

MONTHLY REPORT: FEBRUARY 2024 - COMMITTEE ON CURRICULUM

To: Steven Dahlke, Academic Senate Steering Committee

From: Isabella Lizzul, February 27th, 2024

Subject: Committee on Curriculum February 2024 Monthly Report for the March 2024 Senate

CC: College Archives (CWilliams@qcc.cuny.edu)

At its February 27th meeting, the Committee on Curriculum voted to send the following recommendations and notices to the Academic Senate:

3 new course proposals

1 Certificate Program

2 program revisions

2 course revisions

1. New Course

DEPARTMENTS OF CHEMISTRY AND PHYSICS

Departmental approval date: Chemistry February 16th, 2024, Physics February 13th, 2024

RAD-101 Radiation Safety I

3 Class Hours / 2 Laboratory Hours 4 Credits

Pre-requisites None

Co-requisite: CH 151

10. Course Description for College Catalog:

The course provides students with fundamental knowledge of sources of ionizing radiation, radiation safety, radiation detection, and applications of ionizing radiation in the medical field, research, industry, and elsewhere through traditional lecture and laboratory experiences at the college, as well as with guest seminars from reputable experts. Course topics include: atomic structure; types of radioactive decay; half-life; nuclear reactions and equations; machine production of x rays and radionuclides; interactions between radiation and matter; biological effects and risks of radiation; shielding and atmospheric dispersion; ALARA principles; applications of radioisotopes in nuclear medicine; radiation units and conversion factors; dose units and thresholds; fundamental principles of radiation detection and measurements; calibration and operation of basic electronic laboratory instrumentation.

11. Rationale: Why the course is needed or desired.

This course is designed to address the unmet need for skilled workers in nuclear safety and radiation safety for various stakeholders, such as the healthcare sector, Health Physics careers, and the U.S. Department of Energy National Laboratories and National Nuclear Security Administration. It will include a lecture component that introduces students to the fundamental principles of radioactivity, radiation detection, and radiation protection, as well as a hands-on laboratory component to facilitate learning, develop practical expertise, and support transition into the workforce.

12. Course categories, outcomes, and attributes (Place an “X” in the appropriate box)

Syllabus clearly articulates: (General education and course level are mandatory)

...general education outcomes supported by this course

Yes*	No
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<input checked="" type="checkbox"/>	<input type="checkbox"/>
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...program outcomes supported by this course

<input checked="" type="checkbox"/>	<input type="checkbox"/>
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...course-specific student learning outcomes supported by this course

<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Yes	No
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Common Core Course:

Requirement for the Major:

Elective for the Major:

Liberal Arts and Sciences:

Writing Intensive:

Experimental course

*If you intend to offer this course in the CUNY Common Core, you will need to submit for approval the Common Core Course Submission Form & Syllabus to Dr. A. Corradetti. There are two deadlines each semester for submission.

13. Academic Programs into which the course would be incorporated and the requirements it will satisfy:

Certificate in Radiation Safety – Major Requirement
 Liberal Arts and Sciences (Math and Science) A.S. degree (LS-AS) – Elective

14. Transferability as an elective or course required by a major to senior colleges (with supporting documents if applicable). Include comparable courses at senior or other community colleges, if applicable:

The physics department will use the course as part of a wider medical-physics curriculum under development. Other CUNY related courses include Lehman College’s course in Medical Physics (PHY215), Bronx Community College’s Radiation Physics and Dosimetry (NMT83), and Radiation Physics (RAD71). The Chemistry dept. will be seeking to develop articulations with Hunter College (since they have an undergraduate radiochemistry course and a graduate radiochemistry program) and Lehman College (where a new program in radioisotope generation is being developed in collaboration with BNL).

15. Faculty available with expertise to teach this course:

	Instructor 1	Instructor 2	Instructor 3
Name (Chemistry):	Sharon Lall-Ramnarine	Paul Sideris	
Name (Physics):	Rex Taibu	Sunil Dehipawala	Raul Armendariz
Degree:	Ph.D., Ph.D.	Ph.D., Ph.D.	Ph.D.

16. Facilities and technologies required:

A lecture classroom and laboratory space are required. We will utilize existing lecture and lab rooms in the chemistry and physics departments. The following equipment are needed and will be purchased by the grant that supports the development of the radiation safety certificate program: Friskers and other Geiger counters, Identifinders, Dosimeters, alpha, beta, and gamma coin sources, Ba-137m isotope generator kits, Thermoluminescent dosimeters.

17. List of courses to be withdrawn, or replaced by this course, if any:

Not applicable

18. Enrollment limit and frequency the course will be offered (each semester, once a year, or alternating years):

This course will be offered every year in the fall semester. The maximum enrollment will be 20 students. The course may be offered in other semesters if there is a demand.

19. What changes in any programs will be necessitated or requested as a result of this course's additions/charges:

Development of a new certificate in Radiation Safety
Addition of the two courses to the LS-AS degree program

GLOSSARY OF TERMS

Entry-level course	A credit course with no pre-requisites other than passing placement exams or required remediation; usually considered a first semester course; this course may be a pre-requisite for mid-level courses
Mid-level course	A course which has at least one credit course as a pre-requisite; usually a second or third semester course; this course may be a pre-requisite for upper-level courses
Upper-level course	A course, usually taken in the third or fourth semester, which has several credit course pre-requisites
(Student) Learning outcomes	An explicit statement of the competencies (knowledge and skills) a student is expected to demonstrate either in general education, in an academic program or in a course
General education outcomes	The knowledge, skills, attitudes, and values that a student completing an Associate Degree will demonstrate.
Academic Program learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a program of study.
Course learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a course.

1. Department Chemistry and Physics

2. **Course, prefix, number, & title:** RAD-101 Radiation Safety I
3. **Hours (Class, recitation, Laboratory, studio) & Credits:** 3 class hours, 2 laboratory hours, 4 credits
4. **Pre-requisites (if any):**
- Co-requisites (if any):** CH-151

5. **Course Description in college catalog:**

The course provides students with fundamental knowledge of sources of ionizing radiation, radiation safety, radiation detection, and applications of ionizing radiation in the medical field, research, industry, and elsewhere through traditional lecture and laboratory experiences at the college, as well as with guest seminars from reputable experts. Course topics include: atomic structure; types of radioactive decay; half-life; nuclear reactions and equations; machine production of X rays and radionuclides; interactions between radiation and matter; biological effects and risks of radiation; shielding and atmospheric dispersion; ALARA principles; applications of radioisotopes in nuclear medicine; radiation units and conversion factors; dose units and thresholds; fundamental principles of radiation detection and measurements; calibration and operation of basic electronic laboratory instrumentation.

6. **Academic programs for which this course is required:**

Certificate in Radiation Safety – Major Requirement
 Liberal Arts and Sciences (Math and Science) A.S. degree (LS-AS) – Elective

7. **General Education Outcomes: Place an “X” in the appropriate General Education Outcome(s) box that this course supports.**

- 1. Communicate effectively in various forms
- 2. Use analytical reasoning to identify issues or problems and evaluate evidence in order to make informed decisions
- 3. Reason quantitatively as required in various fields of interest and in everyday life
- 4. Apply information management and digital technology skills useful for academic research and lifelong learning

If applicable, check the appropriate program level outcome(s)

- A. Integrate knowledge and skills in the program of study
- B. Make ethical judgments while recognizing multiple perspectives, as appropriate in the program of study
- C. Work collaboratively to accomplish learning objectives

8. **Course-specific student learning outcomes: (Expand if needed)**

a	Develop a fundamental understanding of radiation and radioactive decay.
b	Explain the interaction of radiation with matter.
c	Describe shielding materials used for radiation protection.
d	Express and interpret the amount of radiation in different units.
e	Describe the principles behind various detectors used for radiation counting.
f	Develop a fundamental understanding of sources of background radiation.
g	Understand the diagnostic and therapeutic applications of radioisotopes in medicine.
h	Recall major regulations and federal guidelines related to radiation protection.
i	
j	

9. **Program-specific outcomes (if applicable)**

- a. Develop a thorough understanding of ionizing radiation: sources, detection and protection through shielding and containment.
- b. Develop proficiency in the selection, calibration and use of state-of-the-art survey equipment currently utilized in the field by radiation safety professionals.
- c. Proficiency in radiological surveys of areas to determine the release and identity of materials.
- d. Assess survey results to make informed decisions about the quality of the data.
- e. Use knowledge of radiation safety regulations to be able to enforce workplace safety.

10. Methods by which student learning (general education, course-specific, and, if applicable program specific) will be assessed and evaluated; describe the types of methods to be employed; note whether certain methods are required for all sections):

Course-specific learning objectives will be assessed and evaluated through in-class lecture examinations that are composed of multiple-choice and short-answer questions. General education outcomes will be assessed using formal laboratory reports that will be assigned for each experiment that is conducted. Student artifacts from all lecture and laboratory sections will be used for assessment.

11. Course topics and assignments (include laboratory topics when applicable)

Week	Topics	Sample Assignments (if applicable, Blackboard/Online)
1.	<p>Lecture: Radiation Basics - What is Radiation? The Electromagnetic Spectrum and ionizing radiation. Facilities that produce ionizing radiation at National Laboratories. What do Radiation Safety Professionals do? (Virtual guest speaker from Brookhaven National Lab).</p> <p>Lab 1: Safety Training - working safely with radioactive materials.</p>	<p>Lecture: Post lecture assignment on the meaning of natural radioactivity, background radioactivity, wavelength and frequency. Problems reviewing the relationship between energy and wavelength, as well as energy and frequency.</p> <p>Lab: Radiation Safety Quiz will be administered.</p>
2.	<p>Lecture: Atomic Structure - Structure of the Atom; Isotopic abundance and Notation.</p> <p>Lab 2: Case study (Goiania, Harborview Incidents)</p>	<p>Lecture: Post lecture assignment on completing equations for nuclear reactions and analyzing isotopic notation to determine protons, neutrons and electrons. Example: U-238, U-235</p> <p>Lab: Written Report on the analysis and discussion of a radiation contamination incident that occurred in Goiania Brazil (1987), or the Harborview Research and Training Building in Seattle (2019). The report should summarize what is known about the incident, the radioactive materials involved, failures or missteps that resulted in the contamination of individuals or the environment and appropriate actions required by federal regulations, with citations of sources where appropriate.</p>

<p>3.</p>	<p>Lecture: Fundamentals of Radioactivity: Types of Radioactive Decay and Sources of Background Radiation. Quiz 1 Lab 3: Radiation Detection in Everyday Items Part I: Using a Geiger Counter. Review of lab report format and rubric.</p>	<p>Lecture: Post lecture exercise identifying the origin of the radiation, the radionuclides involved, their decay pathway and the contribution to exposure. Lab: Complete and submit pre-lab questions based on the theory of the experiment. Submit a written lab report containing title of the experiment, objective, introduction, materials and methods, results and calculations, discussion, and conclusion.</p>
<p>4.</p>	<p>Lecture: Quantification of Radiation: SI Units and Math Review Lab 4: Radiation Detection in Everyday Items Part II: Using an Identifinder.</p>	<p>Lecture: Post lecture assignment on unit conversion. Lab: Complete and submit pre-lab questions based on the theory of the experiment. Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion and answers to post laboratory questions if applicable.</p>
<p>5.</p>	<p>Lecture: Review Lab 5: Locating and Identifying an unknown source of radiation. Exam 1</p>	<p>Lecture: Review Weeks 1-4 Lab: Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion and answers to post laboratory questions if applicable.</p>
<p>6.</p>	<p>Lecture: Reducing Exposure to Radiation Part I: Time, Distance, Shielding Effects. ALARA Principles. Lab 6: Count Rates and the Inverse Square Law</p>	<p>Lecture: Post lecture exercise on the effects of distance and shielding on radiation. Lab: Complete and submit pre-lab questions based on the theory of the experiment. Plot a graph of radiation versus distance (d) and radiation versus $1/d^2$. Determine the effect of distance on radiation counts.</p>
<p>7.</p>	<p>Lecture: Radioisotopes used in Nuclear Medicine Lab 7: Reducing Exposure to Radiation Part II: Type and density of shields.</p>	<p>Lecture: Report on 4-6 radioisotopes used in medicine, what they are used to diagnose/treat, what type of emitters they are, their half-lives and nuclear equations. Lab: Submit a written lab report for Parts I and II containing clearly labeled sections</p>

		with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion and answers to post laboratory questions.
8.	<p>Lecture: Radioactivity and Half-life. Generation and isolation of radionuclides.</p> <p>Lab 8: Calibration of a Digital Survey Meter</p> <p>Quiz 2</p>	<p>Lecture: Post lecture assignment using the concept of half-life to calculate the amount of radioactive material that remains after a given time.</p> <p>Lab: Complete and submit pre-lab questions based on the theory of the experiment.</p> <p>Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion and answers to post laboratory questions if applicable.</p>
9.	<p>Lecture: Biological Effects of Radiation</p> <p>Lab 9: Experimental Determination of the Half-life of Ba-137m</p>	<p>Lecture: Post lecture assignment on the meanings of radiosensitive and radioresistant; effects of radiation on cell structures; factors that affect the radiosensitivity of cells; the risks of radiation exposure to the developing embryo and fetus.</p> <p>Lab: Complete and submit pre-lab questions based on the theory of the experiment.</p> <p>Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion and answers to post laboratory questions if applicable.</p>
10.	<p>Lecture: Review</p> <p>Lab 10: Case Study / Virtual tour of a Medical Isotope Research and Production Department (e.g. at Brookhaven National Laboratory)</p>	<p>Lecture – Review Weeks 6-9</p> <p>Lab: Submit a written report on radioisotopes generated at a facility (e.g. BNL) including how/what facilities are used to generate them, their half-lives how they are isolated and what they are used for.</p>

