to the different types of equations and ways to solve it.  Translate mathematical statements into algebraic equations.  Analyze and solve a variety of word problems.	Lecture  Interactive discussion  Use of multimedia devices	Board Work  Recitation  Quiz
7. QUADRATIC EQUATIONS 7.1 Solving Quadratic Equations 7.2 Characteristics of the Roots of a Quadratic Equations	Solve quadratic equation using different methods.  Determine the nature of the roots of a quadratic equation.	Lecture Interactive discussion Small group discussions	Seatwork Quiz Problem set
8. APPLICATION ( Linear and Quadratic Equations)	Solve word problems involving quadratic equations.	Lecture Interactive discussion Small group discussions	Seatwork Problem set
<b>SECOND COMPREHENSIVE ASSESSMENT</b>			

TOPICS	INTENDED LEARNING OBJECTIVES	TEACHING AND LEARNING STRATEGIES	METHOD OF ASSESSMENT
9. INEQUALITIES 9.1 Absolute and Conditional Inequalities 9.2 Solving Inequalities	Differentiate equations from inequalities.  Distinguish absolute from conditional inequality.  Solve inequalities and express the result in solution set and interval notation.	Lecture  Interactive discussion  Use of multimedia devices  Small group discussion	Seatwork  Quiz  Problem set

<p>10. SYSTEMS INVOLVING LINEAR EQUATIONS AND WORD PROBLEMS</p> <p>10.1 Linear Equation</p> <p>10.2 Solving Systems of Linear Equations in Two Variables</p> <p>10.3 Applications to Word Problems</p>	<p>State and illustrate the three methods of solving linear equations.</p> <p>Translate mathematical statements into algebraic equations.</p> <p>Analyze and solve a variety of word problems.</p>	<p>Lecture</p> <p>Interactive discussion</p> <p>Use of multimedia devices</p> <p>Small group discussion</p>	<p>Seatwork</p> <p>Quiz</p> <p>Problem set</p>
<p>11. GRAPHS AND LINES</p> <p>11.1 The Cartesian Coordinate System</p> <p>11.2 Equations of a Line</p>	<p>Plot points on the rectangular coordinate system.</p> <p>Solve distances and midpoints between two points.</p> <p>Determine the equation of any given line.</p> <p>Solve problems related to lines.</p>	<p>Lecture</p> <p>Interactive discussion</p> <p>Use of multimedia devices</p> <p>Small group discussion</p>	<p>Seatwork</p> <p>Quiz</p> <p>Problem set</p>
<p><b>THIRD COMPREHENSIVE ASSESSMENT</b></p>			

**FINAL COURSE OUTPUT:**

As evidence of attaining the above learning outcomes, the students are required to do and submit the output as indicated.

LEARNING OUTCOME	REQUIRED OUTPUT	DUE DATE
<p><b>LO1 – LO6</b></p>	<p>Research Paper</p> <p>At the end of the course, the student should be able to work on a research paper in 1) life of a mathematician and 2) one of the applications of algebra. This paper will discuss the lessons learned in the life of the mathematician as he struggled to develop the mathematical concept/theorem and how the student can relate to</p>	<p>October 9, 2015</p>

	the former's life. The second part of the paper will discuss the application of a particular topic in algebra and how this is related to contemporary issue/concern in CALABARZON or the nation as a whole. This research shall be presented in the class.	
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**RUBRIC FOR ASSESSMENT:**

<b>Criteria</b>	<b>Outstanding 4</b>	<b>Very Satisfactory 3</b>	<b>Satisfactory 2</b>	<b>Needs Improvement 1</b>	<b>Score</b>
<b>God Loving</b> Attribute the mathematician's success to God's handwork.	Able to identify at least two (2) instance/s in the mathematician's life where God helped/guided the former.	Able to identify only one instance in the mathematician's life where he encountered problem but was able to overcome it.	Able to identify problem in the mathematician's life but failed to attribute it to God's power.	Very negative view and indifferent	
<b>God Loving</b> Acknowledgement of God's sovereignty over all things	Convinced that God can grant him success either in solving any problem, be it in mathematical or in real life.	Acknowledged God's role in the success of the mathematician but unable to claim God's help in his own struggle in mathematics.	With reservation in solving math problems. Little hope that he can conquer problems as how the mathematician did.	Accepting that the mathematician's success is a special case; and that he cannot duplicate the former's success in life.	
<b>Person Oriented</b> Organization and coherence of presentation	Discussion is very organized and coherent.	Discussion is not very organized nor coherent.	Discussion is disorganized and not coherent.	Discussion is very disorganized and not coherent. Model produced is inaccurate and not applicable	
<b>Person Oriented</b> Promptness in submission	The complete report is submitted on time.	The complete report is submitted late but within the day.	The complete report is submitted one day after the deadline.	The complete report is submitted 2 or more days late.	

