

The City University of New York  
CURRICULUM DATA TRANSMITTAL SHEET

DEPARTMENT: **PHYSICAL SCIENCES**

DATE: **Spring 2019**

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

Change(s) Initiated: (Please Check)

- |                                                   |                                                                                  |
|---------------------------------------------------|----------------------------------------------------------------------------------|
| <input type="checkbox"/> Closing of Degree        | <input checked="" 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 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 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:



Signature, Department Chair:



Date: *3/14/19*

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:

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. Physics**

**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 Science Requirements:**

CHM 1100 – General Chemistry I (4 crs.)

CHM 1200 – General Chemistry II (4 crs.)

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

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

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

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

One of the following:

EPS 3100 – Meteorology (4 crs.) OR

EPS 3200 – Oceanography (4 crs.) OR

EPS 3600 – Planetology: A Trip Through the Solar System (4 crs.) OR

EPS 3300 – Physical Geology (4 crs.) OR

EPS 3500 – Introduction to Astronomy (4 crs.) OR

EPS 3600 – Planetology: A Trip Through the Solar System (4 crs.)

One of the following:

**26 credits**

**Mathematics Requirements:**

Three 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); [Recommended]

MAT 1600 Calculus II (3 crs); [Recommended]

MAT 2100 Calculus III (3 crs); [Recommended]

MAT 5500 Differential Equations (3 crs);

MAT 5600 Linear Algebra (3 crs);

**09 credits**

**Advanced Elective Credits** in CHM, CS, EGR, EPS, MAT, PHY, or SCI (7 crs.)

**07 credits**

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**Total 60 credits**

## AS Physics Degree Map

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

<p><b><u>Semester 1 (16 Credits)</u></b></p> <ul style="list-style-type: none"> <li>• CHM11 Chemistry I 4 crs.</li> <li>• ENG12 English Composition I 3 crs.</li> <li>• MAT [MAT 14 Recommended] 3 crs.</li> <li>• Group A or B or C or D 3 crs.</li> <li>• Group A or B or C or D 3 crs.</li> </ul>	<p><b><u>Semester 2 (14 Credits)</u></b></p> <ul style="list-style-type: none"> <li>• CHM12 -Chemistry II 4 crs.</li> <li>• ENG24 -English Composition II 3 crs.</li> <li>• MAT [MAT 15 Recommended] 3 crs.</li> <li>• PHY13 -Advanced Physics I 4 crs.</li> </ul>
<p><b><u>Semester 3 (14 credits)</u></b></p> <ul style="list-style-type: none"> <li>• PHY14 Advanced Physics II 4 crs.</li> <li>• EPS 31, 32, 33, 35 or 36 4 crs.</li> <li>• MAT [MAT 16 Recommended] 3 crs.</li> <li>• Group A or B or C or D 3 crs.</li> </ul>	<p><b><u>Semester 4 (16 credits)</u></b></p> <ul style="list-style-type: none"> <li>• EGR 22 OR EGR23 ..... 3 crs.</li> <li>• MAT [MAT 21 Recommended] 3 crs.</li> <li>• Group A or B or C or D 3 crs.</li> <li>• Advanced Elective Credits in CHM, CS, EGR, EPS, MAT, PHY, or SCI 7 crs.</li> </ul>

Add/Delete/Change	<b>A.S. PHYSICS</b>	
	HEGIS: 5619.00	
	PROGRAM CODE: 01042	
	<b>CUNY CORE</b>	<b>CREDITS</b>
<b>CHANGE</b>	<b>REQUIRED CORE:</b> (4 Courses, 44 13 Credits)	<b>44 13</b>
	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*:	4
	Mathematical and Quantitative Reasoning*:	04 3
<b>ADD</b>	<b>MAT 900 - College Algebra or</b>	
<b>ADD</b>	<b>MAT 9A0 - Algebra for STEM Majors or</b>	
<b>ADD/CHANGE (CREDITS)</b>	<b>MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics or</b>	
<b>CHANGE (CREDITS)</b>	<b>MAT 1500 - Calculus I</b>	
	Life and Physical Sciences*:	4
	CHM 1100 - General Chemistry I	
	<b>FLEXIBLE CORE:</b> (6 Courses, 20 Credits)	<b>20</b>
	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*:	
<b>DELETE</b>	<del>MAT 1600 - Calculus II</del>	
	CHM 1200 - General Chemistry II	
<b>ADD</b>	<b>PHY 1300 - Advanced General Physics I</b>	
<b>CHANGE</b>	<b>DEPARTMENT REQUIREMENTS</b> (5 to 6- 8 Courses, 16 to 19 26 to 27 Credits)	<b>16-19 26-27</b>
<b>DELETE</b>	<del>PHY 1300 - Advanced General Physics I</del>	<del>04</del>
<b>DELETE</b>	<del>PHY 1400 - Advanced General Physics II</del>	<del>04</del>
<b>DELETE</b>	<b>AND</b>	
<b>DELETE</b>	Advanced Electives (8 to 11 credits):	
<b>DELETE</b>	<b>Select only ONE, Either</b>	