	Exam 2	
11.	<p>Lecture: Radiation Detectors and Equipment Calibration</p> <p>Lab 11: Calibration of an Indentifinder (e.g. Virtual Lab with Brookhaven National Laboratory Scientist)</p>	<p>Lecture: Post lecture assignment on the meaning of resolving time, dead time, and recovery time. How gas filled and scintillator detector works.</p> <p>Lab: Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion, and conclusion.</p>
12.	<p>Lecture: Radiation Detection - Solid Angle and Scattering Effects</p> <p>Lab 12: Effects of Solid Angle and Scattering on Radiation Detection</p> <p>Quiz 3</p>	<p>Lecture: Complete the worksheet on the correct positioning of the Geiger counter for surveys and the anticipated effects of various scattering phenomena on the signal.</p> <p>Lab: Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion.</p>
13.	<p>Lecture: Dosimetry – Introduction, Quantification and Units</p> <p>Exam 3</p> <p>Lab 13: Measurement of Gamma Ray Dose</p>	<p>Lecture: Post lecture assignment converting radiation counts to dose.</p> <p>Lab: Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion.</p>
14.	<p>Lecture: Federal Compliance Rules and Regulations</p> <p>Review for final exam</p> <p>Lab 14: Choosing the correct dosimeter</p>	<p>Lecture: Post lecture assignment workplace dependent compliance rules.</p> <p>Lab: Submit a written lab report comparing and contrasting the different dosimeters from the previous labs.</p>
15.	<p>Lecture: Final Examination</p> <p>Lab 15: Lab Final</p>	

12. Sample texts/readings/bibliography/other materials required or recommended for the course (as applicable):

- 1) Johnson, T.E., Radiation Protection: The Essential Guide for Technologists, 2020. ISBN 192916906X, 9781929169061
- 2) Turner, James E., Atoms, Radiation, and Radiation Protection, Wiley - VCH Verlag GmbH & Co. KGaA, 2007. Print ISBN:9783527406067 |Online ISBN:9783527616978
- 3) The Department of Energy (DOE) Handbook in Radiological Control Technician Training (DOE-HDBK-1122-99).
- 4) Ehmann, William D., and Diane E. Vance. Radiochemistry and Nuclear Methods of Analysis. Rev.ed., Wiley-Interscience, 1993. ISBN-10:0471306282, ISBN-13:9780471306283
- 5) <https://www.nrc.gov/>
- 6) <https://www-nds.iaea.org/>
- 7) <https://www.epa.gov/radiation>

13. Required attire (if applicable):

Students in the laboratory are required to wear personal protective equipment such as laboratory coats, safety goggles or glasses, and, when applicable, gloves.

14. Academic Integrity policy (department or College):

Academic honesty is expected of all students. Any violation of academic integrity is taken extremely seriously. All assignments and projects must be the original work of the student or teammates. **Plagiarism will not be tolerated.** Any questions regarding academic integrity should be brought to the attention of the instructor. The CUNY Queensborough Community College Policy on Academic Integrity can be found here: <https://www.qcc.cuny.edu/sco/academic-integrity.html>

16. Disabilities

Any student who feels that he or she may need an accommodation based upon the impact of a disability should contact the Office of Accessibility Services in Science Building, Room S-132, 718-631-6257, to coordinate reasonable accommodations for students with documented disabilities. You can visit the Office of Accessibility Services website by clicking: <https://www.qcc.cuny.edu/oas/>.

OPTIONAL (May be included by instructors.)

Student Life, Services: <http://www.qcc.cuny.edu/current-students/index.html>

Single Stop: <http://www.qcc.cuny.edu/singlestop/index.html>

Counseling: <http://www.qcc.cuny.edu/counseling/index.html>

GLOSSARY OF TERMS

Entry-level course	A credit course with no pre-requisites other than passing placement exams or required remediation; usually considered a first semester course; this course may be a pre-requisite for mid-level courses
Mid-level course	A course which has at least one credit course as a pre-requisite; usually a second or third semester course; this course may be a pre-requisite for upper-level courses
Upper-level course	A course, usually taken in the third or fourth semester, which has several credit course pre-requisites
(Student) Learning outcomes	An explicit statement of the competencies (knowledge and skills) a student is expected to demonstrate either in general education, in an academic program or in a course

General education outcomes	The knowledge, skills, attitudes, and values that a student completing an Associate Degree will demonstrate.
Academic Program learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a program of study.
Course learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a course.

2. New Course

DEPARTMENTS OF CHEMISTRY AND PHYSICS

Departmental approval date: Chemistry February 16th, 2024, Physics February 13th, 2024

RAD-102 Radiation Safety II

3 Class Hours / 2 Laboratory Hours 4 Credits

Pre-requisites RAD- 101

Co-requisite: PH- 301

10. Course Description for College Catalog:

The course provides students with an in-depth understanding of radiation exposure, detection, measurement, control, protection, and regulations. Course topics will include how detectors work, gas-filled, scintillation, and semiconductor laboratory detectors, survey/field instruments, personnel dosimeters, wipe testing, internal and external dosimetry and thresholds, risk communication, an overview of regulations and methods for monitoring workplace and the environment, record-keeping requirements, waste management, transportation, emergency response, decontamination, and contamination control.

11. Rationale: Why the course is needed or desired.

This course is designed to address the unmet need for skilled workers in nuclear safety and radiation safety for various stakeholders, such as the healthcare sector, Health Physics careers, and the U.S. Department of Energy National Laboratories and National Nuclear Security Administration. It will include a lecture component that introduces students to the fundamental principles of radioactivity, radiation detection, and radiation protection, as well as a hands-on laboratory component to facilitate learning, develop practical expertise, and support transition into the workforce.

12. Course categories, outcomes, and attributes (Place an "X" in the appropriate box)

Syllabus clearly articulates: (General education and course level are mandatory)

...general education outcomes supported by this course

...program outcomes supported by this course

...course-specific student learning outcomes supported by this course

Yes*	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Yes	No
Common Core Course:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Requirement for the Major:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Elective for the Major:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liberal Arts and Sciences:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Writing Intensive:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Experimental course	<input type="checkbox"/>	<input checked="" type="checkbox"/>

*If you intend to offer this course in the CUNY Common Core, you will need to submit for approval the Common Core Course Submission Form & Syllabus to Dr. A. Corradetti. There are two deadlines each semester for submission.

13. Academic Programs into which the course would be incorporated and the requirements it will satisfy:

Certificate in Radiation Safety – Major Requirement
 Liberal Arts and Sciences (Math and Science) A.S. degree (LS-AS) – Elective

14. Transferability as an elective or course required by a major to senior colleges (with supporting documents if applicable). Include comparable courses at senior or other community colleges, if applicable:

The physics department will use the course as part of a wider medical-physics curriculum under development. Other CUNY related courses include Lehman College’s course in Medical Physics (PHY215), Bronx Community College’s Radiation Physics and Dosimetry (NMT83), and Radiation Physics (RAD71). The Chemistry dept. will be seeking to develop articulations with Hunter College (since they have an undergraduate radiochemistry course and a graduate radiochemistry program) and Lehman College (where a new program in radioisotope generation is being developed in collaboration with BNL).

15. Faculty available with expertise to teach this course:

	Instructor 1	Instructor 2	Instructor 3
Name (Chemistry):	Sharon Lall-Ramnarine	Paul Sideris	
Name (Physics):	Rex Taibu	Sunil Dehipawala	Raul Armendariz
Degree:	Ph.D., Ph.D.	Ph.D., Ph.D.	Ph.D.

16. Facilities and technologies required:

A lecture classroom and laboratory space are required. We will utilize existing lecture and lab rooms in the chemistry and physics departments. The following equipment are needed and will be purchased by the grant that supports the development of the radiation safety certificate program: Friskers and other Geiger counters, Identifinders, Dosimeters, alpha, beta, and gamma coin sources, Ba-137m isotope generator kits, Thermoluminescent dosimeters.

17. List of courses to be withdrawn, or replaced by this course, if any:

Not applicable

18. Enrollment limit and frequency the course will be offered (each semester, once a year, or alternating years):

This course will be offered every year in the Spring semester. The maximum enrollment will be 20 students. The course may be offered in other semesters if there is a demand.

19. What changes in any programs will be necessitated or requested as a result of this course's additions/charges:

Development of a new certificate in Radiation Safety
Addition of the course to the LS-AS degree program

GLOSSARY OF TERMS

Entry-level course	A credit course with no pre-requisites other than passing placement exams or required remediation; usually considered a first semester course; this course may be a pre-requisite for mid-level courses
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Course learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a course.

1. **Department** Chemistry and Physics
2. **Course, prefix, number, & title:** RAD-102 Radiation Safety II
3. **Hours (Class, recitation, Laboratory, studio) & Credits:** 3 class hours, 2 laboratory hours, 4 credits
4. **Pre-requisites (if any):** RAD-101
Co-requisites (if any): PH-301
5. **Course Description in college catalog:** _____

The course provides students with an in-depth understanding of radiation exposure, detection, measurement, control, protection, and regulations. Course topics will include how detectors work, gas-filled, scintillation, and semiconductor laboratory detectors, survey/field instruments, personnel dosimeters, wipe testing, internal and external dosimetry and thresholds, risk communication, an overview of regulations and methods for monitoring workplace and the environment, record-keeping requirements, waste management, transportation, emergency response, decontamination, and contamination control.

6. Academic programs for which this course is required:

Certificate in Radiation Safety – Major Requirement
 Liberal Arts and Sciences (Math and Science) A.S. degree (LS-AS) – Elective

7. General Education Outcomes: Place an “X” in the appropriate General Education Outcome(s) box that this course supports.

- 1.Communicate effectively in various forms
- 2.Use analytical reasoning to identify issues or problems and evaluate evidence in order to make informed decisions
- 3.Reason quantitatively as required in various fields of interest and in everyday life
- 4.Apply information management and digital technology skills useful for academic research and lifelong learning

If applicable, check the appropriate program level outcome(s)

- A. Integrate knowledge and skills in the program of study
- B. Make ethical judgments while recognizing multiple perspectives, as appropriate in the program of study
- C. Work collaboratively to accomplish learning objectives

8. Course-specific student learning outcomes: (Expand if needed)

a	Develop an understanding of instrumental error and detector efficiency
b	Become proficient in the selection of equipment for radiological surveys
c	Estimate dosage rates in various scenarios involving various emitters and shielding materials
d	Conduct routine personnel monitoring for contamination and basic radiological surveys
e	Understand radiological monitoring programs
f	Demonstrate knowledge of the decommissioning process and the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)
g	
h	
i	
j	

9. Program-specific outcomes (if applicable)

- a. Develop a thorough understanding of ionizing radiation: sources, detection and protection through shielding and containment.
- b. Develop proficiency in the selection, calibration and use of state-of-the-art survey equipment currently utilized in the field by radiation safety professionals.
- c. Proficiency in radiological surveys of areas to determine the release and identity of materials.
- d. Assess survey results to make informed decisions about the quality of the data.
- e. Use knowledge of radiation safety regulations to be able to enforce workplace safety.

10. Methods by which student learning (general education, course-specific, and, if applicable program specific) will be assessed and evaluated; describe the types of methods to be employed; note whether certain methods are required for all sections):

Course-specific learning objectives will be assessed and evaluated through in-class lecture examinations that are composed of multiple-choice and short-answer questions. General education outcomes will be assessed using formal laboratory reports that will be assigned for each experiment that is conducted. Student artifacts from all lecture and laboratory sections will be used for assessment.

