The City University of New York
CURRICULUM DATA TRANSMITTAL SHEET

DEPARTMENT: **PHYSICAL SCIENCES** DATE: **Spring 2019**

Title of Course or Degree Change: **A.S. ENGINEERING**

Change(s) Initiated: (Please Check)

__ Closing of Degree
__ Closing of Certificate
__ New Certificate Proposal
__ New Degree Proposal
__ New Course
__ New 82 Course
__ Deletion of Course

X Change in Degree or Certificate Requirements
__ Change in Degree Requirements (adding concentration)
__ Change in Pre/Co-Requisite
__ Change in Course Designation
__ Change in Course Description
__ Change in Course Title, Numbers Credit and/or Hour
__ 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

__ Other (please describe):

PLEASE ATTACH PERTINENT MATERIAL TO ILLUSTRATE AND EXPLAIN ALL CHANGES

I. DEPARTMENTAL ACTION

Action by Department &/or Departmental Curriculum Committee, if required:

Date approved: 3/14/19 Signature, Committee Chairperson: John Mulvey

Signature, Department Chair: John Mulvey Date: 3/14/19

Appended are:

1. Proposed Degree Requirements A.S. Engineering
2. Proposed 4 semester Degree Map A.S. Engineering
3. List of Proposed Changes A.S. Engineering
4. Current catalog description A.S. Engineering (Marked-up to show add/drop changes)
5. Proposed catalog description A.S. Engineering

Reason for Changes:

To adhere to and to comport with changes to: Math Placement; Math Ready; Math Ready to Calculus Ready sequence; Calculus Ready through Calculus sequence; Hidden Pre-requisite; Degree in 60 Credits; and Degree in 4 Academic Semesters policies and practices.

Degree Requirement A.S. ENGINEERING

CUNY's General Education requirements: [excluding math and science requirement]
One year of English Composition: ENG 12 & ENG 24 (6 crs.)
Group A: One semester World (3 crs.)
Group B: One semester United States (3 crs.)
Group C: One semester Creative (3 crs.)
Group D: One semester Individual (3 crs.)

18 credits

Department Major Requirements

Physical Sciences Requirements:
CHM 1100 – General Chemistry I (4 crs.)
CHM 1200 – General Chemistry II (4 crs.)
EGR 2100 –Engineering Design (3 crs.)
EGR 2200 –Electrical Engineering (3 crs.)
EGR 2300 –Engineering Thermodynamics (3 crs.)
PHY 1300 – Advanced General Physics I (4 crs.)
PHY 1400 – Advanced General Physics II (4 crs.)

25 credits

Mathematics Requirements: (5-8 of the following)
MAT 0900 Algebra (3 crs);
MAT 1000 Trigonometry (3 crs);
MAT 1400 Pre-Calculus (3 crs);
MAT 1500 Calculus I (3 crs);
MAT 1600 Calculus II (3 crs);
MAT 2100 Calculus III (3 crs);
MAT 5500 Linear Algebra (3 crs);
MAT 5600 Differential Equations (3 crs) ; OR
CS 1200 Introduction to Computing (4 crs)

18-28 credits

Elective Credits

00 credits

Total 61-71 credits

AS ENGINEERING
Degree Map

CHM, ENG, MAT development (if required) 0 crs.

Semester 1 (16 Credits)	**Semester 2 (17 Credits)**
• CHM11 Chemistry I 4 crs.	• CHM12 -Chemistry II 4 crs.
• MAT .....3 crs	• EGR 2100 – Engineering Design 3 crs.
• ENG12 -English Composition II 3 crs.	• PHY13 Advanced Physics II 4 crs.
• Group A or B or C or D 3 crs.	• MAT .....3 crs
• Group A or B or C or D 3 crs.	• ENG24 -English Composition II 3 crs.
Semester 3 (16-19 credits)	**Semester 4 (12-19 credits)**
• PHY14 -Advanced Physics I 4 crs.	• EGR 22--Electric Circuits 3 crs.
• EGR 23--Thermodynamics 3 crs.	• MAT/CS 6-13- crs.
• MAT 6-9 crs.	• Group A or B or C or D 3 crs.
• Group A or B or C or D 3 crs.	

