

KINGSBOROUGH COMMUNITY COLLEGE  
The City University of New York

CURRICULUM TRANSMITTAL COVER PAGE

Department: Mathematics & Computer Science Date: March 23, 2017

Title Of Course Or Degree: MAT 00500 – Introduction to Mathematical Thought

Change(s) Initiated: (Please check)

- |   |   |
|---|---|
| <input type="checkbox"/> Closing of Degree        | <input type="checkbox"/> Change in Degree or Certificate Requirements         |
| <input type="checkbox"/> Closing of Certificate   | <input type="checkbox"/> Change in Degree Requirements (adding concentration) |
| <input type="checkbox"/> New Certificate Proposal | <input type="checkbox"/> Change in Pre/Co-Requisite                           |
| <input type="checkbox"/> New Degree Proposal      | <input type="checkbox"/> Change in Course Designation                         |
| <input checked="" type="checkbox"/> New Course    | <input type="checkbox"/> Change in Course Description                         |
| <input type="checkbox"/> New 82 Course            | <input type="checkbox"/> Change in Course Title, Numbers Credit and/or Hour   |
| <input type="checkbox"/> Deletion of Course       | <input type="checkbox"/> Change in Academic Policy                            |
|   | <input type="checkbox"/> Pathways Submission:                                 |
|   | <input type="checkbox"/> Life and Physical Science                            |
|   | <input type="checkbox"/> Math and Quantitative Reasoning                      |
|   | <input type="checkbox"/> A. World Cultures and Global Issues                  |
|   | <input type="checkbox"/> B. U.S. Experience in its Diversity                  |
|   | <input type="checkbox"/> C. Creative Expression                               |
|   | <input type="checkbox"/> D. Individual and Society                            |
|   | <input type="checkbox"/> E. Scientific World                                  |

Other (please describe): \_\_\_\_\_

PLEASE ATTACH MATERIAL TO ILLUSTRATE AND EXPLAIN ALL CHANGES

DEPARTMENTAL ACTION

Action by Department and/or Departmental Committee, if required:

Date Approved: 03/21/2017 Signature, Committee Chairperson: \_\_\_\_\_

I have reviewed the attached material/proposal

Signature, Department Chairperson: R. a. Young

NO. 00237149



**KINGSBOROUGH COMMUNITY COLLEGE  
THE CITY UNIVERSITY OF NEW YORK**

**NEW COURSE PROPOSAL FORM**

**1. DEPARTMENT, COURSE NUMBER, AND TITLE (SPEAK TO ACADEMIC SCHEDULING FOR NEW COURSE NUMBER ASSIGNMENT):** Department of Mathematics & Computer Science, MAT 00500 Introduction to Mathematical Thought

**2. DOES THIS COURSE MEET A GENERAL EDUCATION/CUNY CORE CATEGORY?**

- Life and Physical Science
- Math and Quantitative Reasoning**
  - A. World Cultures and Global Issues
  - B. U.S. Experience in its Diversity
  - C. Creative Expression
  - D. Individual and Society
  - E. Scientific World

**IF YES, COMPLETE AND SUBMIT WITH THIS PROPOSAL A CUNY COMMON CORE SUBMISSION FORM.** (Please see attachment.)

**3. DESCRIBE HOW THIS COURSE TRANSFERS (REQUIRED FOR A.S. DEGREE COURSE). IF A.A.S. DEGREE COURSE AND DOES NOT TRANSFER, JUSTIFY ROLE OF COURSE, E.G. DESCRIBE OTHER LEARNING OBJECTIVES MET:**

Preliminary indications are that students will receive transfer credit for:

City College: Math 18000-Quantative Reasoning.

Other CUNY Colleges: Potential CUNY Pathways courses fulfilling the Required Core, Mathematical and Quantitative Reasoning requirement.

**4. BULLETIN DESCRIPTION OF COURSE:** This course emphasizes quantitative reasoning skills for informed citizens to understand the world around them. Topics include basic probability, data analysis, solution of elementary Algebraic equations, word problems and modeling from data.