11. Course topics and assignments (include laboratory topics when applicable)

Week	Topics	Sample Assignments (if applicable, Blackboard/Online)
1.	<p>Lecture: Review of the types of radiation, interaction of radiation with matter, and radiation detection fundamentals</p> <p>Lab: Check-in and Safety Review for Radioactive materials</p>	<p>Lecture: Post lecture assignment reviewing basic properties of alpha, beta, and gamma radiation, isotopic notation, nuclear decay chains/pathways.</p> <p>Lab: Safety Quiz</p>
2.	<p>Lecture: Comparison of detectors: design and principles of operation</p> <p>Lab: Construction of a Simple Cloud Chamber to Detect Charged Particles</p>	<p>Lecture: Post-lecture assignment on the contrasting the main design features of gas-filled detectors and scintillators and their method of detection</p> <p>Lab: Submit a written summary of how to assemble the simple cloud chamber and your observations with and without a radioactive source inside. Answer the post-laboratory questions regarding the “tracks” that become visible.</p>
3.	<p>Lecture: Counting statistics and uncertainty, error and error propagation</p> <p>Lab: Data Analysis Lab: Gaussian and Poisson Distributions</p> <p>Quiz 1</p>	<p>Lecture: Post lecture assignment on counting errors due to detector resolving time, back-scatter, and sample self-absorption.</p> <p>Lab: Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion and answers to post laboratory questions if applicable.</p> <p>Plot and fit the background and source counts with Gaussian and Poisson distributions. Determine the average value and the standard deviation.</p>
4.	<p>Lecture: Review</p>	<p>Lecture: Review Weeks 1-4</p>

	<p>Exam 1</p> <p>Lab: Determination of Geiger Tube Efficiency</p>	<p>Lab: Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion and answers to post laboratory questions if applicable.</p>
5.	<p>Lecture: Dosimetry – Exposure and Absorbed Dose</p> <p>Lab 13: Determining Radiation Dose Over Time with a Thermoluminescent Detector (TLD)</p>	<p>Lecture: Post lecture assignment on researching allowable exposure limits of radiation</p> <p>Lab: Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion.</p>
6.	<p>Lecture: Dosimetric Models, Organ Activities, Specific Absorbed Fraction, Specific Effective Energy, and Committed Quantities</p> <p>Quiz 2</p> <p>Lab: Estimations of Dose in a Phantom via Thermoluminescent dosimeters (TLDs)</p>	<p>Lecture: Post lecture assignment on the fundamentals of internal exposure, dosimetry and the annual limits for various types of exposure.</p> <p>Lab: Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion and answers to post laboratory questions if applicable.</p>
7.	<p>Lecture: Minimum Significant Measured Activity – Type I Errors, Minimum Detectable True Activity – Type II Errors, Instrument Response and Detection Limits</p> <p>Lab: Radiological Control: Personnel Monitoring</p>	<p>Lecture: Post lecture assignment on the origin and estimation of errors associated with radiation counting.</p> <p>Lab: Submit a flowchart for a Frisker procedure for personnel monitoring. Clearly outline how to determine whether radioactive contamination was present. Identify potential issues that arise during the survey using your knowledge of the limitations and error associated with the detector.</p>

8.	<p>Lecture: Shielding Analysis/Design</p> <p>Lab: Calculation of Shielding Exposure Rates</p>	<p>Lecture: Post lecture assignment on the calculation of the expected exposure rate using the half- and tenth-value layers for gamma sources and different shielding materials.</p> <p>Lab: Submit a written lab report containing clearly labeled sections with the title of the experiment, objective, introduction, materials and methods, results, calculations, discussion and conclusion and answers to post laboratory questions if applicable.</p>
9.	<p>Lecture: Review</p> <p>Exam 2</p> <p>Lab: Documentary and Summary</p>	<p>Lecture: Review Weeks 5-8</p> <p>Lab: Write a summary of the documentary shown in lab and identify all the lecture topics that were addressed in the film. What regulations have changed since the events depicted in the movie?</p>
10.	<p>Lecture: Guest lecture (from Brookhaven National Laboratory or other invited speaker) on Instrumentation and Calibration Procedures at the Lab</p> <p>Lab: Virtual Laboratory (from Brookhaven National Laboratory or other remote site) on the Calibration of Equipment Used For Surveys</p>	<p>Lecture: Complete the worksheet on how each major piece of instrumentation mentioned in the lecture is calibrated, maintained, and used. Be sure to include the appropriate instrument for each survey scenario.</p> <p>Lab: Answer the laboratory questions regarding the calibration/counting procedures used by the Radiological Control Division.</p>
11.	<p>Lecture: Particle Generators – Nuclear Reactors</p> <p>Quiz 3</p> <p>Lab: Fission Simulation</p>	<p>Lecture: Complete the post lecture assignment dealing with the basic operation of a reactor and the surveying requirements needed.</p> <p>Lab: Complete the questions on the simulation of fission.</p>
12.	<p>Lecture: Particle Generators – Accelerators, Cyclotrons and Synchrotrons</p> <p>Lab: Case Study: Fukushima Nuclear Accident</p>	<p>Lecture: Complete the worksheet on the fundamental principles of operations of particle accelerators.</p> <p>Lab: Summarize what is known about the Fukushima Nuclear Accident. What were the lessons learned?</p>

13.	<p>Lecture: Review</p> <p>Exam 3</p> <p>Lab: Decontamination Procedures for various Radioisotopes</p>	<p>Lecture: Review Weeks10-13</p> <p>Lab: Complete the worksheet that describes the appropriate procedure to decontaminate the area for the specific radioisotopes.</p>
14.	<p>Lecture: Guest lecture from Brookhaven National Laboratory on Nuclear Waste Management</p> <p>Lab: Action Plan for a Radiological Incident</p>	<p>Lecture: Assignment on identifying the site-specific rules for the procurement, use, and storage of radioactive materials</p> <p>Lab: Complete the worksheet that describes the appropriate action plan for the incidents summarized.</p>
15.	<p>Lecture: Final Examination</p> <p>Lab: Laboratory Final Examination</p>	

12. Sample texts/readings/bibliography/other materials required or recommended for the course (as applicable):

<p>8) Johnson, T.E., Radiation Protection: The Essential Guide for Technologists, 2020. ISBN 192916906X, 9781929169061</p> <p>9) Turner, James E., Atoms, Radiation, and Radiation Protection, Wiley - VCH Verlag GmbH & Co. KGaA, 2007. Print ISBN:9783527406067 Online ISBN:9783527616978</p> <p>10) The Department of Energy (DOE) Handbook in Radiological Control Technician Training (DOE-HDBK-1122-99).</p> <p>11) Ehmann, William D., and Diane E. Vance. Radiochemistry and Nuclear Methods of Analysis. Rev.ed., Wiley-Interscience, 1993. ISBN-10:0471306282, ISBN-13:9780471306283</p> <p>12) https://www.nrc.gov/</p> <p>13) https://www-nds.iaea.org/</p> <p>14) https://www.epa.gov/radiation</p>
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13. Required attire (if applicable):

<p>Students in the laboratory are required to wear personal protective equipment such as laboratory coats, safety goggles or glasses, and, when applicable, gloves.</p>

14. Academic Integrity policy (department or College):

Academic honesty is expected of all students. Any violation of academic integrity is taken extremely seriously. All assignments and projects must be the original work of the student or teammates. **Plagiarism will not be tolerated.** Any questions regarding academic integrity should be brought to the attention of the instructor. The CUNY Queensborough Community College Policy on Academic Integrity can be found here: <https://www.qcc.cuny.edu/sco/academic-integrity.html>

16. Disabilities

Any student who feels that he or she may need an accommodation based upon the impact of a disability should contact the Office of Accessibility Services in Science Building, Room S-132, 718-631-6257, to coordinate reasonable accommodations for students with documented disabilities. You can visit the Office of Accessibility Services website by visiting: <https://www.qcc.cuny.edu/oas/>.

OPTIONAL *(May be included by instructors.)*

Student Life, Services: <http://www.qcc.cuny.edu/current-students/index.html>

Single Stop: <http://www.qcc.cuny.edu/singlestop/index.html>

Counseling: <http://www.qcc.cuny.edu/counseling/index.html>

GLOSSARY OF TERMS

Entry-level course	A credit course with no pre-requisites other than passing placement exams or required remediation; usually considered a first semester course; this course may be a pre-requisite for mid-level courses
Mid-level course	A course which has at least one credit course as a pre-requisite; usually a second or third semester course; this course may be a pre-requisite for upper-level courses
Upper-level course	A course, usually taken in the third or fourth semester, which has several credit course pre-requisites
(Student) Learning outcomes	An explicit statement of the competencies (knowledge and skills) a student is expected to demonstrate either in general education, in an academic program or in a course
General education outcomes	The knowledge, skills, attitudes, and values that a student completing an Associate Degree will demonstrate.
Academic Program learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a program of study.
Course learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a course.

3. New Course

DEPARTMENTS OF FOREIGN LANGUAGES AND LITERATURE

Departmental approval date: February 14th, 2024

LS- 411 Hispanic Avant-Garde in Art and Literature: Challenging Conventional Norms

3 Class Hours / 3 Credits

Pre-requisites ENGL- 101

Co-requisite: None

10. Course Description for College Catalog:

This course examines the Hispanic world's unconventional and innovative art and literature, from the Modernism era to the Avant-garde movements of the 20s and 30s.

Through an in-depth examination of artistic movements that challenged traditional norms and their cultural impact, such as Gaudi's architectural masterpieces, Frida Kahlo's self-portrayals, Buñuel's surrealist films, Garcia Lorca's avant-garde poetry, and Borges short stories, students will analyze the unconventional and innovative art and literature of the Hispanic world. The course places a strong emphasis on developing critical thinking, reading, and writing skills through various assignments, peer review, and revision. The course adheres to Quality Matters standards and offers a dynamic blend of multimedia, discussions, readings, and collaborative learning. By the end of the course, students will have a comprehensive understanding of Hispanic avant-garde art and literature, as well as improved writing skills. This course will be taught in English. This course does not fulfill the foreign language requirement.

11. Rationale: Why the course is needed or desired.

This course promotes enhanced writing and critical thinking through a deep dive into Hispanic avant-garde art and literature. It ensures learner engagement and fosters global awareness, combining quality content with interactive learning experiences to nurture informed, diverse perspectives in a connected world.

12. Course categories, outcomes, and attributes (Place an "X" in the appropriate box)

Syllabus clearly articulates: (General education and course level are mandatory)

...general education outcomes supported by this course

...program outcomes supported by this course

...course-specific student learning outcomes supported by this course

Yes*	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
Yes	No

Common Core Course:

Requirement for the Major:

Elective for the Major:

Liberal Arts and Sciences:

Writing Intensive:

Experimental course

*If you intend to offer this course in the CUNY Common Core, you will need to submit for approval the Common Core Course Submission Form & Syllabus to Dr. A. Corradetti. There are two deadlines each semester for submission.

13. Academic Programs into which the course would be incorporated and the requirements it will satisfy:

Once approved, this course will be submitted to the CUNY Pathways Committee for inclusion in the Flexible Core requirement in World Cultures and Global Issues (2A). It will also be taught by approved faculty as a Writing Intensive course.

14. Transferability as an elective or course required by a major to senior colleges (with supporting documents if applicable). Include comparable courses at senior or other community colleges, if applicable:

15. Faculty available with expertise to teach this course:

	Instructor 1	Instructor 2	Instructor 3
Name:	Jose Luis Madrigal	Laura Sabani	Aranzazu Borrachero
Degree:	Ph. D.	Ph.D.	PhD.

16. Facilities and technologies required:

A computer with a reliable internet connection fast enough to handle the material found on Blackboard.

17. List of courses to be withdrawn, or replaced by this course, if any:

N/A

18. Enrollment limit and frequency the course will be offered (each semester, once a year, or alternating years):

The course will be offered in the spring and/or the fall and will have an enrollment of 25 students.

19. What changes in any programs will be necessitated or requested as a result of this course's additions/charges:

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GLOSSARY OF TERMS

Entry-level course	A credit course with no pre-requisites other than passing placement exams or required remediation; usually considered a first semester course; this course may be a pre-requisite for mid-level courses
Mid-level course	A course which has at least one credit course as a pre-requisite; usually a second or third semester course; this course may be a pre-requisite for upper-level courses
Upper-level course	A course, usually taken in the third or fourth semester, which has several credit course pre-requisites
(Student) Learning outcomes	An explicit statement of the competencies (knowledge and skills) a student is expected to demonstrate either in general education, in an academic program or in a course
General education outcomes	The knowledge, skills, attitudes, and values that a student completing an Associate Degree will demonstrate.
Academic Program learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a program of study.
Course learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a course.

