COURSE OUTLINE — COURSE: MATH 107

Lake Washington Technical College

TITLE: Math in Society

Credits:	**5**	**CIP Code:**	
Total Contact Hrs/quarter:	**55**	**EPC Code:**	
Lecture Hrs/quarter:	**55**	**Admin Code:**	
Lab Hours/quarter:	**NA**	**Fee Code:**	
Other Hours/quarter:	**NA**		

COURSE DESCRIPTION

Math in Society is a survey course in practical mathematics. Topics may include probability, statistics, history of mathematics, finance, mathematical modeling, modern geometry, number systems, sets and logic, exponential and logarithmic functions, complex numbers, and modern algebra.

This course contributes to the global outcome of critical thinking.

PREREQUISITES

MATH 099 with a 2.0 or better, or equivalent placement test score.

STUDENT OUTCOMES AND COMPETENCIES

Upon successful completion of this course, students will be able to:

- Identify the cultural utility of mathematics.
- Identify and apply several different mathematical models of practical problems.
- Describe the origin and evolution of mathematical concepts.
- Use scientific notation to express very large and very small quantities.
- Apply simple statistics to the description and understanding of data.
- Recognize different bases systems and different notational approaches to numerals.
- Solve simple logic problems.
- Identify exponential growth in financial and commodity applications.
- Identify whole, integer, rational, irrational, and complex types of numbers.
- Understand the pervasive influence of mathematics in today's society.
- ❖ Use the mathematical critical thinking skills of problem solving, pattern recognition, substitution, following structural rules, and quantitative modeling to solve simple problems in everyday life.

ASSESSMENT METHODS

Homework, class participation, quizzes, tests, assignments, projects, and achievement of specific levels of competency.

SPECIAL EQUIPMENT/COURSE MATERIALS:

A scientific calculator, access to the internet.

COURSE OUTLINE — COURSE: MATH 1xx

Lake Washington Technical College

TITLE: Digital Mathematics

Credits:	**5**	**CIP Code:**	
Total Contact Hrs/quarter:	**55**	**EPC Code:**	
Lecture Hrs/quarter:	**55**	**Admin Code:**	
Lab Hours/quarter:	**NA**	**Fee Code:**	
Other Hours/quarter:	**NA**		

COURSE DESCRIPTION

Digital Mathematics is focused on the mathematical knowledge, skills and techniques necessary for success in computer-based technologies. Content includes counting, number systems, logic, relations, recursion, graphs and trees, algorithms, data structures, digital circuits, software languages, and programming. This course is often named Discrete Mathematics when taught in Computer Science departments.

This course contributes to the global outcome of critical thinking.

PREREQUISITES

MATH 099 with a 2.0 or better, or equivalent placement test score.

STUDENT OUTCOMES AND COMPETENCIES

Upon successful completion of this course, students will be able to:

- Apply counting techniques to solve simple problems in combinatorics and probability.
- Understand the integer system expressed in various bases.
- Identify logical elements in artificial languages.
- Determine tautological, contradictory, and contingent logical forms.
- Understand the difference between functions and relations.
- Appreciate the inductive structure of mathematics.
- Solve simple problems using recursion.
- Understand the fundamental rules of graph and tree data structures.
- Construct simple algorithms for computation.
- Express problems using a variety of different data structures.
- Write simple computer programs in very high-level software languages.
- ❖ Apply the mathematical skills of computational problem solving, pattern recognition, discrete modeling, and formal logic to reasoning, critical thinking, and computation.

ASSESSMENT METHODS

Homework, class participation, quizzes, tests, assignments, and achievement of specific levels of competency.

SPECIAL EQUIPMENT/COURSE MATERIALS

A scientific calculator, access to the internet.

COURSE OUTLINE — COURSE: PHIL 106

Lake Washington Technical College

TITLE: Introduction to Logic

Credits:	**5**	**CIP Code:**
Total Contact Hrs/quarter:	**55**	**EPC Code:**
Lecture Hrs/quarter:	**55**	**Admin Code:**
Lab Hours/quarter:	**NA**	**Fee Code:**
Other Hours/quarter:	**NA**	

COURSE DESCRIPTION

Introduction to Logic is a comprehensive introduction to symbolic logic, including historical development; the structure of logical forms; deductive tools and techniques; the role of logic in language, mathematics, and philosophy; and applications in decision-making, computer programming, and silicon circuitry.

This course contributes to the global outcome of critical thinking.

PREREQUISITES

MATH 099 with a 2.0 or better, or equivalent placement test score.

STUDENT OUTCOMES AND COMPETENCIES

Upon successful completion of this course students will be able to:

- Identify logical elements in natural and artificial languages.
- Determine tautological, contradictory, and contingent logical forms.
- Apply logical techniques to arrive at valid conclusions.
- Manipulate a symbolic language to arrive at deductive conclusions.
- Apply logical rules of inference, replacement, and quantification.
- ❖ Apply the mathematical skills of problem solving, pattern recognition, substitution, following structural rules, quantitative modeling, and formal logic to reasoning, critical thinking, and problem solving.

ASSESSMENT METHODS

Homework, class participation, quizzes, tests, assignments, projects, and achievement of specific levels of competency.

SPECIAL EQUIPMENT/COURSE MATERIALS

Access to the internet.

COURSE OUTLINE — COURSE: ECEM 1xx

Lake Washington Technical College

TITLE: Math Methods for Preschool Teachers

Credits:	**5**	**CIP Code:**	
Total Contact Hrs/quarter:	**55**	**EPC Code:**	
Lecture Hrs/quarter:	**55**	**Admin Code:**	
Lab Hours/quarter:	**NA**	**Fee Code:**	
Other Hours/quarter:	**NA**		

COURSE DESCRIPTION

Math Methods for Preschool Teachers provides the necessary tools and knowledge for successful teaching of mathematics to preschool children ages 2 through 6. Teachers will learn how to play with the mathematical ideas that define the content standards for preschool mathematical skills: number and operations; patterns, functions and relations; geometry and measurement; and problem solving and data analysis. This hands-on course covers a diversity of math activities, including pattern blocks, art, virtual manipulatives, cooking, inside and outside games, math problems, and group activities.

This course contributes to the global outcomes of communication.

PREREQUISITES

MATH 090 with a 2.0 or better, or equivalent placement test score.

STUDENT OUTCOMES AND COMPETENCIES

Upon successful completion of this course, students will be able to:

- Understand the importance of mathematics awareness in early childhood.
- Identify a child's individual experience and natural interest in math.
- Engage young children in mathematical play.
- Integrate math activities and games into daily routines.
- Identify and construct math materials from everyday items.
- Select math activities appropriate to each child's cognitive, linguistic, physical and emotional development
- Demonstrate and communicate the ideas of number and numerical operations.
- Demonstrate and communicate the ideas of patterns and relations.
- Demonstrate and communicate the ideas of geometry and measurement.
- Engage young children in problem solving and data analysis.
- Use informal assessment tools to strengthen a child's math understanding.
- Explain to parents the rationale of various math activities.
- ❖ Communicate basic mathematical ideas appropriate for preschool children through teaching, while demonstrating an awareness of the global role of mathematics.

ASSESSMENT METHODS

Class participation and achievement of specific levels of competency.

SPECIAL EQUIPMENT/COURSE MATERIALS

Access to the internet, various common objects found in homes and in preschool environments,