**5. CREDITS AND HOURS\* (PLEASE CHECK ONE APPROPRIATE BOX BELOW BASED ON CREDITS):**

1-credit:	<input type="checkbox"/> 1 hour lecture <input type="checkbox"/> 2 hours lab/field/gym
-----------	---

2-credits:	<input type="checkbox"/> 2 hours lecture <input type="checkbox"/> 1 hour lecture, 2 hours lab/field <input type="checkbox"/> 4 hours lab/field
------------	--

3-credits:	<input type="checkbox"/> 3 hours lecture <input type="checkbox"/> 2 hours lecture, 2 hours lab/field <input type="checkbox"/> 1 hour lecture, 4 hours lab/field <input type="checkbox"/> 6 hours lab/field
------------	---

<b>3-credits, 3 hours, plus 4-equated credits, 4 hours, total of 7 hours</b>
--



**10. PROPOSED TEXT BOOK(S) AND/OR OTHER REQUIRED INSTRUCTIONAL MATERIAL(S):**

Robert Blitzer, *Thinking Mathematically*, 6<sup>th</sup> Edition, Prentice Hall/Pearson Publishing, 2015.

**11. REQUIRED COURSE FOR MAJOR OR AREA OF CONCENTRATION? No.**

**IF YES, COURSE IS REQUIRED, SUBMIT A SEPARATE CURRICULUM TRANSMITTAL COVER PAGE INDICATING A "CHANGE IN DEGREE OR CERTIFICATE REQUIREMENTS" AS WELL AS A PROPOSAL THAT MUST INCLUDE A RATIONALE AND THE FOLLOWING ADDITIONAL PAGES: A "CURRENT" DEGREE WITH ALL PROPOSED DELETIONS (STRIKEOUTS) AND ADDITIONS (BOLDED TEXT) CLEARLY INDICATED, AND A "PROPOSED" DEGREE, WHICH DISPLAYS THE DEGREE AS IT WILL APPEAR IN THE CATALOG (FOR A COPY OF THE MOST UP-TO-DATE DEGREE/CERTIFICATE REQUIREMENTS CONTACT AMANDA KALIN, EXT. 4611).**

**NYSED GUIDELINES OF 45 CREDITS OF LIBERAL ARTS COURSE WORK FOR AN ASSOCIATE OF ARTS DEGREE (A.A.), 30 CREDITS FOR AND ASSOCIATE OF SCIENCE DEGREE (A.S.), AND 20 CREDITS FOR AN APPLIED ASSOCIATE OF SCIENCE DEGREE (A.A.S.) MUST BE ADHERED TO FOR ALL 60 CREDIT PROGRAMS.**

**13. IF OPEN ONLY TO SELECTED STUDENTS SPECIFY POPULATION:**

Open to students who satisfy the prerequisite (See 7A above)

**14. EXPLAIN WHAT STUDENTS WILL KNOW AND BE ABLE TO DO UPON COMPLETION OF COURSE:**

Students will be able to evaluate solutions to problems for reasonableness using a variety of means, including estimation. Students will learn effective communication of quantitative analysis or solutions to mathematical problems. Students will have the basic knowledge of the usage of algebraic numerical, graphical, or statistical methods to draw accurate conclusions and solve mathematical problems. Students will understand the fundamentals of statistics. Students will know how to represent quantitative problems. Students will understand the principles of mathematical modeling. Students will understand the application of mathematical methods to problems in other fields of study.

**15. METHODS OF TEACHING –E.G. LECTURES, LABORATORIES, AND OTHER ASSIGNMENTS FOR STUDENTS, INCLUDING ANY OF THE FOLLOWING: DEMONSTRATIONS, GROUP WORK, WEBSITE OR E-MAIL INTERACTIONS AND/OR ASSIGNMENTS, PRACTICE IN APPLICATION OF SKILLS, ETC.:**

Mathematics 5 is taught by classroom lecture and demonstration of specific mathematical concepts, operations, and procedures, combined with homework assignments designed to improve and solidify student understanding and mastery of these concepts, operations and procedures.

**16. ASSIGNMENTS TO STUDENTS:** Assignments are taken from the textbook, and are chosen at the discretion of the instructor.

**17. DESCRIBE METHOD OF EVALUATING LEARNING SPECIFIED IN #15 - INCLUDE PERCENTAGE BREAKDOWN FOR GRADING. IF A DEVELOPMENTAL COURSE INCLUDE HOW THE NEXT LEVEL COURSE IS DETERMINED AS WELL AS NEXT LEVEL PLACEMENT.**

Evaluation is based upon regular classroom examinations and a final examination. The instructor will administer a final exam that will constitute 40% of the final grade. The remaining 60% is to be divided between in-class tests, homework, and class participation at the discretion of the instructor. A final weighted average of 60% or better will be deemed sufficient to pass the course.