1. **Department** Foreign Languages and Literatures
2. **Course, prefix, number, & title:** LS 411 Hispanic Avant-Garde in Art and Literature: Challenging Conventional Norms
3. **Hours (Class, recitation, Laboratory, studio) & Credits:** 3 class hours, 3 credits
4. **Pre-requisites (if any):** ENGL-101
5. **Co-requisites (if any):**
5. **Course Description in college catalog:**

This course examines the Hispanic world's unconventional and innovative art and literature, from the Modernism era to the Avant-garde movements of the 20s and 30s. Through an in-depth examination of artistic movements that challenged traditional norms and their cultural impact, such as Gaudí's architectural masterpieces, Frida Kahlo's self-portrayals, Buñuel's surrealist films, Garcia Lorca's avant-garde poetry, and Borges short stories, students will analyze the unconventional and innovative art and literature of the Hispanic world. The course places a strong emphasis on developing critical thinking, reading, and writing skills through various assignments, peer review, and revision. The course adheres to Quality Matters standards and offers a dynamic blend of multimedia, discussions, readings, and collaborative learning. By the end of the course, students will have a comprehensive understanding of Hispanic avant-garde art and literature, as well as improved writing skills. This course will be taught in English. This course does not fulfill the foreign language requirement. This course is also an OER so no textbook is required, and all materials and video links will be provided.

6. Academic programs for which this course is required:

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7. General Education Outcomes: Place an "X" in the appropriate General Education Outcome(s) box that this course supports.

- 1. Communicate effectively in various forms
- 2. Use analytical reasoning to identify issues or problems and evaluate evidence in order to make informed decisions
- 3. Reason quantitatively as required in various fields of interest and in everyday life
- 4. Apply information management and digital technology skills useful for academic research and lifelong learning

If applicable, check the appropriate program level outcome(s)

- A. Integrate knowledge and skills in the program of study
- B. Make ethical judgments while recognizing multiple perspectives, as appropriate in the program of study
- C. Work collaboratively to accomplish learning objectives

8. Course-specific student learning outcomes: (Expand if needed)

a	Define and demonstrate understanding of key vocabulary associated with avant-garde art and literature in their historical and cultural contexts.
b	Analyze the ways in which social tensions and convulsions, such as war, revolution, and technological change, impacted art forms and cultural expressions.
c	Examine the influence of Freud's psychoanalysis on the development of art and literature.
d	Apply literary and critical theory to analyze representations of reality, including but not limited to postmodernism, structuralism, and deconstructionism.
e	Practice low-stakes communication skills in class, including active participation in discussion boards and peer-to-peer interactions about key cultural issues such as art and literature in the politics of the time.
f	Apply research and high stakes writing to develop and demonstrate knowledge and analytical skills through the composition of research papers on writers, artists, or cultural events, including the use of appropriate citation styles and ethical research practices.

9. Program-specific outcomes (if applicable)

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10. Methods by which student learning (general education, course-specific, and, if applicable program specific) will be assessed and evaluated; describe the types of methods to be employed; note whether certain methods are required for all sections):

<p>Graded weekly discussions, quizzes, and essays.</p> <p>GRADING AND ASSIGNMENTS:</p> <p>Participation in class (reading, researching, and discussing topics) 20%</p> <p>Quizzes 20%</p> <p>Essays (3 compositions which vary from 1-2 pages) 30%</p> <p>FINAL PAPER (Reflection paper from 4-6 pages) 30%</p>

11. Course topics and assignments (include laboratory topics when applicable)

Week	Topics	Sample Assignments (if applicable, Blackboard/Online)
1-3	<p>Unit 1. Modernity, Modernism, and the Avant-garde</p> <p>- Content:</p> <p>I. Introduction</p> <ul style="list-style-type: none"> • Definition of Modernity and Modernism. • Historical and Cultural Context: modernist art and literature related to industrialization, technology, and the role of machines. • Anglo-American Modernism versus Hispanic <i>Modernismo</i>. • What is Avant-garde? 	<p>- Assessment:</p> <ol style="list-style-type: none"> 1. Quiz: Content Questionnaire on podcasts, readings, and videos. 2. Discussion Questionnaire. Through chosen readings, videos, and discussion, students will: <ul style="list-style-type: none"> • Define modernity and identify its major traits. • Describe modernism as a response to the scientific and technological advances of modernity. • Identify specific examples of how modernism manifests in

	<ul style="list-style-type: none"> Avant-garde most important movements: Futurism, Expressionism, Dadaism, and Surrealism <p>- Sources:</p> <ul style="list-style-type: none"> Videos: <ul style="list-style-type: none"> Modernity Introduction to Modernism Symbolism in 10 Minutes: Why Is it The Most Mysterious Art Movement? Futurism in 9 Minutes: How to Rewrite Culture Dadaism in 8 Minutes: Can Everything Be Art? Expressionism in 8 Minutes: The Most Disturbing Art Ever? Art Nouveau in 8 Minutes: Why It Has Never Gone Away? Art Deco in 9 Minutes: Why Is It The Most Popular Architectural Style? Surrealism in 5 Minutes: Idea Behind the Art Movement What is the Point of Avant-Garde Art? Readings (excerpts) <ul style="list-style-type: none"> Bronner, S. E. (2012). <i>Modernism at the Barricades: Aesthetics, Politics, Utopia</i>. Columbia University: New York. 	<p>different art forms, including the departure from realism in visual arts, increased experimentation and an “inward turn” to consciousness in literature, decreased traditional notions of tonality in music, and an increase in the visual importance of functionality in architecture.</p> <ul style="list-style-type: none"> Define avant-garde movements as a set of artistic and cultural movements that emerged in the early 20th century and aimed to challenge traditional artistic conventions and push the boundaries of art and culture. <p>3. Writing / Discussion Board</p> <p>Watch one of the assigned videos related to modernism, avant-garde, or dadaism, and write down at least 5 relevant points in a notepad. This assignment is designed to encourage active engagement with the course material and provide an opportunity for students to practice summarizing and synthesizing information. (250 words)</p>
4-5	<p>Unit 2. Antoni Gaudi, Art Nouveau and Modernism</p> <p>- Content:</p> <p>I. Introduction</p> <ul style="list-style-type: none"> Definition of “Modernismo” Similarities and differences between “Modernismo” and Modernism in other artistic and literary movements around the world. Historical and Cultural Context <ul style="list-style-type: none"> Anglo-American Modernism versus Hispanic <i>Modernismo</i>. <i>Modernismo</i> on both sides of the Atlantic: Rubén Darío <p>II. Literary and Artistic Catalan Modernism</p> <ul style="list-style-type: none"> Key Figures (Santiago Rusiñol and Ramón Casas) Sources of Inspiration (Henrik Ibsen and postimpressionist Parisian artistic circles) 	<p>- Assessment:</p> <p>3. Quiz: Content Questionnaire on recorded class, readings and videos.</p> <p>4. Discussion Questionnaire.</p> <p>Through chosen readings, videos, and discussion, students will:</p> <ul style="list-style-type: none"> Define <i>modernismo</i> as a Hispanic movement that emerged at the turn of the 20th century and was influenced by French symbolism and decadentism Identify the main characteristics of Antoni Gaudí’s architectural style. Analyze the impact of Gaudí’s work on the landscape of Barcelona and how it contributed to the

<ul style="list-style-type: none"> • Anti-conformist Lifestyle <p>III. Architectural <i>Modernismo</i>.</p> <ul style="list-style-type: none"> • Key Figures (Antoni Gaudi and Luis Domenech i Montaner) • Features and Characteristics of Modernista Architecture <p>IV. Impact of <i>Modernismo</i> in Barcelona</p> <ul style="list-style-type: none"> • Social and Cultural Context • Reception of <i>Modernismo</i> in Barcelona Society <p>V. Conclusion</p> <ul style="list-style-type: none"> • Summary of <i>Modernismo</i> • Historical Significance of Antoni Gaudí. <p>- Sources:</p> <ul style="list-style-type: none"> • Documentary: The life and designs of Antoni Gaudi • German documentary with English subtitles: The Gaudi code • Film: Antonio Gaudi - 1984 - Hiroshi Teshigahara • Reading: excerpts: <ol style="list-style-type: none"> a. Anderson, A. (2020). <i>Art Nouveau Architecture</i>. The Crowood Press. b. Resina, J.R. (2008). <i>Barcelona's Vocation of Modernity: Rise and Decline of an Urban Image</i>. Stanford University Press. c. Roe, J. (2012). <i>Antoni Gaudí</i>. Parkstone International. 	<p>development of Art Nouveau and <i>modernismo</i>.</p> <ul style="list-style-type: none"> • Evaluate Gaudí's early career in Barcelona and describe how his work on public lampposts in Plaça Reial and Pla del Palau reflected his unique architectural vision. • Compare and contrast Gaudí's work with other architects of the Art Nouveau and Modernism, and describe how his approach differed from theirs. <p>5. Writing / Discussion Board</p> <p>In an imaginary visit to Barcelona, students will have the opportunity to immerse themselves in the city's rich artistic and cultural heritage, particularly through exploring the work of Antoni Gaudí. As part of their virtual experience, students will be tasked with two writing assignments:</p> <ul style="list-style-type: none"> • <u>Letter to Family</u>: Students will write a letter to their family, describing their impressions of Gaudí's architecture and its impact on the city's cultural and artistic landscape. In this letter, students should aim to convey their personal experiences and emotions while visiting Gaudí's works, such as the Sagrada Familia, Park Güell, and Casa Batlló. Additionally, students should discuss the influence of Gaudí's unique style on Barcelona's identity as a cultural capital, highlighting how his approach to architecture reflects the city's values and history. (300 words) • <u>Trip Diary Entry</u>: In their trip diary, students will write a short paragraph comparing and contrasting Gaudí's work with that of other architects associated with the Art Nouveau and <i>Modernismo</i>. Students should discuss the similarities and differences in these architects' approaches to design and how Gaudí's work stands out within this artistic tradition. Moreover, students should analyze the unique features of Gaudí's style, such
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		<p>as his use of natural forms and incorporation of religious symbolism, and how they contribute to his lasting impact on the world of architecture. (200 words)</p>
6-7	<p>Unit 3. Frida Kahlo: An Artistic Journey through Self-Reflection and Political Activism</p> <p>- Content:</p> <ul style="list-style-type: none"> • The paintings of Mexican artist Frida Kahlo through a critical reflection of her life, art, and struggles • Mexican Mural Movement of the 1920s: Diego Rivera. • Diego and Frida: a larger than life/art marriage • A detailed study of her many self-portraits • Personal struggles, artistic aspirations, and political activism • the contradictions of capitalist society in crisis. <p>- Sources:</p> <ul style="list-style-type: none"> • In Search Of Frida Kahlo (Full Documentary) • The Life and Legacy of Frida Kahlo: A Tribute to the Mexican Artist (Full documentary) • Reading excerpts: <ul style="list-style-type: none"> • Hardin, T. (2006). <i>Frida Kahlo: a Modern Master</i> 	<p>- Assessment:</p> <ol style="list-style-type: none"> 1. Quiz: Content Questionnaire on recorded class, readings and videos. 2. Discussion Questionnaire. Through the readings and discussion, students will: <ul style="list-style-type: none"> • Analyze the role of self-reflection in Frida Kahlo's paintings, as well as its connection to her personal struggles and artistic aspirations. • Evaluate the ways in which Frida Kahlo's art reflects her political activism, including her critiques of capitalism and societal contradictions. • Develop a deep understanding of Frida Kahlo's life and art through a detailed study of her many self-portraits, identifying and analyzing the recurring themes and motifs present throughout her work. • Apply critical thinking skills to identify and analyze the key social and political issues that Frida Kahlo's art addresses, and evaluate the effectiveness of her art in promoting social change and political awareness. • Develop communication skills by creating and presenting a research project on Frida Kahlo's life, art, and political activism. 3. Writing:

		<ul style="list-style-type: none"> You are an art critic writing for your university newspaper. Briefly write your position and give a Frida Kahlo's exhibition a score between 0 and 5. Consider your audience, express your opinions and support your criticism (500 words). Reread, rewrite and edit.
8-9	<p>Unit 4. <i>Un Chien Andalou</i>: A Study of Luis Buñuel's Surrealist Masterpiece</p> <p>-Content:</p> <ul style="list-style-type: none"> Cultural and intellectual environment in which Buñuel created the film Experimental film or avant-garde cinema Salvador Dalí's contribution The surrealist movement, its influence on Buñuel and his contemporaries, and its impact on the artistic world An in-depth analysis of Luis Buñuel's groundbreaking film. <p>- Sources:</p> <ul style="list-style-type: none"> Un Chien Andalou (film) Readings: Introduction to Luis Bunuel and Avant-Garde Filming 	<p>- Assessment:</p> <ol style="list-style-type: none"> Quiz: Content Questionnaire on podcasts, readings, and film. Discussion Questionnaire Through the readings, listening to the podcast, and discussion, students will: <ul style="list-style-type: none"> Identify the characteristics and purpose of avant-garde/experimental films as an art form. Describe the historical development and influence of the avant-garde genre in filmmaking. Analyze the early films of Luis Bunuel as a representative of the avant-garde and surrealist movement. Writing / Discussion Board: As a creative exercise, students will imagine writing a script based on one of their own dreams. The first part of the assignment requires them to write a concise abstract of their dream, while in the second part, they will use Luis Bunuel's "Le chien andalou" as inspiration to craft a scene of their own. The maximum word limit for each part of the assignment is 500 words.
10-11	<p>Unit 5. Tradition and avant-garde in the poetry of Garcia Lorca</p>	<p>- Assessment:</p>