DELETE	MAT 5500 — Differential Equations (3 crs.) or	3
DELETE	MAT 5600 — Linear Algebra (3 crs.)	3
DELETE	<b>OR</b>	
DELETE	<b>Select only ONE, Either</b>	
DELETE	EGR 2200 — Introduction to Electrical Engineering (3 crs.) or	3
DELETE	EGR 2300 — Introduction to Engineering Thermodynamics (3 crs.)	3
DELETE	<b>OR</b>	
DELETE	<b>Select only ONE, Either</b>	
DELETE	EPS 3300 — Physical Geology (4 crs.) or	04
DELETE	EPS 3500 — Introduction to Astronomy (4 crs.) or	04
DELETE	EPS 3600 — Planetology: A Trip Through the Solar System (4 crs.)	04
DELETE	<b>OR</b>	
DELETE	PHY 81XX — Independent Study (1 to 3 crs.)	1-3
ADD	<b>Additional Physical Sciences Requirements (4 Courses, 14 Credits)</b>	
ADD	PHY 1400 — Advanced General Physics II	4
ADD	EGR 2200 — Introduction to Electrical Engineering (3 crs.) or	3
ADD	EGR 2300 — Introduction to Engineering Thermodynamics (3 crs.)	3
ADD	<b>Select one (1) from the following:</b>	
ADD	EPS 3100 - Meteorology	
ADD	EPS 3200 - Oceanography	
ADD	EPS 3300 - Physical Geology	
ADD	EPS 3500 - Introduction to Astronomy	
ADD	EPS 3600 - Planetology: A Trip Through the Solar System	
ADD	EPS 3800 - Introduction to Earth Science	
ADD	<b>Additional Mathematics Requirements (2 Courses, 6 Credits)</b>	6
ADD	<b>Select Two (2) additional courses beyond the Mathematical and Quantitative Reasoning (MQR) course from the following:</b>	
ADD	MAT 1000 - College Trigonometry <sup>^</sup>	
ADD	MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics (Recommended)	
ADD	MAT 1500 - Calculus I (Recommended)	
ADD	MAT 1600 - Calculus II (Recommended)	
ADD	MAT 2100 - Calculus III	
ADD	MAT 5500 - Differential Equations	
ADD	MAT 5600 - Linear Algebra	

ADD	Additional Science and Mathematics Electives (2 Courses, 6 - 7 Credits)	6 -7
ADD	Elective Credits in CHM, CS, EGR, EPS, MAT, PHY, or SCI	
CHANGE	<u>ELECTIVES:</u> 7-10 0 - 1credits sufficient to meet the required total 60 credits for the degree.	7-10 0 - 1
	<u>TOTAL CREDITS:</u> 60	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.	
ADD	<sup>^</sup> Depending on Math placement, students may be required to select MAT 1000	

<b>Add/Delete/Change</b>	<b>A.S. PHYSICS</b>	
	HEGIS: 5619.00	
	PROGRAM CODE: 01042	
	<b>CUNY CORE</b>	<b>CREDITS</b>
	<b>REQUIRED CORE: (4 Courses, 13 Credits)</b>	<b>13</b>
	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*:	4
	Mathematical and Quantitative Reasoning*:	3
	<b>MAT 900 - College Algebra or</b>	
	<b>MAT 9A0 - Algebra for STEM Majors or</b>	
	<b>MAT 1400 - Analytic Geometry and Pre-Calculus Mathematics or</b>	
	MAT 1500 – Calculus I	
	Life and Physical Sciences*:	4
	CHM 1100 - General Chemistry I	
	<b>FLEXIBLE CORE: (6 Courses, 20 Credits)</b>	<b>20</b>
	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	
	<b>DEPARTMENT REQUIREMENTS (8 Courses, 26 to 27 Credits)</b>	<b>26-27</b>
	<b>Additional Physical Sciences Requirements (4 Courses, 14 Credits)</b>	
	PHY 1400 – Advanced General Physics II	4
	EGR 2200 – Introduction to Electrical Engineering (3 crs.) or	3
	EGR 2300 – Introduction to Engineering Thermodynamics (3 crs.)	3
	Select one (1) from the following:	



	EPS 3100 - Meteorology	
	EPS 3200 - Oceanography	
	EPS 3300 - Physical Geology	
	EPS 3500 - Introduction to Astronomy	
	EPS 3600 - Planetology: A Trip Through the Solar System	
	EPS 3800 - Introduction to Earth Science	
	<b>Additional Mathematics Requirements (2 Courses, 6 Credits)</b>	<b>6</b>
	<b>Select Two (2) additional courses beyond the Mathematical and Quantitative Reasoning (MQR) course from the following:</b>	
	MAT 1000 - College Trigonometry <sup>^</sup>	
	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	
	<b>Additional Science and Mathematics Electives (2 Courses, 6 - 7 Credits)</b>	<b>6 - 7</b>
	<b>Elective Credits in CHM, CS, EGR, EPS, MAT, PHY, or SCI</b>	
	<b><u>ELECTIVES:</u> 0 - 1 credits sufficient to meet the required total 60 credits for the degree.</b>	<b>0 - 1</b>
	<b>TOTAL CREDITS: 60</b>	<b>60</b>
	*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.	
	<sup>^</sup> Depending on Math placement, students may be required to select MAT 1000	