**18. TOPICAL COURSE OUTLINE FOR THE 12 WEEK SEMESTER:**

<b>Hours</b>	<b>Topics</b>	<b>Text Sections</b>
1	Basic Set Concepts	2.1
1	Subsets	2.2
1	Venn Diagrams and Set Operations	2.3
2	Set Operations and Venn Diagrams with Three Sets	2.4
4	The integers; Order of Operations	5.2
2	Algebraic Expressions and Formulas	6.1
3	Linear Equations in One Variable and Proportions	6.2
1	Applications of Linear Equations	6.3
1	Measuring Length: The Metric System	9.1
	Measuring Weight and Temperature	9.3
2	Measuring Area and Volume	9.2
2	Linear Inequalities in One Variable	6.4
4	The Irrational Numbers	5.4
2	Exponents and Scientific Notation	5.6
2	Percent, Sales Tax, and Discounts	8.1
	Exponents and Scientific Notation	5.6
3	Simple Interest	8.3
	Compound Interest	8.4
2	Annuities, Methods of Savings, and Investments	8.5
4	Quadratic Equations	6.5
4	Sampling, Frequency Distributions, and Graphs	12.1
2	Scatter Plots, Correlation, and Regression Lines	12.6
2	Measures of Central Tendency	12.2
	The Normal Distribution	12.4
2	Measures of Dispersion	12.3
4	The Normal Distribution	12.4
1	Graphing and Functions	7.1
4	Linear Functions and Their Graphs	7.2
1	Systems of Linear Equations in Two Variables	7.3
7	The Fundamental Counting Principle	11.1
	Fundamentals of Probability	11.4
	Events Involving Not and Or; Odds	11.6
	Events Involving And; Conditional Probability	11.7
4	Permutations	11.2
	Combinations	11.3
2	Expected Value	11.8
2	Modeling Data; Exponential, Logarithmic, and Quadratic Functions	7.6
1	Graphs, Paths, and Circuits	14.1
1	Euler Paths and Euler Circuits	14.2
1	Hamilton Paths and Hamilton Circuits	14.3
1	Trees	14.4
9	Tests and Reviews	

## 19. SELECTED BIBLIOGRAPHY AND SOURCE MATERIALS:

- 1) Bennet, *Using and Understanding Mathematics: A Quantitative Reasoning Approach*, 6<sup>th</sup> Edition, Pearson, 2014.
- 2) Aufmann, *Mathematical Thinking and Quantitative Reasoning*, 1<sup>st</sup> Edition, Cengage Learning, 2007.
- 3) Johnson, *Mathematics: A Practical Odyssey*, 8<sup>th</sup> Edition, Brooks Cole, 2015.
- 4) Scott, *Cornerstones of Algebra: Problem Solving, Quantitative Reasoning, and Critical Thinking*, 1<sup>st</sup> Edition, Kendall Hunt Publishing, 2012.
- 5) Sons, Nicholls, and Stephen, *Mathematical Thinking and Quantitative Reasoning*, 5<sup>th</sup> Edition, Kendall Hunt Publishing, 2012.
- 6) Triola, *Elementary Statistics*, 12<sup>th</sup> Edition, Pearson, 2012.
- 7) Bluman, *Elementary Statistics: A Step-by-Step Approach*, 9<sup>th</sup> Edition, McGraw-Hill Education, 2013.
- 8) Larson and Farber, *Elementary Statistics: Picturing the World*, 6<sup>th</sup> Edition, Pearson, 2014.
- 9) Navidi and Monk, *Elementary Statistics*, 2<sup>nd</sup> Edition, McGraw-Hill 2015.
- 10) Tussy, *Elementary Algebra*, 5<sup>th</sup> Edition, Brooks Cole, 2012.
- 11) Bittinger, Ellenbogen and Johnson, *Elementary Algebra, Concepts & Applications*, 9<sup>th</sup> Edition, Pearson, 2012.
- 12) Jacobs, *Elementary Algebra*, Revised Edition, Master Books, 2016.

*Revised/Dec.2015/AK*