	<p>-Content:</p> <ul style="list-style-type: none"> • Generation of '27, its members, and its significance in Spanish literature • García Lorca's literary style: an original blend of Spanish folklore, Andalusian flamenco, and European avant-gardes. • Traditional ballads present in Garcia Lorca's poetry and their connection to the cultural identity of Andalusia • Avant-garde elements used by Garcia Lorca in his poetry, such as symbolism, expressionism, and surrealism. <p>- Sources:</p> <p>1. Videos:</p> <ul style="list-style-type: none"> • The spirit of Lorca Full documentary) • "Federico García Lorca: Asesinato en Granada" (Murder in Granada) • Lorca, memorias de un poeta (Biographical report based on the correspondence of the poet Federico García Lorca in Spanish) <p>2. Readings (excerpts will be prepared in advance for translation):</p> <ul style="list-style-type: none"> • Federico Garcia Lorca: poems • Cano Ballesta, J. L. (1972). <i>La poesía española entre la pureza y la revolución</i> (1930-1936). Gredos: Madrid. • García de la Concha, V. (1982). <i>El surrealismo</i>. Taurus: Madrid. • Maurer, C. (2016). García Lorca, Dalí, and the metaphor, 1926-1929. <i>Avant-garde Studies Issue 2</i>, Fall 2016, 1. • Predmore, R. L. (1985). <i>Los poemas neoyorquinos de Federico García Lorca</i>. Taurus: Madrid. • Umbral, F. (1998). <i>Lorca, poeta maldito</i>. Planeta: Barcelona. 	<p>1. Quiz: Content Questionnaire on podcasts, readings, and videos.</p> <p>2. Discussion Questionnaire:</p> <p>Through the podcast, readings, and discussion of the videos, students will:</p> <ul style="list-style-type: none"> • Recognize and analyze the differences between surrealist theories espoused by André Breton and those followed by Federico García Lorca, • Attempt to explain these differences through personal experiences/historical context or research. <p>3. Writing:</p> <p>After reading Lorca's most surrealist poems and critical essays, as well as their documentaries about the topic, students will write a short essay (1,000 words) on the use of metaphor in both <i>The Gypsy Ballads</i> and <i>Poet in New York</i>. By following the rubric provided by the instructor, students will:</p> <ul style="list-style-type: none"> • Define what a metaphor is. • Identify the use of metaphor in Lorca's poetry. • Analyze and explain the differences between traditional and surrealist metaphors. • Argue about possible relationship between metaphor and Freudian psychoanalysis in Lorca's poetry.
12-14	<p>Unit 6. Borges, Between Modernism and Postmodernism</p> <p>-Content:</p> <p>This unit will focus on Borges' literary work and its relationship to avant-garde and postmodern literature of the 20th century. Through the analysis of Borges' use of irony and metafiction, students will gain an understanding of the postmodern literary mode and its relevance to contemporary literature.</p>	<p>- Assessment:</p> <p>1. Quiz: Content Questionnaire on podcasts, readings, and videos.</p> <p>2. Discussion Questionnaire:</p> <p>Through the podcast, readings, and discussion of the videos, students will:</p> <ul style="list-style-type: none"> • Discuss the cultural and historical context of Borges' works. • Critically reflect on the use of irony and metafiction in Borges' works

	<p>Key points to explore in this unit include:</p> <ul style="list-style-type: none"> • Avant-Garde Ideals in Borges' Early Writings: Ultraism and <i>Creacionismo</i> • Mimesis: the constructed nature of language and representation • Fiction as a Rhetorical Device • Use of labyrinths, mirrors, chess games, and detective stories as metaphors for philosophical concepts such as chance, determinism, and epistemological uncertainty • Irony and Metafiction in Borges' writings: <ul style="list-style-type: none"> - questioning traditional notions of authorship and narrative - challenging the boundaries between fiction and reality <p>- Sources:</p> <p>1. Videos:</p> <ul style="list-style-type: none"> • Jorge Luis Borges, the Mirror Man • Profile of a Writer: Jorge Luis Borges • An Animated Introduction to the Magical Fictions of Jorge Luis Borges <p>2. Readings (excerpts):</p> <ul style="list-style-type: none"> • Collected Fictions of Jorge Luis Borges • Analysis of Jorge Luis Borges's Stories • Vargas Llosa, M. (1988). The Fictions of Borges. <i>Third World Quarterly</i>, 10(3), 1325-1333. 	<p>3. Writing:</p> <p>Students will write a research paper on a topic related to Borges' short stories and their relationship to modernism and/or postmodernism. The paper should demonstrate the student's ability to engage with critical theory and textual analysis. By following the rubric provided by the instructor, students will:</p> <ul style="list-style-type: none"> • Analyze Borges' use of irony and metafiction in his works, and how they challenge traditional notions of authorship and narrative. • Discuss the role of language and representation in Borges' works, and how they reflect the constructed nature of reality. • Evaluate the relevance of Borges' work to contemporary literature and postmodern literary mode. • Synthesize and evaluate multiple sources of information, including videos, readings, and class discussions, to develop a deeper understanding of Borges' works. • Develop critical thinking skills by analyzing and reflecting on the use of irony and metafiction in Borges' works.
15.	Final Examination	

12. Sample texts/readings/bibliography/other materials required or recommended for the course (as applicable):

13. Required attire (if applicable):

14. Academic Integrity policy (department or College):

Academic honesty is expected of all students. Any violation of academic integrity is taken extremely seriously. All assignments and projects must be the original work of the student or teammates. **Plagiarism will not be tolerated.** Any questions regarding academic integrity should be brought to the attention of the instructor. The following is the Queensborough Community College Policy on Academic Integrity: "It is the official policy of the College that all acts or attempted acts that are violations of Academic Integrity be reported to the Office of Student Affairs. At the faculty member's discretion and with the concurrence of the student or students involved, some cases though reported to the Office of Student Affairs may be resolved within the confines of the course and department. The instructor has the authority to adjust the offender's grade as deemed appropriate, including assigning an F to the assignment or exercise or, in more serious cases, an F to the student for the entire course." The college's policy on Academic Integrity can be found at http://www.qcc.cuny.edu/governance/docs/Academic_Integrity_Document.pdf

16. Disabilities

Any student who feels that he or she may need an accommodation based upon the impact of a disability should contact the office of Services for Students with Disabilities in Science Building, Room S-132, 718-631-6257, to coordinate reasonable accommodations for students with documented disabilities. You can visit the Services for Students with Disabilities website by clicking on this link: <http://www.qcc.cuny.edu/SSD/>.

OPTIONAL (May be included by instructors.)

Student Life, Services: <http://www.qcc.cuny.edu/current-students/index.html>

Single Stop: <http://www.qcc.cuny.edu/singlestop/index.html>

Counseling: <http://www.qcc.cuny.edu/counseling/index.html>

GLOSSARY OF TERMS

Entry-level course	A credit course with no pre-requisites other than passing placement exams or required remediation; usually considered a first semester course; this course may be a pre-requisite for mid-level courses
Mid-level course	A course which has at least one credit course as a pre-requisite; usually a second or third semester course; this course may be a pre-requisite for upper-level courses
Upper-level course	A course, usually taken in the third or fourth semester, which has several credit course pre-requisites
(Student) Learning outcomes	An explicit statement of the competencies (knowledge and skills) a student is expected to demonstrate either in general education, in an academic program or in a course
General education outcomes	The knowledge, skills, attitudes, and values that a student completing an Associate Degree will demonstrate.
Academic Program learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a program of study.
Course learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a course.



4. Certificate Program

DEPARTMENTS OF CHEMISTRY AND PHYSICS

Departmental approval date: Chemistry February 15th, 2024, Physics February 13th, 2024

Application for Registration of a New Certificate or Advanced Certificate Program

4. Program Description and Purpose

1) Provide a brief description of the program as it will appear in the institution's catalog.

Answer: This certificate is designed to address the unmet need for skilled workers in nuclear safety and radiation safety for various stakeholders, such as the healthcare sector, Health Physics careers, and the U.S. Department of Energy (DOE) National Laboratories and National Nuclear Security Administration (NNSA). It will include two courses in radiation safety with embedded hands-on training and active learning designed by real-world practitioners, such as at Brookhaven National Laboratory (BNL). As part of the experience, students will be supported to apply for summer internships at DOE labs and other relevant sites.

2) List the educational and (if appropriate) career objectives of the program.

Answer: The certificate provides foundational knowledge and hands-on training in collaboration with field experts. The potential impact includes: (1) Sustainable pipeline of next-generation radiation safety workers (for example, the DOE/NNSA, the Nuclear Security Enterprise and related STEM industries); (2) Research results relevant to DOE/NNSA mission areas, including efficient responses to radiological/nuclear accidents and terrorism; (3) Improved curriculum in chemistry and physics at QCC (a 2-year Minority Serving Institution) to meet the demand for a diverse workforce of trained professionals in radiation safety. Students wishing to pursue continued study may apply all credits in the proposed certificate to the Liberal Arts and Science (Mathematics and Science) A.S. degree.

THE STATE EDUCATION DEPARTMENT / THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY
12234

Application for Registration of a New Certificate or Advanced Certificate Program¹

Program registration is based on standards in the [Regulations](#) of the Commissioner of Education. Section [52.1](#) defines the curricula that must be registered. The Department registers individual curricula rather than the institution as a whole, but the registration process addresses major institutional elements. It is the chief means by which the Regents support the quality of college and university programs.



This application should NOT be used for the following types of program proposals:

- General Academic Programs Leading to a Degree Award (e.g., Bachelor of Arts)
- Programs Preparing Teachers, Educational Leaders, and Other School Personnel;
 - Programs Preparing Licensed [Professions](#); or
 - Revisions to Existing Registered Programs

The application materials for those types of proposals can be found at:

<http://www.highered.nysed.gov/ocue/aipr/register.html>

Doctoral programs: please [contact](#) the Office of College and University Evaluation.

Directions for submission of proposal:

1. Create a *single* PDF document that includes the following completed forms:
 - Application for Registration of a New Certificate or Advanced Certificate Program
 - Application to Add the Distance Education Format to a New or Registered Programs (if applicable)
 - CEO (or Designee) Approval Form
2. Create a separate PDF document for any required syllabi (see Task 3 for syllabi requirements.)

¹ CUNY and SUNY institutions: contact System Administration for proposal submission process.

3. Attach the PDF documents to an e-mail.

4. Send e-mail to OCURevAdmin@mail.nysed.gov

When submitting to the mailbox, include the following elements in the subject line of the e-mail:
Institution Name, Degree Award, and Program Title

E.g., Subject: AAA College, Advanced Certificate, English Literature

Task 1 Institution and Program Information

Institution Information	
Institution Name:	CUNY Queensborough Community College
Institution Code (6 digits):	373500
<p><i>The name and code of the institution should reflect the information found on the Inventory of Registered Programs</i></p>	
Institution Address:	222-05 56 th Avenue
City:	Bayside
State/Country:	New York
Zip:	11364
Regents Regions:	New York City Region
Specify campus(s) of the institution where program is offered, if other than the main campus:	Main Campus
<p><i>The name and code of the location(s) should reflect the information found on the Inventory of Registered Programs</i></p>	

Specify any other additional campus(s) where the program is offered besides the ones selected above:	n/a
If any courses will be offered off campus, indicate the location and number of courses and credits:	n/a
If the program will be registered jointly with another institution, please provide the partner institution's name:	n/a

Program Information for New Programs	
Program Title:	Radiation Safety Certificate
Degree Award:	<input checked="" type="checkbox"/> Certificate <input type="checkbox"/> Advanced Certificate
HEGIS code:	5207.00 Radiologic Technologies
Number of Credits*:	31-35

If the program contains multiple options or concentrations that affect the number of program credits, list the total number of program credits required for each option:

Option/Concentration Name:	Credits:
Option/Concentration Name:	Credits:
Option/Concentration Name:	Credits:
Option/Concentration Name:	Credits:

If program is part of a dual degree program, provide the following information:

Program Title:	n/a
Degree Award:	n/a
HEGIS code:	n/a

Section III. Contact Information	
Name of contact person	Dr. Phyllis Curtis-Tweed
Title of contact person:	Provost and Vice President of Academic Affairs
Telephone	718-631-6344
Fax:	718-281-5684
Email:	phyllis.curtis-tweed@qcc.cuny.edu

Task 2 - Proposed Program Information

Guidance for this task can be found by clicking here: [Department Expectations: Admissions, Academic Support Services, Credit for Experience and Program Assessment and Improvement](#)

Relevant Regulations for this task can be found by clicking here: [Relevant Regulations for Task 2](#)

1. Program type (check one)

Certificate Advanced Certificate

2. Program format

Check all scheduling, format, and delivery features that apply to the proposed program. Unless otherwise specified below, it is assumed the proposed program may be completed through a full-time, day schedule. Format definitions can be found by clicking here: [Format Definitions](#)

<input type="checkbox"/>	Evening: All requirements for the award must be offered during evening study.
<input type="checkbox"/>	Weekend: All requirements for the award must be offered during weekend study.
<input type="checkbox"/>	Evening/Weekend: All requirements for the award must be offered during a combination of evening and weekend study.
<input type="checkbox"/>	Day Addition: For programs having EVENING, WEEKEND, or EVENING/WEEKEND formats, indicates that all requirements for the award can also be completed during traditional daytime study.
<input type="checkbox"/>	Not Full-Time: The program cannot be completed on a full-time basis, e.g., an associate degree that cannot be completed within two academic years. Such programs are not eligible for TAP payments to students.
<input type="checkbox"/>	5-Year baccalaureate: Indicates that because of the number of credits required, the program is approved as a 5-year program with five-year State student financial aid eligibility.
<input type="checkbox"/>	4.5 Year baccalaureate: Indicates that because of the number of credits required, the program is approved as a 4.5-year program with 4.5-year State student financial aid eligibility.
<input type="checkbox"/>	Upper-Division: A program comprising the final two years of a baccalaureate program. A student cannot enter such a program as a freshman. The admission level presumes prior completion of the equivalent of two years of college study and substantial prerequisites.
<input type="checkbox"/>	Independent Study: A major portion of the requirements for the award must be offered through independent study rather than through traditional classes.
<input type="checkbox"/>	Cooperative: The program requires alternating periods of study on campus and related work experience. The pattern may extend the length of the program beyond normal time expectations.
<input type="checkbox"/>	Distance Education: 50% or more of the course requirements for the award can be completed through study delivered by distance education.

