The City University of New York
CURRICULUM DATA TRANSMITTAL SHEET

DEPARTMENT: PHYSICAL SCIENCES DATE: Spring 2018

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: Signature, Committee Chairperson:

Signature, Department Chair: Date:

Appended are:

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

Reason for Changes:

Comport with CUNY Degree and Academic Standards policies memo of 20 July 2016 requiring degree to be 60 credits including all pre-requisites and completed 4 semesters.

A.S. Engineering Sciences has an exemption from the 60 credit limit, however changes must be made to comport with change made to comport with CUNY Degree and Academic Standards policies memo of 20 July 2016.

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:
CS 1200 -- Computing (4 crs)
MAT 9900 – Pre-Calculus (3 crs)
MAT 1500 – Calculus I (3 crs)
MAT 1600 – Calculus II (3 crs)
MAT 2100 – Calculus III (3 crs.)
MAT 5600 – Linear Algebra (3 crs.)
MAT 5500 – Differential Equations (3 crs.)

22 credits

Elective Credits

0 credits

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Total 65 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 9900 Pre-Calculus	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 1500 Calculus I	3 crs
• Group A or B or C or D	3 crs.	• ENG24 -English Composition II	3 crs.
Semester 3 (17 credits)		**Semester 4 (15 credits)**	
• PHY14 -Advanced Physics I	4 crs.	• EGR 22--Electric Circuits	3 crs.
• EGR 22--Thermodynamics	3 crs.	• MAT 21 – Calculus III	3 crs.
• CS 1200 –Computing	4 crs.	• MAT 55 – Differential Equations	3 crs.
• MAT16– Calculus II	3 crs.	• MAT 56 – Linear Algebra	3 crs.
• Group A or B or C or D	3 crs.	• Group A or B or C or D	3 crs.

CURRENT

A.S. ENGINEERING SCIENCE

ACADEMIC DEPARTMENT: Physical Sciences

HEGIS: 5609.00

PROGRAM CODE: 87212

CHAIRPERSON: Dr. John Mikalopas

OFFICE LOCATION: S-243 TELEPHONE: (718) 368-5746

The curriculum presented here applies to students who started the major in Fall 2017 or Spring 2018. If you enrolled as a matriculant prior to that, please see the *College Catalog* for the year you started the major as a matriculant for the curriculum requirements that apply to you.

Consultation with the Program Advisor is required.

Learning Outcomes:

Upon successful completion of the Engineering Science degree program requirements, graduates will:

1. employ mathematics, science, and computing techniques to support the study and solution of engineering problems
2. understand the principles and methods of engineering
3. demonstrate practical skills in modern laboratory techniques, methods, instrumentation, and data analysis
4. communicate clearly their understandings of engineering and of their specific activity in the field orally and in writing
5. understand the importance of professional and ethical responsibilities of engineers
6. recognize environmental constraints and safety issues in engineering
7. exhibit good teamwork skills and serve as effective members of teams
8. be prepared for a lifetime of continuing education

College Requirements:

Successful completion of CUNY Assessment Tests in Reading, Writing, and ACCUPLACER CUNY Assessment Test in Math with passing examination scores, unless otherwise exempt, or developmental courses may be required.

Civic Engagement Experiences:

Two (2) Civic Engagement experiences satisfied by Civic Engagement Certified or Civic Engagement Component courses or approved outside activity.

Writing Intensive Requirement:

One (1) Writing Intensive course in any discipline is required. Participation in a Learning Community that includes ENG 1200 or ENG 2400 also satisfies this requirement.

Refer to course descriptions for prerequisite, corequisite and/or pre-corequisite requirements

DROP: ~~Required Core (4 Courses, 14 Credits):~~

ADD: Required Core (4 Courses, 13 Credits):

When Required Core Courses are specified for a category, they are required for the major

ENG 1200 Composition I (3 crs.)

ENG 2400 Composition II (3 crs.)

Mathematical & Quantitative Reasoning Course*

DROP: ~~MAT 1500 – Calculus I (4 crs.)~~

ADD: MAT 99 Pre-Calculus(3crs)

Life & Physical Sciences Course* - CHM 1100 – General Chemistry I (4 crs.)

*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.

Flexible Core (6 Courses, 20 Credits):

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.)