Add/Delete/Change	**A.S. ENGINEERING SCIENCE**	
	HEGIS: 5609.00	
	PROGRAM CODE: 87212	
	CUNY CORE	**CREDITS**
CHANGE	**REQUIRED CORE:** (4 Courses, ~~14~~ **13** Credits)	~~14~~ **13**
	When Required Core Courses are specified for a category, they are required for the major	
	ENG 1200 - English Composition I	3
	ENG 2400 - English Composition II	3
	Mathematical & Quantitative Reasoning*:	~~04~~
ADD	**MAT 900 - College Algebra or**	
ADD	**MAT 9A0 - Algebra for STEM Majors or**	
ADD/CHANGE (CREDITS)	**MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics or**	
CHANGE (CREDITS)	MAT 1500 – Calculus I	
	Life and Physical Sciences*: CHM 1100 - General Chemistry I	4
	FLEXIBLE CORE: (6 Courses, 20 Credits)	20
	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*:	
DELETE	~~MAT 1600 - Calculus II~~	
	CHM 1200 - General Chemistry II	
ADD	**PHY 1300 – Advanced General Physics I**	
CHANGE	**DEPARTMENT REQUIREMENTS** (9 - **12** Courses, ~~32~~ **28 - 37** Credits)	~~32~~ **28-37**
DELETE	~~MAT 2100 – Calculus III~~	~~04~~
DELETE	~~MAT 5500 – Differential Equations~~	~~3~~
DELETE	~~MAT 5600 – Linear Algebra~~	~~3~~
DELETE	~~CS 1200 – Introduction to Computing~~	~~04~~
DELETE	~~PHY 1300 – Advanced General Physics I~~	~~04~~
ADD	**Additional Physical Sciences Requirements (4 Courses, 13 Credits)**	
ADD	PHY 1400 – Advanced General Physics II	4
ADD	EGR 2100 – Engineering Design	3
ADD	EGR 2200 – Introduction to Electrical Engineering	3
ADD	EGR 2300 – Introduction to Engineering Thermodynamics	3
ADD	**Additional Mathematics Requirements (5 - 8 Courses, 15 - 24 Credits)**	**15 - 24**
ADD	**Select five (5) to eight (8) additional courses beyond the Mathematical and Quantitative Reasoning (MQR) course from the following:**	

ADD/CHANGE (CREDITS)	**CS 1200 – Introduction to Computing**	
ADD	**MAT 1000 - College Trigonometry^**	
ADD/CHANGE (CREDITS)	**MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics (Recommended)**	
ADD/CHANGE (CREDITS)	**MAT 1500 - Calculus I (Recommended)**	
ADD/CHANGE (CREDITS)	**MAT 1600 - Calculus II (Recommended)**	
ADD/CHANGE (CREDITS)	**MAT 2100 - Calculus III**	
ADD	**MAT 5500 - Differential Equations**	
ADD	**MAT 5600 - Linear Algebra**	
CHANGE	**ELECTIVES:** **0** ~~to 4~~ credits sufficient to meet the required total 60 credits for the degree.	**0**-~~0~~4
CHANGE	**TOTAL CREDITS:** ~~66-70~~ **61** - 70	~~66-70~~ **61 - 70**
	*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.	
ADD	**^ Depending on Math placement, students may be required to select MAT 1000**	

Add/Delete/Change	**A.S. ENGINEERING SCIENCE**	
	HEGIS: 5609.00	
	PROGRAM CODE: 87212	
	CUNY CORE	**CREDITS**
	REQUIRED CORE: (4 Courses, **13** Credits)	**13**
	When Required Core Courses are specified for a category, they are required for the major	
	ENG 1200 - English Composition I	3
	ENG 2400 - English Composition II	3
	Mathematical & Quantitative Reasoning*:	**3**
	MAT 900 - College Algebra or	
	MAT 9A0 - Algebra for STEM Majors or	
	MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics or	
	MAT 1500 – Calculus I	
	Life and Physical Sciences*: CHM 1100 - General Chemistry I	4
	FLEXIBLE CORE: (6 Courses, 20 Credits)	20
	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*:	
	CHM 1200 - General Chemistry II	
	PHY 1300 – Advanced General Physics I	
	DEPARTMENT REQUIREMENTS (9 - **12** Courses, **28 - 37** Credits)	**28 - 37**
	Additional Physical Sciences Requirements (4 Courses, 13 Credits)	**13**
	PHY 1400 – Advanced General Physics II	4
	EGR 2100 – Engineering Design	3
	EGR 2200 – Introduction to Electrical Engineering	3
	EGR 2300 – Introduction to Engineering Thermodynamics	3
	Additional Mathematics Requirements (5 - 8 Courses, 15 - 24 Credits)	**15 - 24**
	Select five (5) to eight (8) additional courses beyond the Mathematical and Quantitative Reasoning (MQR) course from the following:	
	CS 1200 – Introduction to Computing	
	MAT 1000 - College Trigonometry^	
	MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics (Recommended)	
	MAT 1500 - Calculus I (Recommended)	
	MAT 1600 - Calculus II (Recommended)	
	MAT 2100 - Calculus III	
	MAT 5500 - Differential Equations	
	MAT 5600 - Linear Algebra	
	ELECTIVES: **0** credits sufficient to meet the required total 60 credits for the degree.	**0**

	TOTAL CREDITS: 61 - 70	**61 - 70**
	*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.	
	^ Depending on Math placement, students may be required to select MAT 1000	