<input type="checkbox"/>	External: All requirements for the award must be capable of completion through examination, without formal classroom study at the institution.
<input type="checkbox"/>	Accelerated: The program is offered in an accelerated curricular pattern which provides for early completion. Semester hour requirements in Commissioner’s Regulations for instruction and supplementary assignments apply.
<input type="checkbox"/>	Standard Addition: For programs having Independent, Distance Education, External, OR Accelerated formats, indicates that all requirements for the award can also be completed in a standard, traditional format.
<input type="checkbox"/>	Bilingual: Instruction is given in English and in another language. By program completion, students are proficient in both languages. This is not intended to be used to identify programs in foreign language study.
<input type="checkbox"/>	Language Other Than English: The program is taught in a language other than English.
<input type="checkbox"/>	Other Non-Standard Feature(s): Please provide a detailed explanation.

3. Related degree program(s)

Indicate the [registered degree program\(s\)](#) by title, award and five-digit SED code to which the credits will apply:

Answer: Liberal Arts and Sciences (Mathematics and Science), A.S. degree, 01523

4. Program Description and Purpose

3) Provide a brief description of the program as it will appear in the institution’s catalog.

Answer: This certificate is designed to address the unmet need for skilled workers in nuclear safety and radiation safety for various stakeholders, such as the healthcare sector, Health Physics careers, and the U.S. Department of Energy (DOE) National Laboratories and National Nuclear Security Administration (NNSA). It will include two courses in radiation safety with embedded hands-on training and active learning designed by real-world practitioners, such as at Brookhaven National Laboratory (BNL). As part of the experience, students will be supported to apply for summer internships at DOE labs and other relevant sites.

4) List the educational and (if appropriate) career objectives of the program.

Answer: The certificate provides foundational knowledge and hands-on training in collaboration with field experts. The potential impact includes: (1) Sustainable pipeline of next-generation radiation safety workers (for example, the DOE/NNSA, the Nuclear Security Enterprise and related STEM industries); (2) Research results relevant to DOE/NNSA mission areas, including efficient responses to radiological/nuclear accidents and terrorism; (3) Improved curriculum in chemistry and physics at QCC (a 2-year Minority Serving Institution) to meet the demand for a diverse workforce of trained professionals in radiation safety. Students wishing to pursue continued study may apply all credits in the proposed certificate to the Liberal Arts and Science (Mathematics and Science) A.S. degree.

5) How does the program relate to the institution’s mission and/or master plan?

Answer: The certificate program is in line with the College’s mission to provide high-quality education to students in a nurturing and diverse environment that prepares them to be successful in a dynamic workforce.

6) Describe the role of faculty in the program’s design.

Answer: The faculty will be primarily responsible for delivering the course content associated with the certificate, which includes training students on lab equipment in hands-on experiments guided by BNL scientists and other field experts. They will employ a cohort model to retain, mentor, and track students through the academic and postgraduate pipeline.

7) Describe the input by external partners, if any (e.g., employers and institutions offering further education).

Answer: Current external partners include staff in the department of Nonproliferation and National Security Administration at Brookhaven National Laboratory. Initially, BNL's radiological and nuclear detection facility will be used to train and mentor QCC faculty members and student interns. Collaborators are involved in the design of the curriculum for the courses in radiation safety. Additionally, the relevant staff will provide guest lectures, on-site tours, and workshops on current radiation safety practices, as well as career placement assistance.

8) What are the anticipated Year 1 through Year 5 enrollments?

Answer: The enrollment for Year 1 is anticipated to be 10, and 12-15 for Years 2-5.

5. Admissions

1) List all *program* admission requirements (or note if identical to the institution's admission requirements).

Answer: The program admission requirements are identical to the open access admission requirements of CUNY Queensborough Community College.

2) Describe the process for evaluating exceptions to these requirements.

Answer: n/a

3) How will the institution encourage enrollment by persons from groups historically underrepresented in the discipline or occupation?

Answer: The institution will encourage enrollment by offering internships and support to subsidize the cost of the degree.

6. Academic Support Services

Summarize the academic support services available to help students succeed in the program.

Answer: Queensborough Community College has numerous services in place to support students in their intellectual, social, and vocational development. Below are some of the services that are available:

- **The QCC Counseling Center** offers short-term individual personal counseling with licensed, professional counselors and can provide crisis intervention services and referrals to resources on and off campus, as needed.
- **QCC's Center for Tutoring and Academic Support (CTAS)** provides free discipline-specific tutoring on campus and online.
- The **Kurt R. Schmeller Library** offers a wide range of services and resources to support the curriculum and help students develop information competencies.
- The **Office of Accessibility Services** "facilitates the academic success of students with disabilities through the provision of appropriate educational supports and settings." Students may register with the office to obtain reasonable accommodations for all their courses.
- The **Academic Computing Center** contains a 72-student computer lab containing faculty requested applications that support relevant coursework. The Center also provides a wide array of technology which facilitates instruction, such as podia, laptops, and virtual servers for hosting academic websites.
- The **Office of Educational Technology (OET)** and the **Center for Excellence in Teaching and Learning** provide faculty with professional development opportunities and support related to pedagogy.
- Queensborough CC offers a range of options for students with developmental needs including co-requisite model developmental courses, immersive programs, and ESL courses.

7. Credit for Experience

If this program will grant substantial credit for learning derived from experience, describe the methods of evaluating the learning and the maximum number of credits allowed.

Answer: n/a

8. Program Assessment and Improvement

Summarize the plan for periodic evaluation of the new program, including the use of data to inform program improvement.

Answer: Queensborough Community College currently has a regular five-year program review process. Each degree and certificate program is evaluated every five years on a designated schedule. The program review consists of two parts: a self-study and an external evaluation. The proposed certificate will undergo Program Review in the same manner. A self-study will be conducted by a committee formed by the Department of Chemistry. Using data provided by Institutional Research and individual course assessment, the committees will discuss student outcomes, curriculum, faculty, and facilities and then generate major findings and formulate recommendations. The committee will prepare a report according to a standardized template. An external reviewer, with expertise in radiation safety, will be invited to read the report, visit the campus, and meet with faculty members, administrators, and students. The external reviewer will then prepare a report that includes recommendations. In response to this report, an action plan is developed, followed by an administrative response that operationalizes the action plan and sets the strategic direction of the program for the next five years.

Task 3 - Sample Program Schedule

NOTE: The sample program schedule is used to determine program eligibility for financial aid.

Guidance for this task can be found by clicking here: [Department Expectations: Curriculum \(including Internships, Financial Aid Considerations, and Liberal Arts and Sciences\)](#)

Relevant regulations for this task can be found by clicking here: [Relevant Regulations for Task 3](#)

a). Complete **Table 1**. Please see below.

b). If the program will be **offered through a nontraditional schedule**, provide a brief explanation of the schedule, including its impact on financial aid eligibility.

Answer: n/a

c). For existing courses, enter the **catalog description** of the courses.

Answer:

CH-151 (General Chemistry I): This course is the first part of a two-semester sequence that provides students with a fundamental knowledge of the modern theory in general and inorganic chemistry. It covers topics that are essential to many disciplines in science and technology, and the health professions, with an emphasis on developing problem-solving skills. Topics include matter and energy; chemical nomenclature; mass relationships and stoichiometry; reactions in aqueous solutions; gas laws and kinetic molecular theory; atomic structure and quantum theory; periodicity of elements; chemical bonding and molecular structure; states of matter and intermolecular forces; properties of solutions; and colligative properties. Laboratory work provides training in common experimental methods and hands-on application of theory. The students in Honors classes will attend scientific seminars and write a short paper. 4.5 credit hours. *Required Core 1C: Life and Physical Sciences*

CH-152 (General Chemistry II): This course is the second part of a two-semester sequence that provides students with a fundamental knowledge of the modern theory in general and inorganic chemistry. It covers topics that are essential to many disciplines in science and technology, and the health professions, with an emphasis on developing problem-solving skills. Topics include enthalpy, entropy, and free energy; chemical kinetics; chemical equilibrium in gaseous and aqueous systems; properties and equilibria of acids and bases; buffers and acid-base titrations; solubility and complex ion equilibria; qualitative analysis; electrochemistry and redox reactions; and an introduction to nuclear chemistry. Laboratory work provides training in common experimental methods and hands-on application of theory. The students in Honors classes will give 10-15 minute oral presentations on topics and concepts chosen from the course material. This course makes extensive use of computers and requires the development of scientific communication skills. 4.5 credit hours. *Flexible Core 2E: Scientific World*

PH-301 (College Physics I): PH-301 and 302 are designed for students who need or want two semesters of non-calculus physics, such as those planning careers in optometry, dentistry, and other medically-related fields. Topics include elementary particles, conservation laws, vectors, laws of motion, linear and angular momentum, energy, gravitation, and thermodynamics.

PH-302 (College Physics II): Second-semester course following PH-301. Topics include electro-magnetism, radiation and wave phenomena, relativity, atomic interactions, atomic energy, and physics frontier.

ENGL-101 (English Composition I): Development of a process for producing intelligent essays that are clearly and effectively written; library work; 6,000 words of writing, both in formal themes written for evaluation and in informal writing such as the keeping of a journal. During the recitation hour, students review grammar and syntax, sentence structure, paragraph development and organization, and the formulation of thesis statements. 3 credit hours. *Required Core 1A: English Composition*

ENGL-102 (English Composition II: Introduction to Literature): This course offers a continued study and practice of process-based writing combined with an introduction to literature: fiction, drama, and poetry. During the conference hour, students review basic elements of writing and analytical and critical reading skills and research strategies. 3 credit hours. *Required Core 1A: English Composition*

d). Syllabi: **Please see attached PDF for the syllabi of the new courses (RAD-101 and RAD-102).**

Provide syllabi for all new courses. The expected components of a syllabus are listed in [Department Expectations: Curriculum](#).

Note: Although it is required to submit syllabi for all new courses as noted, syllabi for **all** courses required for the proposed program should be available upon request.

Instructions for submitting syllabi:

All required syllabi must be included in a single, separate PDF document.

Table 1: Certificate/Advanced Certificate Program Schedule

- Indicate **academic calendar** type: Semester Quarter Trimester Other (describe):
- Label each term in sequence, consistent with the institution’s academic calendar (e.g., Fall 1, Spring 1, Fall 2)
- Use the table to show **how a typical student may progress through the program**; copy/expand the table as needed.

