KINGSBOROUGH COMMUNITY COLLEGE
The City University of New York

CURRICULUM TRANSMITTAL COVER PAGE

Department:_____ **Date:**_____

Title Of Course/Degree/Concentration/Certificate:_____

Change(s) Initiated: (Please check)

☐ **Closing of Degree**   ☐ **Change in Degree or Certificate**
☐ **Closing of Certificate**   ☐ **Change in Degree: Adding Concentration**
☐ **New Certificate Proposal**   ☐ **Change in Degree: Deleting Concentration**
☐ **New Degree Proposal**   ☐ **Change in Prerequisite, Corequisite, and/or Pre/Co-requisite**
☐ **New Course**   ☐ **Change in Course Designation**
☐ **New 82 Course (Pilot Course)**   ☐ **Change in Course Description**
☐ **Deletion of Course(s)**   ☐ **Change in Course Title, Number, Credits and/or Hours**
                                                                    ☐ **Change in Academic Policy**
                                                                    ☐ **Pathways Submission:**
                                                                              ☐ **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**

☐ **Change in Program Learning Outcomes**
☐ **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:_____**Signature, Committee Chairperson:**_____

If submitted Curriculum Action affects another Department, signature of the affected Department(s) is required:

Date Approved:_____**Signature, Department Chairperson:**_____

Date Approved:_____**Signature, Department Chairperson:**_____

I have reviewed the attached material/proposal

Signature, Department Chairperson: _____

TO: Fall 2020 Curriculum Committee

FROM: Department of Mathematics & Computer Science

DATE: 08/01/2020

RE: New Course: College Algebra for STEM Majors (MAT 09B0)

The Department of Mathematics & Computer Science is proposing to add College Algebra for STEM Majors (MAT 09B0), as follows:

> **ADD:**
> MAT 09B0- College Algebra for STEM Majors

Rationale for Change:

The proposed course represents a new pedagogical approach to College Algebra, using a lab-based model and more supported interaction for preparing prospective STEM students for success in precalculus.

Students will work in a laboratory setting with an instructor and will be provided hands-on, personalized guidance in the development and fine-tuning of algebraic skills. This approach will facilitate success for students who would not otherwise succeed in College Algebra.

Additionally, this course aligns with the upcoming CUNY transition, effective Fall 2022, to remove courses that follow Elementary Algebra – at Kingsborough MAT R300 – Elementary Algebra II - but precede the first-level Pathways MQR course – at Kingsborough MAT 900 – College Algebra.

Currently students who are Math Proficient enroll as follows:

MAT R300 – Elementary Algebra II **to** MAT 900 – College Algebra **to** MAT 1400 Pre-Calculus.

The new course will allow student to proceed to MAT 1400 a semester earlier:

MAT 9B0 **to** MAT 1400

This course also meets the concerns outlined by CUNY for Algebra Proficiency Standard for Students Pursuing STEM Degrees –which " allows for up to two additional hours of corequisite support in college algebra to develop a strong foundation for further STEM-focuses algebra sequences."

MAT 900 – College Algebra, is 3 credits, 4 hours. The proposed course, MAT 9B0 – College Algebra for STEM Majors, is 3 credits, 0 hours lecture, 6 hours lab. This aligns with CUNY's trajectory as well as Middle States Commission on Higher Education (MCHE) Guidelines for College Credits Assigned for Instructional Hours.

Once the course is in place, the department plans to conduct an analysis of student success, including such factors as grade distribution and particularly Exit Exam performance in MAT 9B as compared/contrasted with those of MAT 9, and assessment of both global and particular essential skills needed for STEM students going forward. One interesting potential avenue for such study will be the relative emphases on specific skill sets which have particular value for different avenues of study within STEM (health sciences vs engineering, for example) with possible future potential for customization within these laboratory-based sections.

The department is hopeful that this new approach will provide much-enhanced student success for our STEM students.