<b>Patriotic Health Professionals</b> Innovative approach linking math to prevalent community health concerns.	Able to strongly link a particular application of algebra or trigonometry to a present health issue in the region.	Chosen application is related to a health issue in the region.	Chosen application was linked to a health issue in the region but relationship was not well established.	Chosen application is not at all related to any health issue in the region.	
<b>Patriotic Health Professionals</b> Utility of the project in Calabarzon.	High level of applicability to actual existing problems	Moderate degree of applicability to actual existing problems.	Low applicability to actual existing problem.	Not helpful at all to any problem in the region.	

**OTHER REQUIREMENTS AND FORMS OF ASSESSMENTS:**

Aside from the final output, the students are assessed at other times during the term by the following:

1. Quizzes/Long Test
2. Seatwork
3. Problem Set
4. Oral Participation
5. Major Exam
6. One Research Day / Alternative Class per Term

**LEVELS OF ASSESSMENT:**

FORM OF ASSESSMENT	PERCENTAGE WEIGHT
• Major Exam	50%
• Long and Short Quizzes • Seat Works	30%
• Problem Sets • Oral Participation	20%
OVERALL POINTS	100%

## COMPUTATION OF GRADES:

*Each form of assessment will be computed as follows:*

$$\text{ASSESSMENT SCORE} = \frac{\text{RAW SCORE}}{\text{TOTAL SCORE}} \times 50 + 50$$

*At the end of the course, the final course grade will be computed as follows:*

$$\text{FINAL COURSE GRADE} = \left( \frac{\text{PRELIM GRADE} + \text{MIDTERM GRADE} + \text{FINAL GRADE}}{3} \times 0.9 \right) + (\text{FINAL COURSE OUTPUT SCORE} \times 0.1) = 100$$

## TEXTBOOK (MODULE):

Ilano, J. and Salansang M. (2014). *College Algebra for De La Salle Health Sciences students only.*

## REFERENCES:

- Silveo R., et al., (2003). *College Algebra worktext*. 2<sup>nd</sup> Edition. Manila: National Bookstore.
- Larson, R. (2000). *Algebra and Trigonometry*. 5<sup>th</sup> Edition. Boston: H. Mifflin.
- Leithold, L (2001). *College Algebra and Trigonometry*. International Edition. Singapore: Pearson Education Asia.
- Lial, M. et al (2004). *Beginning Algebra*. 9<sup>th</sup> Edition. Singapore : Pearson Education South Asia.
- Swokowski, E. (2002). *Algebra and Trigonometry with Analytic Geometry*. Pacific Grove, Calif: Brooks/Cole.
- Stewart, J., Redlin, L. and Watson, S. (2007). *Algebra and Trigonometry*. 2nd Edition. Singapore: Thomson Learning.
- Stewart, J., Redlin, L. and Campus (2000). *College Algebra*. 4th Edition. Singapore: Thomson Learning.

## COURSE POLICIES:


1. Students are allowed 20% of the total number of school days of absences inclusive of tardiness. All absences after that shall mean excessive absences, which will merit a grade of 0.00.
2. Students who arrive beyond the allowable time for tardiness maybe allowed to enter the class but are marked absent. Attendance Policies found in the Student Handbook apply.
3. Three (3) accounts of tardiness are computed as one (1) session absence for the subject.
4. The students will be given a score of zero (0) with corresponding grade of zero percent (0%) in a requirement which is not submitted on the prescribed time and date and in a quiz which is given during their absence.



5. Only excused students are given the chance to make-up for missed requirements. Failure to appear on the scheduled make-up quiz/seatwork will be given a score of zero (0) with corresponding grade of zero percent (0%).
6. Absentees who filed for an excused absence should present the excuse slip to their professor/instructor within 48 hours upon return to the College.
7. Special major exams are scheduled one week after the administration of the major exams. No special exams will be given thereafter EXCEPT IN SPECIAL SITUATIONS.
8. Home works will be due at the beginning of the class. No home will be accepted thereafter.
9. Students must be honest at all times; cheating and plagiarism in any form will merit a grade of 0.00.
10. Cellular/Mobile phones should always be in silent mode during class hours; the use of cellular phones is prohibited in class unless a special permission is sought. Cellular phones cannot also be used as calculator during examination.
11. The use of video cameras, cameras, cellular phones, MP3 player, Ipod, tablets, and other similar devices are prohibited inside the classroom unless the photo or video shall be used for documentation purposes.
12. Borrowing of calculators, pencils, pen/s, erasers, or other materials is prohibited during the administration of the assessment.
13. Any complaints (teaching, grades, etc.) against the teacher or against classmates (relative to the class) should be properly addressed to the subject-teacher for appropriate action. Students may seek the help and guidance of their academic/registration adviser in resolving the issue with the subject–teacher.

*All policies (attendance, tardiness, decorum, grievances, etc.) will be subject to the provisions of the latest revision of the Student Handbook.*

**ENDORSED:**

  
**MAY VELUZ G. SALANSANG, MSME**  
*Cluster Coordinator, Mathematics and Computer*

**RECOMMENDING APPROVAL:**

  
**ILUMINADA A. RONIO, MSc**  
*Department Chair*

**APPROVED:**

  
**MARGEL C. BONIFACIO, RCH, PhD**  
*Dean*