Term: Semester #1				Term:			
Course Number & Title	Credits	New	Prerequisite(s)	Course Number & Title	Credits	New	Prerequisite(s)
RAD-101: Radiation Safety I	4	<input checked="" type="checkbox"/>	CH-151 (co-requisite)			<input type="checkbox"/>	
CH-151: General Chemistry I	4.5	<input type="checkbox"/>	MA-119 and MA-121			<input type="checkbox"/>	
PH-301: College Physics I	4	<input type="checkbox"/>	MA-119 and MA-121			<input type="checkbox"/>	
ENGL-101: English Composition I	3	<input type="checkbox"/>	None			<input type="checkbox"/>	
Term credit total:	15.5			Term credit total:			
Term: Semester #2				Term:			
Course Number & Title	Credits	New	Prerequisite(s)	Course Number & Title	Credits	New	Prerequisite(s)
RAD-102: Radiation Safety II	4	<input checked="" type="checkbox"/>	RAD-101 and PH-301 (co-requisite)			<input type="checkbox"/>	
CH-152: General Chemistry II	4.5	<input type="checkbox"/>	CH-151			<input type="checkbox"/>	
PH-302: College Physics II	4	<input type="checkbox"/>	PH-301			<input type="checkbox"/>	
ENGL-102: English Composition II	3	<input type="checkbox"/>	ENGL-101			<input type="checkbox"/>	
Term credit total:	15.5	31 credits; Certificate awarded		Term credit total:			
Term:				Term:			
Course Number & Title	Credits	New	Prerequisite(s)	Course Number & Title	Credits	New	Prerequisite(s)
		<input type="checkbox"/>				<input type="checkbox"/>	
		<input type="checkbox"/>				<input type="checkbox"/>	
		<input type="checkbox"/>				<input type="checkbox"/>	
		<input type="checkbox"/>				<input type="checkbox"/>	
		<input type="checkbox"/>				<input type="checkbox"/>	

		<input type="checkbox"/>				<input type="checkbox"/>	
Term credit total:				Term credit total:			
Term:				Term:			
Course Number & Title	Credits	New	Prerequisite(s)	Course Number & Title	Credits	New	Prerequisite(s)
		<input type="checkbox"/>				<input type="checkbox"/>	
		<input type="checkbox"/>				<input type="checkbox"/>	
		<input type="checkbox"/>				<input type="checkbox"/>	
		<input type="checkbox"/>				<input type="checkbox"/>	
		<input type="checkbox"/>				<input type="checkbox"/>	
		<input type="checkbox"/>				<input type="checkbox"/>	
Term credit total:				Term credit total:			
Program Totals:	Credits:31-35¹		Notes: 1. Students who enter QCC with a MA-119 (College Algebra) placement will be required to take MA-119 (3 credits) and MA-121 (Trigonometry; 1 credit) prior to taking CH-151. That will add 4 credit hours to the certificate program for those students. Students who have developmental need in mathematics will take MA-10ALP (0 credits) with MA-119 and MA-121.				

New: indicate if new course **Prerequisite(s):** list prerequisite(s) for the noted course

Task 4. Faculty

Guidance for this task can be found by clicking here: [Department Expectations: Faculty](#)

Relevant regulations for this task can be found by clicking here: [Relevant Regulations for Task 4](#)

a) Complete the faculty tables that describe faculty (**Table 2 and Table 3**), and faculty to be hired (**Table 4**), as applicable. Faculty curricula vitae should be provided only by request.

b) What is the institution's definition of "full-time" faculty? Include the number of credits expected to be taught by full-time faculty per academic term.

Answer: Full-time faculty are permanent employees who are either eligible for or have earned a continuing contract in a professor or lecturer contract line. They are required to teach at least 12 credit hours per non-summer semester and 24 hours per academic year.

Table 2: Current Faculty, Full-Time

- Provide information on faculty members who are full-time at the institution and who will be teaching each course in the major field or graduate program. *Include and identify the Program Director.

Faculty Member Name and Title/Rank at Institution (include and identify Program Director)	Expected Program Course Assignments	Percent of Teaching Time to Program	Highest and Other Applicable Earned Degrees and Disciplines (include College/University)	Additional Qualifications: list related certifications/licenses; professional experience in field, scholarly contributions, other academic affiliations.
Sharon Lall-Ramnarine Professor (Program co-Director)	CH-145: Radiation Safety I CH-146: Radiation Safety II CH-151: General Chemistry I	75%	Ph.D., City University of New York	https://www.gcc.cuny.edu/chemistry/facultyPages/SLall-Ramnarine/index.html
Paul Sideris Associate Professor (Program co-Director)	CH-145: Radiation Safety I CH-146: Radiation Safety II CH-151: General Chemistry I	75%	Ph.D., SUNY Stony Brook	https://www.gcc.cuny.edu/chemistry/facultyPages/PSideris/index.html
Moni Chauhan Professor	CH-152: General Chemistry II	50%	Ph.D., <i>Université Montpellier II</i>	https://www.gcc.cuny.edu/chemistry/facultyPages/chauhan.html
Tirandai Hemraj-Benny Professor	CH-151: General Chemistry I	50%	Ph.D., SUNY Stony Brook	https://www.gcc.cuny.edu/chemistry/facultyPages/THemraj-Benny/index.html
Kevin Kolack Lecturer	CH-151: General Chemistry I	25%	Ph.D., Indiana University	https://www.gcc.cuny.edu/chemistry/facultyPages/kkolack/index.html
Marlon Moreno Lecturer	CH-151: General Chemistry I	50%	M.S., St. John's University	

Faculty Member Name and Title/Rank at Institution (include and identify Program Director)	Expected Program Course Assignments	Percent of Teaching Time to Program	Highest and Other Applicable Earned Degrees and Disciplines (include College/University)	Additional Qualifications: list related certifications/licenses; professional experience in field, scholarly contributions, other academic affiliations.
David Sarno Associate Professor	CH-151: General Chemistry I CH-152: General Chemistry II	50%	Ph.D., SUNY Binghamton	https://www.gcc.cuny.edu/chemistry/facultyPages/sarno.html
Jun Shin Associate Professor	CH-151: General Chemistry I	25%	Ph.D., Columbia University	https://www.gcc.cuny.edu/chemistry/facultyPages/jshin/shin.html
Rex Taibu Associate Professor (Program co-Director for Physics)	RAD-101: Radiation Safety I RAD-102: Radiation Safety II PH-301: College Physics I	75%	Ph.D., Western Michigan University	https://www.gcc.cuny.edu/physics/faculty.html
Raul Armendariz Associate professor (Program co-Director for Physics)	RAD-101: Radiation Safety I RAD-102: Radiation Safety II PH-302: College Physics II	75%	Ph.D., New Mexico State University	https://www.gcc.cuny.edu/physics/faculty.html
David Lieberman Professor	PH-301: College Physics I	25%	Ph.D., SUNY Stony Brook	https://www.gcc.cuny.edu/physics/faculty.html
Paul Marchese Professor	PH-301: College Physics I	25%	Ph.D., Columbia University	https://www.gcc.cuny.edu/physics/faculty.html
Tak Cheung Professor	PH-301: College Physics II	25%	Ph.D., University of Illinois	https://www.gcc.cuny.edu/physics/faculty.html
Todd Holden Professor	PH-301: College Physics I	25%	Ph.D., City University of New York	https://www.gcc.cuny.edu/physics/faculty.html

Faculty Member Name and Title/Rank at Institution (include and identify Program Director)	Expected Program Course Assignments	Percent of Teaching Time to Program	Highest and Other Applicable Earned Degrees and Disciplines (include College/University)	Additional Qualifications: list related certifications/licenses; professional experience in field, scholarly contributions, other academic affiliations.
Vazgen Shekoyan Associate Professor	PH-301: College Physics I	25%	Ph.D., Rutgers University	https://www.gcc.cuny.edu/physics/faculty.html
Sunil Dehipawala	PH-301: College Physics I	25%	Ph.D., City University of New York	https://www.gcc.cuny.edu/physics/faculty.html

Table 3: Current Faculty, Part-Time

Provide information on faculty members who are part-time at the institution and who will be teaching each course in the major field or graduate program.

Faculty Member Name and Title/Rank at Institution (include and identify Program Director)	Program Courses which may be Taught	Highest and Other Applicable Earned Degrees and Disciplines (include College/University)	Additional Qualifications: list related certifications/licenses; professional experience in field, scholarly contributions, other academic affiliations.
Athanasios Glekas Adjunct Assistant Professor	CH-151: General Chemistry I	Ph.D., SUNY Stony Brook	
George Lyons Adjunct Assistant Professor	CH-151: General Chemistry I	Ph.D., City University of New York	https://www.qcc.cuny.edu/chemistry/facultyPages/lyons.html
Rosa Ronquillo Adjunct Lecturer	CH-152: General Chemistry II	M.S., Long Island University	
Gopal Subramaniam Adjunct Professor	CH-152: General Chemistry II	Ph.D., Vanderbilt University	https://www.qcc.cuny.edu/chemistry/facultyPages/subramaniam.html
Thomas Wong Adjunct Assistant Professor	CH-152: General Chemistry II	Ph.D., St. John's University	https://www.qcc.cuny.edu/chemistry/facultyPages/twong.html
Tan-na Lee Adjunct Associate Professor	PH-302: College Physics II	Ph.D., University of California, Los Angeles	https://www.qcc.cuny.edu/physics/faculty.html
Asema Shadab Adjunct Lecturer	PH-302: College Physics II	M.S., Kabul University	https://www.qcc.cuny.edu/physics/faculty.html
Guy Okoko Adjunct Assistant Professor	PH-301: College Physics II	Ph.D., City University of New York	https://www.qcc.cuny.edu/physics/faculty.html

Faculty Member Name and Title/Rank at Institution (include and identify Program Director)	Program Courses which may be Taught	Highest and Other Applicable Earned Degrees and Disciplines (include College/University)	Additional Qualifications: list related certifications/licenses; professional experience in field, scholarly contributions, other academic affiliations.

Table 4: Faculty to be Hired

- If faculty must be hired to teach in the proposed program, specify the title/rank of each new position, the number of new positions, full-time or part-time status, a listing of the expected course assignments for each position, and the expected hiring date.
- Position descriptions and/or announcements may also be submitted.
- Prior to offering the assigned courses, the Department must be notified that a faculty meeting the requirements has been hired.
- These proposed faculty should be reflected in Task 5, Table 4, New Resources

Full-time Faculty

Title/Rank of Position	# of New Positions	Minimum Qualifications (including degree and discipline area)	Expected Course Assignments	Expected Hiring Date (mm/dd/yyyy)
None				

Part-time Faculty

Title/Rank of Position	# of New Positions	Minimum Qualifications (including degree and discipline area)	Expected Course Assignments	Expected Hiring Date (mm/dd/yyyy)
None				

Task 5. Financial Resources and Instructional Facilities

Guidance for this task can be found by clicking here: [Department Expectations: Financial Resources and Instructional Facilities](#)

Relevant Regulations for this task can be found by clicking here: [Relevant Regulations for Task 5](#)

a) Summarize the instructional facilities and equipment committed to ensure the success of the program.

Answer: The Chemistry Department operates four fully equipped teaching laboratories. All the laboratories are equipped with computers, access to the Internet, various glassware, probes, ovens, hot-plates, and adequate plumbing for both hot and cold water. Each lab has one water filtration system for distilled water.

There is a dedicated instrumentation room that includes a UV-Vis spectrometer, and IR spectrometer, a permanent 2.1 Tesla magnet and corresponding nuclear magnetic resonance spectrometer, a GC/Mass spectrometer, high-performance liquid chromatography (HPLC), and a benchtop scanning electron microscope.

There are also two laboratories dedicated to undergraduate research. Each laboratory has fume hoods, ovens (one of which is a vacuum oven), hot and cold water, rotary evaporators, a microwave reactor, HPLC, and various specialized glassware for syntheses. One of the two undergraduate research laboratories has a specialized high-temperature furnace for solid state reactions.

The physics department has 4 laboratories including a student and faculty research room, a computer room, and a radiation and health physics lab. The labs are equipped with computers, tools, radiation monitoring equipment including several Geiger-Muller tubes and radiation counters, two NaI(Tl) crystal gamma-ray detectors; plastic scintillator and photomultiplier tube particle detectors, multichannel analyzer for gamma spectroscopy; NIM particle physics electronics including amplifiers, discriminators, coincidence units, and high voltage supplies; low-level radiation sources (exempt from requiring a site license) for alpha, beta, and gamma including Ba-133, Cd-109, Cs-137, Co-60, Zn-65, Na-22 and others.

b) Complete the new resources table (**Table 5**).

Not Applicable:

Table 5: New Resources

List the costs of the **new** resources that will be engaged specifically as a result of the new program (e.g., a new faculty position or additional library resources). New resources for a given year should be carried over to the following year(s), with adjustments for inflation, if they represent a continuing cost.

New Expenditures	Year 1	Year 2	Year 3
Personnel	0	0	0
Library	0	0	0
Equipment	\$50,000	0	0
Ludlum Model 3002 Survey Monitors			
Counts.Pro software			
Ludlum Model 26 GM detectors			
Ludlum Model 500 Pulsers			
Alpha/Beta Dual Phosphor Scintillators			
Ludlum Model 194 Scintillators			
Spectrum Techniques Radiation Absorber Sets			
Spectrum Techniques Source Sets			
Spectrum Techniques GP35- GM Detector Assemblies			
Spectrum Techniques Isotope Generator Kits			
All the equipment will be purchased using grant funds.			
Laboratories	0	0	0
Supplies & Expenses (Other Than Personal Service)	0	0	0
Capital Expenditures	0	0	0
Other	0	0	0
Total all	\$50,000.00	0	0

Task 6. Library Resources

Guidance for this task can be found by clicking here: [Department Expectations: Library Resources](#)

Relevant regulations for this task can be found by clicking here: [Relevant Regulations for Task 6](#)

- a) Summarize the analysis of library resources *for this program*** by the collection librarian and program faculty. Include an **assessment of existing library resources** and their accessibility to students.

