LEMOYNE-OWEN COLLEGE

DIVISION OF NATURAL SCIENCES, MATHEMATICS AND COMPUTER SCIENCE

Syllabus for MATH 120 A
Concept of Numbers
Summer 2002 / 2T

Text: Miller, Heeren and Hornsby, *Mathematical Ideas*, Ninth Edition, Addison Wesley Company, 2001

Class Meeting: MTWTh 8:00 a.m. to 10:15 a.m., GOH 106.

Instructor: Valerie Chu, Ph.D. *Office*: GOH 400 D *Phone*: 947-7437
Office Hours: by appointment
E-Mail Address: Valerie_Chu@loc.edu
Web site: http://sankofa.loc.edu/chu/web/

Course Description:

The following topics will be discussed in this course:
Approach to problem solving, Sets, Logic, Numeration and Mathematical systems, Number Theory, and the Real Number Systems.

Objectives:

1. Use different problem solving approaches, such as Inductive reasoning, Investigating number patterns, Calculation through estimation, and using graphs to analyze data.
2. Develop Logical thinking through the use of Truth table, and Euler diagram to analyze arguments.
3. Learn about Historical Mathematical systems such as Egyptian Mathematics.
4. .Learn about Real Number system, their properties and applications.

Technology:

The students will utilize the computer to electronically generate all outside assignments. Students will use the Internet to research AIDS. Student will use graphic software to prepare the cover of their portfolio. The students can visit the Web site of Ms. Hopkins at http://sankofa.loc.edu/lhopkins/web/

Tutoring:

Whenever the performance of a student is not satisfactory, the Academic Skills Center (GOH 208) has a mathematics tutor, Mrs. Hightower, available. Also, your instructor is available during her office hours or by appointment.

Recommended Supplementary Readings:

Topics in Contemporary Mathematics, Sixth Edition. By Bello & Britton, Houghton Miffin

Course Requirements:

Several quizzes, a mid-term test and a final *comprehensive* examination will be given. Homework will be assigned frequently.

Class Policies:

A. *Attendance/Tardiness*:

All students are expected to come to class on time and attend all class meetings. Grades of students may be lowered because of tardiness and unexcused absences.

B. *Grading*:

The course grade will be calculated on the following distribution:

Quizzes	40%
Mid-term Test	30%
Final Exam	30%

Grades will be recorded in numerical form until the final averages are determined at the end of the semester.

C. *Grading Scale*:

90 to 100	A,	80 to 89	B,	70 to 79	C,
60 to 69	D,	below 60	F		

D. *Examinations*:

1. Several quizzes, three mid-term tests, and a *comprehensive* final examination will be given.
2. *Good performance in the final examination*: The score of the final examination can be used to replace the lowest score of the mid-term examinations.
3. *Make-up policy*: If a student misses a mid-term examination, the final examination score will be counted as the missing mid-term examination score. There are **no make-up tests** except for a valid document from a doctor; however, a note from home is not acceptable. Any student with an excused absence MUST contact the instructor **PRIOR** to class so arrangements can be made for an appropriate make-up time.

Course Calendar:

Days	***Sections***	***Topics***
7/8	1.1	Solving Problem by Inductive Reasoning
	1.2	An Application of Inductive Reasoning
7/9	1.3	Strategies for Problem Solving
	1.4	Calculating, Estimating, and Reading Graphs
7/10	2.1	Symbols and Terminology of Set Theory
	2.2	Venn Diagram, Sets, and Subsets
7/11	2.3	Set Operations and Cartesian Products
	2.4	Cardinal Numbers and Surveys
7/15	3.1	Statements and Quantifiers
	3.2	Truth Table and Equivalent Statements
7/16	3.3	Analyzing Arguments with Euler Diagram
	4.1	Historical Numeration Systems
	4.2	Arithmetic in the Hindu Arabic Systems
7/17	4.3	Conversion Between Number Bases
7/18		**Review and Mid-Term Test**
7/22	5.1	Prime and Composite Numbers
	5.3	Greatest Common Factor and Least Common Multiple
7/23	5.4	Modular Systems
	6.1	Real numbers, Order and Absolute Value
7/24	6.2	Operations, Properties, and Applications of Real Numbers
7/25	6.3	Rational numbers and Decimal Representation
7/29	6.4	Irrational Numbers and Decimal Representation
7/30	6.5	Applications of Decimals and Percent
7/31		Reviews for Final Exam
8/1		**Comprehensive Final Exam**