A. World Cultures and Global Issues Designated Course
B. U.S. Experience in its Diversity Designated Course
C. Creative Expression Designated Course
D. Individual and Society Designated Course
E. Scientific World Designated Courses*

~~DROP: MAT 1600 – Calculus II (4 crs.)~~

ADD: PHY 1300 – Advanced General Physics I (4 crs.)

CHM 1200 – General Chemistry II (4 crs.)

*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.

No more than two courses can be selected from the same discipline

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DROP:

~~**Major Requirements (9 Courses, 32 Credits):**~~
~~**MAT 2100 – Calculus III (4 crs.)**~~
~~**MAT 5500 – Differential Equations (3 crs.)**~~
~~**MAT 5600 – Linear Algebra (4 crs.)**~~
~~**CS 1200 – Introduction to Computing (4 crs.)**~~
~~**PHY 1300 – Advanced General Physics I (4 crs.)**~~
~~**PHY 1400 – Advanced General Physics II (4 crs.)**~~
~~**EGR 2100 – Engineering Design (3 crs.)**~~
~~**EGR 2200 – Introduction to Electrical Engineering (3 crs.)**~~
~~**EGR 2300 – Introduction to Engineering Thermodynamics (3 crs.)**~~

ADD:

Additional Department Degree Requirements:

Physical Science Requirements (4 Courses, 13 Credits):

PHY 1400 – Advanced General Physics II (4 crs.)
EGR 2100 – Introduction to Engineering Design (3 crs.)
EGR 2200 – Introduction to Electrical Engineering (3 crs.)
EGR 2300 – Introduction to Engineering Thermodynamics (3 crs.)

Mathematics Requirements (6 Courses, 19 Credits):

CS 1200 -- Introduction to Computing (4 crs)
MAT 1500 – Calculus I (3 crs.)
MAT 1600 – Calculus II (3crs.)
MAT 2100 – Calculus III (3 crs.)

MAT 5500 – Differential Equations (3 crs.)

MAT 5600 – Linear Algebra (3 crs.)

Electives:

DROP: ~~0 to 4 credits sufficient to meet required total of 66 to 70 credits~~

Add: ~~0 credits~~

TOTAL CREDITS: DROP: ~~**66 to 70**~~ ADD: **65**

PROPOSED

A.S. ENGINEERING SCIENCE

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HEGIS: 5609.00

PROGRAM CODE: 87212

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OFFICE LOCATION: S-243 TELEPHONE: (718) 368-5746

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3. demonstrate practical skills in modern laboratory techniques, methods, instrumentation, and data analysis
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Refer to course descriptions for prerequisite, corequisite and/or pre-corequisite requirements

Required Core (4 Courses, 13 Credits):

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ENG 1200 Composition I (3 crs.)

ENG 2400 Composition II (3 crs.)

Mathematical & Quantitative Reasoning Course*

Mathematical & Quantitative Reasoning Course* – MAT 9900 Pre-Calculus (3 crs.)

Life & Physical Sciences Course* - CHM 1100 – General Chemistry I (4 crs.)

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C. Creative Expression Designated Course
D. Individual and Society Designated Course
E. Scientific World Designated Courses*
   PHY 1300 – Advanced General Physics I (4 crs.)
   CHM 1200 – General Chemistry II (4 crs.)

*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.

No more than two courses can be selected from the same discipline

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Additional Degree Requirements:

Physical Science Requirements (4 Courses, 14 Credits):

PHY 1400 – Advanced General Physics II (4 crs.)

EGR 2100 – Engineering Design (3 crs.)

EGR 2200 – Introduction to Electrical Engineering (3 crs.)

EGR 2300 – Introduction to Engineering Thermodynamics (3 crs.)

Mathematics Requirements (6 Courses, 19 Credits):

CS 1200 -- Introduction to Computing (4 crs)

MAT 1500 – Calculus I (3 crs.)

MAT 1600 – Calculus II (3crs.)

MAT 2100 – Calculus III (3 crs.)

MAT 5500 – Differential Equations (3 crs.)

MAT 5600 – Linear Algebra (3 crs.)

Electives:

0 credits sufficient to meet required total of 65 credits

TOTAL CREDITS: 65