

**QUEENSBOROUGH COMMUNITY COLLEGE
MATHEMATICS & COMPUTER SCIENCE DEPARTMENT**

COURSE OUTLINE

MA-301 FOUNDATIONS OF MATHEMATICS

Pre-requisite: MA-010 OR MA-013 OR SATISFACTORY SCORE ON CMAT OR COMPASS EXAMS

Hours: 3 Class Hours 3 Credits

Course Description: Designed to provide students with the mathematical literacy that is necessary to understand contemporary issues in today's technological society. Students will obtain hands-on-experience in solving realistic problems in discrete mathematics, exponential modeling, statistics and probability. Graphing calculators will be used throughout the course.

Curricula for which the course is required/recommended:

A.A. Degree Programs in Liberal Arts and Sciences

A.S. Degree Programs in Liberal Arts and Sciences (Science and Mathematics),

A.A.S. Degree Programs in New Media Technology

General Education Objectives: Use analytical reasoning skills to identify issues or problems and evaluate evidence in order to make informed decisions; reason quantitatively and mathematically as required in their fields of interest and in everyday life; integrate knowledge and skills in their program of study; use information management and technology skills effectively for academic research and lifelong learning.

Course Objectives/ Expected Student Learning Outcomes: Understand the important concepts of statistics used in society today; apply discrete mathematics and probability to solve everyday situations; apply exponential modeling; use and learn how to use graphing calculators to explore the above course material.

Text: USING AND UNDERSTANDING MATHEMATICS, 4th Ed.
By: Jeffrey Bennett and William Briggs. 2008
Addison-Wesley Publishers, Inc.

Methods by which student learning will be evaluated:

The general guidelines for assessing grades are as follows:

- | | | |
|---|-------------------|-----|
| ○ | Examinations | 60% |
| ○ | Assignments | 15% |
| ○ | Final Examination | 25% |

The distribution may be changed at the discretion of the individual instructor.

Academic Integrity: Academic honesty is taken extremely seriously and is expected of all students. All assignments must be the original work of the student (and partners or group, if applicable). All questions or concerns regarding ethical conduct should be brought to the course instructor. "It is the official policy of the College that all acts or attempted acts that are violations of academic integrity be reported to the Office of Student Affairs (OSA). At the faculty member's discretion and with the concurrence of the student or students involved, some cases, though reported to the OSA, may be resolved within the confines of the course and department. The instructor has the authority to adjust the offender's grades as deemed appropriate, including assigning an F to the assignment or exercise or, in more serious cases, an F to the student for the entire course." (Taken from the QCC Academic Integrity Policy, 2/14/2005.)

NOTE: Any student who feels that he/she may need an accommodation based upon the impact of a disability should contact the instructor privately to discuss his/her specific needs. Please contact the office of Services for Students with Disabilities in Science Building, room 132 (718 631 6257) to coordinate reasonable accommodations for students with documented disabilities.

<u>TOPICS</u>	<u>SECTIONS</u>	<u>HOURS</u>
Applications of Statistics ...	.....	.....10
Fundamentals of Statistics	5A-5B	
Statistical Functions on the TI-83+ / TI-84+ Calculator	Instructor's notes	
Statistical Tables and Graphs, Correlation	5C-5E	
Data Distributions, Measures of Centers, Measures of	6A-6B	
Variation		
Normal Distribution and Statistical Inference	6C-6D	
Applications of Probability .....	.....	.....6
Fundamentals of Probability	7A	
Combining Probabilities.	7B	
Law of Large Numbers, Assessing Risks	7C-7D	
Counting Techniques, Permutations & Combinations	7E	
TI-83+ / TI-84+ Graphing Calculator	Instructor's notes	.....2
Mathematical Calculations, Functions, Tables, and Graphing		
Capabilities.		
Applications of Exponential Modeling.....	.....	.....11
Growth: Linear vs. Exponential	8A	
Doubling Time and Half-Life	8B	
Logarithms	p. 531	
Real Population Growth	8C	
Applications of Discrete Mathematics.....	.....	.....10
Theory of Voting	12A-12B	
Apportionment	12C	
Exams	.....	.....3
.....		
	<u>Total:</u>	42

The approximate hours per chapter are guidelines and are at the discretion of the instructor. The instructor is responsible for making assignments and scheduling examinations. The Final Exam date is scheduled by the Registrar.