Adjustments to the following STEM degrees are submitted to reflect MAT 9B0 – College Algebra for STEM Majors, under Required Core: Mathematical and Quantitative Reasoning (MQR).

Department of Biological Sciences:

- A.S. Biology
- A.S. Biotechnology

Department of Mathematics and Computer Science:

- A.A.S. Computer Information Systems
- A.S. Computer Science
- A.S. Mathematics

Department of Physical Sciences

- A.S. Chemistry
- A.S. Earth and Planetary Sciences
- A.S. Engineering Science
- A.S. Physics
- A.S. Science for Forensics

Add/Delete/Change	A.S. MATHEMATICS	
	Department: Mathematics and Computer Sciences	
	HEGIS: 5617.00	
	PROGRAM CODE: 01041	
	CUNY CORE	**CREDITS**
	REQUIRED CORE: (4 Courses, 12 Credits)	12
	When Required Core Courses are specified for a category, they are required for the major	
	ENG 1200 - Composition I	3
	ENG 2400 - Composition II	3
	Mathematical and Quantitative Reasoning*^:	3
	MAT 900 - College Algebra^ or	
ADD:	**MAT 9B0 - College Algebra for STEM Majors^ or**	
	MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics^ or	
	MAT 1500 - Calculus I	
	Life and Physical Sciences	3
	FLEXIBLE CORE:	18
	When Flexible Core Courses are specified for a category, they are required for the major. One course from each Group A to D (Group E is satisfied by the courses shown). No more than two courses can be selected from the same discipline.	
	A. World Cultures and Global Issues	
	B. U.S. Experience In Its Diversity	
	C. Creative Expression	
	D. Individual & Society	
	E. Scientific World*^:	
	MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics^ or	3
	MAT 1500 - Calculus I or	3
	MAT 1600 - Calculus II	3
	AND	
	CS 1200 - Introduction to Computing	3
	Major Requirements (8-10 Courses, 24 - 30 Credits)	
	MAT 2100 - Calculus III	3
	MAT 5500 - Differential Equations	3
	MAT 5600 - Linear Algebra	3
	MAT 9100/BIO 9100 - Biostatistics or	4
	MAT 2200/BA 2200 - Business Statistics	
	CS 3500 - Discrete Structures	3
	MAT 3000 Introduction to Mathematical Concepts in Proof	1
	If not taken for Required Core or Flexible Core:	
	MAT 1500 - Calculus I	3
	MAT 1600 - Calculus II	3

	Select <u>ONLY ONE</u> (1) of the these two options below based on initial Mathematics Placement: **	7-8
	OPTION 1:	
	If student's initial Mathematics Placement is below MAT 1500:	
	MAT 1000 - College Trigonometry^	3
	AND	
	Select one (1) course from the following:	
	CS 13A0 - Advanced Programming Techniques	4
	MAT 1100 - Finite Mathematics	4
	MAT 3200 - Introduction to Set Theory	4
	MAT 7100 - Applications of Linear Algebra and Vector Analysis	4
	OPTION 2:	
	If student's initial Mathematics Placement is MAT 1500:	
	Select two (2) courses from the following:	4
	CS 13A0 - Advanced Programming Techniques	4
	MAT 1100 - Finite Mathematics	4
	MAT 3200 - Introduction to Set Theory	4
	MAT 7100 - Applications of Linear Algebra and Vector Analysis	4
	ELECTIVES: 0 **-** 6 credits sufficient to total 60 credits for the degree.	
	TOTAL:	60
	*This program has a waiver to require particular courses in the Common Core, otherwise more than the minimum credits for the degree may be necessary.	
CHANGE:	**^ Depending on Math placement, students may be required to complete MAT 900, or MAT 9B0, and/or MAT 1400 and MAT 1000.**	
	**Consultation with the Mathematics Department is HIGHLY recommended to ensure that the student selects the correct option.	

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