

## Course Syllabus

**Course Number - Name:** MTH103NT – Contemporary Math

**Course Credits:** 3

**Duration:** 8 weeks

### Course Description:

An introductory mathematics course designed to bring the usefulness, variety, and beauty of mathematics to the non-specialist. The goal is twofold: 1) to help students apply mathematics in problem-solving, and decision-making for life, and 2) to help students gain an understanding of the value of mathematics in knowing and worshiping God.

### Course Learning Outcomes (CLOs):

#	CLOs	Bloom's*
1	Explain the advantages of the base-10 system used by our society.	2
2	Apply problem-solving strategies in a variety of situations.	3
3	Apply methods of Euclidean geometry in a variety of settings (one to three-dimensional space).	3
4	Demonstrate literacy in basic number theory and apply appropriate methods in solving problems involving subsets of the set of real numbers.	4
5	Solve real-world problems using algebraic equations and inequalities.	4
6	Analyze historical/cultural presentations of mathematics, especially systems of numeration and mathematical systems, and compare advantages/disadvantages with the Hindu-Arabic system of numeration.	5
7	Articulate a basic understanding of a variety of philosophical approaches to mathematics and develop an elementary philosophy of mathematics situated in a Christian worldview.	6

\*Indicates Bloom's Taxonomy cognitive domain level.

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### **Biblical Worldview Integration Plan:**

In this course, you will gain an understanding of the usefulness, variety, and beauty of mathematics to the glory of God. A Christian worldview is the lifeblood of this course as the motivation and atmosphere for learning, leading to a greater understanding of God's work in creation, a greater understanding of his character, and the enrichment of personal worship of God. Throughout this course, you will be guided through videos of mathematics set in a Christian worldview, encouraged to reflect on God's revelation of himself through mathematics in discussion forums, and develop your own Christian philosophy of mathematics through a variety of discussions, readings, and a reflection paper.

### **Required to Purchase Media:**

Poythress, V. S. (2015). *Redeeming Mathematics: A god-centered approach..* Crossway.  
ISBN-13: 978-1-433541100

Pearson MyLab Subscription (Includes eBook of main textbook, online homework, and study resources)

### **Grading Grid:**

<b>Assessments (# in parentheses) - # pts. each if &gt; 1</b>	<b>Total Points</b>
Weekly Discussions (8) - 25 pts. each	<b>200</b>
Unit Homework Assignments (6) - 43 pts. each	<b>258</b>
Unit Exams (6) – 70 pts. each	<b>420</b>
Christian Philosophy of Mathematics Rough Draft (1)	<b>22</b>
Christian Philosophy of Mathematics Paper (1)	<b>100</b>
<b>Total Points:</b>	<b>1,000</b>

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### **Course Schedule:**

#### **Week 1**

Media:

1. Lecture Notes Handout File
2. Section 1.3 Video
3. Section 1.1 Video
4. Section 2.1 Video
5. Section 2.2 Video
6. Section 2.3 Part I Video
7. Section 2.3 Part II Video
8. Sections 2.4 and 2.5 Part I Video
9. Sections 2.4 and 2.5 Part II Video

Assignments:

1. Assignment 1-1 Unit 1: Problem Solving, Reasoning, and Set Theory - See Instructions in the course
2. Assignment 1-2 Unit 1 Exam
3. Wk1 Discussion - See Instructions in the course

#### **Week 2**

Media:

1. Poythress, Part I—Basic Questions
2. Section 4.1 Part I Video
3. Section 4.1 Part II Video
4. Section 4.3 Part I Video
5. Section 4.3 Part II Video
6. Section 4.5 Video
7. Section 9.1 Video
8. Section 9.3 Part I Video
9. Section 9.3 Part II

Assignments:

1. Assignment 2-1 Unit 2: Cultural and Historical Mathematics - See Instructions in the course
2. Assignment 2-2 Unit 2 Exam
3. Wk2 Discussion - See Instructions in the course

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### **Week 3**

Media:

1. Poythress, Part II—Our Knowledge of Mathematics
2. Section 5.1 Video
3. Section 5.3 Video
4. Sections 5.4 and 5.5 Video
5. Section 5.7 Video
6. Section 5.8 Part I Video
7. Section 5.8 Part II Video
8. Nature By Numbers Video
9. Donald Duck in Mathmagicland (OPTIONAL) Video

Assignments:

1. Assignment 3-1 Unit 3: Elementary Number Theory - See Instructions in the course
2. Assignment 3-2 Unit 3 Exam
3. Wk3 Discussion - See Instructions in the course

### **Week 4**

Media:

1. Poythress, Part III—Mathematical Structures
2. Sections 6.1 and 6.2 Video
3. Section 6.5 Video
4. Section 6.6 Video
5. Section 6.9 Part I Video
6. Section 6.9 Part II Video

Assignments:

1. Assignment 4-1 Unit 4: Algebra - See Instructions in the course
2. Assignment 4-2 Unit 4 Exam
3. Wk4 Discussion - See Instructions in the course

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### **Week 5**

Media:

1. Poythress, Part IV—Other Kinds of Numbers
2. Section 8.1 Video
3. Section 8.2 Video
4. Section 8.3 Video
5. Section 8.4 Part I Video
6. Section 8.4 Part II Video
7. Sections 13.1 and 13.2 Video

Assignments:

1. Assignment 5-1 Unit 5: Geometry - See Instructions in the course
2. Assignment 5-2 Unit 5 Exam
3. Wk5 Discussion - See Instructions in the course

### **Week 6**

Media:

1. Poythress, Part V—Geometry and Higher Mathematics
2. Section 12.1 Video
3. Section 12.2 Video
4. Sections 12.3, 12.4, and 12.5 Video
5. Sections 12.4 and 12.5 Part II Video
6. Section 11.1 Video
7. Section 11.5 Video

Assignments:

1. Assignment 6-1 Unit 6: Statistics and Probability - See Instructions in the course
2. Assignment 6-2 Unit 6 Exam
3. Wk6 Discussion - See Instructions in the course

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### **Week 7**

Media:

1. Poythress, Appendices A-B
2. The Great Math Mystery-Decoding the Universe (PBS) Video

Assignments:

1. Assignment 7-1 Units 1-6 Reflection - See Instructions in the course
2. Assignment 7-2 Christian Philosophy of Mathematics Rough Draft - See Instructions in the course
3. Wk7 Discussion - See Instructions in the course

### **Week 8**

Media:

1. Poythress, Appendices C-E

Assignments:

1. Assignment 8-1 Christian Philosophy of Mathematics Paper - See Instructions in the course
2. Wk8 Discussion - See Instructions in the course