Answer: No special library resources will be required beyond what is currently available at the College.

- b) Describe the institution's response to identified needs and its plan for library development.**

Answer: n/a

5. Program Revision

DEPARTMENT OF BIOLOGICAL SCIENCES & GEOLOGY, CHEMISTRY, MATHEMATICS & COMPUTER SCIENCE, AND PHYSICS

Program Revision: Liberal Arts & Sciences (Mathematics & Science) Associate in Science (A.S.) Degree

Departmental approval date: Biological Sciences & Geology: 2/20/24, Chemistry: 2/15/24, Mathematics & Computer Science: 2/20/24, Physics: 2/20/24

10.

Rationale: Why this revision is needed or desired.

The Chemistry and Physics departments are proposing a new certificate program in Radiation Safety. Students who complete that program and are preparing for transfer to a bachelor's program in the sciences will be recommended to pursue the LS-AS where their courses in radiation safety (RAD-101 and RAD-102) will count as major electives for the degree. Those students will be recommended to take **CH-151, CH-152, PH-301 and PH-302**, as well as other courses in physics, biology, and mathematics (see details below).

11.

11. Detailed Revisions

All text or items that will be deleted or changed should be marked with a strikethrough.

All new text, courses, credits, etc. should be marked by underlining.

Show the whole set of program requirements in a From/To format.

From:		To:	
Common Core	Credits	Common Core	Credits
REQUIRED CORE 1A: ENGL-101 English Composition I ENGL-102 English Composition II	6	REQUIRED CORE 1A: ENGL-101 English Composition I ENGL-102 English Composition II	6
REQUIRED CORE 1B: MA-119 ^{1,2} College Algebra	3	REQUIRED CORE 1B: MA-119 ^{1,2} College Algebra	3
REQUIRED CORE 1C: Life and Physical Sciences (one of the following required ² : BI-201, CH-151, PH-301, PH-311, or PH-421) The following options are recommended for students planning on pursuing a degree in one of the subjects listed below: Biology: BI-201 Chemistry: CH-151 Computer Science: BI-201, CH-151, PH-301, PH-311, or PH-421 Mathematics: PH-301, PH-311, or PH-421	4-5	REQUIRED CORE 1C: Life and Physical Sciences (one of the following required ² : BI-201, CH-151, PH-301, PH-311, or PH-421) The following options are recommended for students planning on pursuing a degree in one of the subjects listed below: Biology: BI-201 Chemistry: CH-151 Computer Science: BI-201, CH-151, PH-301, PH-311, or PH-421 Mathematics: PH-301, PH-311, or PH-421	4-5

From:		To:	
Physics: PH-421		Physics: PH-421 Radiation Safety: CH-151 or PH-301 (or PH-311 or PH-421)	
FLEXIBLE CORE 2A: World Cultures & Global Issues (select one from 2A)	3	FLEXIBLE CORE 2A: World Cultures & Global Issues (select one from 2A)	3
FLEXIBLE CORE 2B: U.S. Experience & Its Diversity SP-211 Speech Communication ²	3	FLEXIBLE CORE 2B: U.S. Experience & Its Diversity SP-211 Speech Communication ²	3
FLEXIBLE CORE 2C: Creative Expression (select one from 2C)	3	FLEXIBLE CORE 2C: Creative Expression (select one from 2C)	3
FLEXIBLE CORE 2D: Individual & Society (select one from 2D)	3	FLEXIBLE CORE 2D: Individual & Society (select one from 2D)	3
FLEXIBLE CORE 2E: Scientific World Two of the following required ² : BI-201, BI-202, CH-151, CH-152, CH-251, CH-252, MA-442, MA-443, MA-451, MA-461, CS-101 ³ , CS-201, CS-203 ³ , PH-301, PH-302, PH-311, PH-312, PH-421, PH-422 The following options are recommended for students planning on pursuing a degree in one of the subjects listed below: Biology: BI-202 and CH-151 Chemistry: CH-152 and CH-251 Computer Science: CS-101 ³ and CS-201 Mathematics: PH-302, PH-312, or PH-422 and MA-442 Physics: PH-422 and MA-442	8-10	FLEXIBLE CORE 2E: Scientific World Two of the following required ² : BI-201, BI-202, CH-151, CH-152, CH-251, CH-252, MA-442, MA-443, MA-451, MA-461, CS-101 ³ , CS-201, CS-203 ³ , PH-301, PH-302, PH-311, PH-312, PH-421, PH-422 The following options are recommended for students planning on pursuing a degree in one of the subjects listed below: Biology: BI-202 and CH-151 Chemistry: CH-152 and CH-251 Computer Science: CS-101 ³ and CS-201 Mathematics: PH-302, PH-312, or PH-422 and MA-442 Physics: PH-422 and MA-442 Radiation Safety: CH-151, CH-152, PH-301 or PH-311 or PH-421 and PH-302 (or PH-312 or PH-422)	8-10
Sub-Total	33-36	Sub-Total	33-36
Requirements for the Major			
Students must complete MA-441 and any pre-requisites, based on their math placement ¹ .		Students must complete MA-441 and any pre-requisites, based on their math placement ¹ .	
MA-121 Trigonometry	1	MA-121 Trigonometry	1
MA-440 Pre-Calculus Mathematics	4	MA-440 Pre-Calculus Mathematics	4
MA-441 Analytic Geometry and Calculus I	4	MA-441 Analytic Geometry and Calculus I	4

From:		To:	
Sub-Total	4-9	Sub-Total	4-9
<p>Select 9-18 credits of coursework (in addition to those already taken in the core) from:⁴</p> <p>BI-201, BI-202, BI-356, BI-357, BI-453, CH-151, CH-152, CH-251, CH-252, MA-442, MA-443, MA-451, MA-461, MA-471, MA-481, CS-101³, CS-201, CS-203³, CS-204, CS-220, PH-240, PH-301, PH-302, PH-303, PH-311, PH-312, PH-421, PH-422, PH-414, PH-415, PH-416, PH-431, PH-440, PH-450, PH-900</p> <p>The following courses are recommended for students planning on pursuing a degree in one of the subjects listed below (some courses may have been already taken to satisfy core areas 1C and 2E):⁴</p> <p>Biology: BI-201, BI-202, CH-151, CH-152, BI-356, BI-357, BI-453, PH-311, PH-312</p> <p>Chemistry: CH-151, CH-152, CH-251, CH-252, MA-442, MA-443, MA-451, PH-421, PH-422</p> <p>Computer Science: CS-101², CS-201, CS-203², CS-204, CS-220, MA-442, MA-461, MA-471, MA-481</p> <p>Mathematics:⁵ PH-301 (or PH-311 or PH-421), PH-302 (or PH-312 or PH-422), MA-442, MA-443, MA-451, MA-461, MA-471, MA-481</p> <p>Physics: PH-240, PH-303, PH-421, PH-422, PH-414, PH-415, PH-416, PH-431, PH-440, PH-450, PH-900, MA-442, MA-443, MA-451, MA-461</p>	9-18	<p>Select 9-18 credits of coursework (in addition to those already taken in the core) from:⁴</p> <p>BI-201, BI-202, BI-356, BI-357, BI-453, CH-151, CH-152, CH-251, CH-252, MA-442, MA-443, MA-451, MA-461, MA-471, MA-481, CS-101³, CS-201, CS-203³, CS-204, CS-220, PH-240, PH-301, PH-302, PH-303, PH-311, PH-312, PH-421, PH-422, PH-414, PH-415, PH-416, PH-431, PH-440, PH-450, PH-900, RAD-101, RAD-102</p> <p>The following courses are recommended for students planning on pursuing a degree in one of the subjects listed below (some courses may have been already taken to satisfy core areas 1C and 2E):⁴</p> <p>Biology: BI-201, BI-202, BI-356, BI-357, BI-453, CH-151, CH-152, PH-311, PH-312</p> <p>Chemistry: CH-151, CH-152, CH-251, CH-252, MA-442, MA-443, MA-451, PH-421, PH-422</p> <p>Computer Science: CS-101², CS-201, CS-203², CS-204, CS-220, MA-442, MA-461, MA-471, MA-481</p> <p>Mathematics:⁵ MA-442, MA-443, MA-451, MA-461, MA-471, MA-481, PH-301 (or PH-311 or PH-421), PH-302 (or PH-312 or PH-422)</p> <p>Physics: MA-442, MA-443, MA-451, MA-461, PH-240, PH-303, PH-421, PH-422, PH-414, PH-415, PH-416, PH-431, PH-440, PH-450, PH-900</p> <p>Radiation Safety: BI-201, CH-151, CH-152, MA-442, PH-301 (or PH-311 or PH-421), PH-302 (or PH-312 or PH-422), RAD-101, RAD-102</p>	9-18
Sub-Total	9-18	Sub-Total	9-18

Additional Requirements for the Major			
History or Social Sciences course ⁶		History or Social Sciences course ⁶	
HE-101 Introduction to Health Education	3	HE-101 Introduction to Health Education	3
or		or	
HE-102 Health Behavior & Society		HE-102 Health Behavior & Society	
One credit in PE-400 or PE-500 series or DAN-100 series (one credit courses only)	1-2	One credit in PE-400 or PE-500 series or DAN-100 series (one credit courses only)	1-2
	1		1
Sub-Total	5-6	Sub-Total	5-6
Total Credits Required	60	Total Credits Required	60

Program Notes

From:	To:
All students must successfully complete two writing-intensive classes (designated "WI") to fulfill degree requirements.	All students must successfully complete two writing-intensive classes (designated "WI") to fulfill degree requirements.

Course Notes (Number your notes).

From:	To:
¹ Students who place into MA-121, MA-440 or MA-441 will use that course to satisfy Required Core 1B. A higher math placement will allow students to take additional Major Requirement courses.	¹ Students who place into MA-121, MA-440 or MA-441 will use that course to satisfy Required Core 1B. A higher math placement will allow students to take additional Major Requirement courses.
² Students are required to take particular courses in some areas of the Common Core that fulfill both general education and major requirements. If students do not take the required courses in the Common Core, they will have to take additional credits to complete their degree requirements.	² Students are required to take particular courses in some areas of the Common Core that fulfill both general education and major requirements. If students do not take the required courses in the Common Core, they will have to take additional credits to complete their degree requirements.
³ ET-575 and ET-580 may not be substituted for CS-101 and CS-203	³ ET-575 and ET-580 may not be substituted for CS-101 and CS-203
⁴ Students must take <i>at least one two-course sequence in each of two different disciplines</i> (for example, BI-201 and 202; CH-151 and 152; PH-301 and 302; PH-311 and 312, PH-421 and 422; MA-441 and 442, CS-101 and CS-201, CS-203, or CS-204). Students should consult with their concentration department when choosing major requirement courses.	⁴ Students must take <i>at least one two-course sequence in each of two different disciplines</i> (for example, BI-201 and 202; CH-151 and 152; PH-301 and 302; PH-311 and 312, PH-421 and 422; RAD-101 and RAD-102 ; MA-441 and 442, CS-101 and CS-201, CS-203, or CS-204). Students should consult with their concentration department when choosing major requirement courses.

From:	To:
⁵ With permission of the Department of Mathematics and Computer Science, students in the TIMEQCC secondary mathematics program may count credits for EDUC-101 and INTE-221 toward the Major Requirements	⁵ With permission of the Department of Mathematics and Computer Science, students in the TIMEQCC secondary mathematics program may count credits for EDUC-101 and INTE-221 toward the Major Requirements
⁶ If taken in the Common Core, an additional course in the concentration is recommended.	⁶ If taken in the Common Core, an additional course in the concentration is recommended.

Write a summary for all of the changes.

RAD-101 and RAD-102 are added to the list of possible major electives. Guidance in choosing courses for the flexible core and the electives is added for students interested in radiation safety.

If the program revision includes course revisions or new courses, submit the appropriate Course Revision form and/or New Course Proposal Form, along with the Syllabus and Course Objectives form.

RAD-101 and RAD-102 are being proposed.

If courses will be deleted from the program, make clear whether the courses are to be deleted from the department's offerings as well.

No courses are being deleted from the program.

Explain briefly how students currently in the program will be able to complete the requirements.

Students may or may not choose to take RAD-101 and RAD-102

6. Program Revision

DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND DANCE

Program Revision: Dance

Departmental approval: February 7th, 2024

10. Rationale: Why this revision is needed or desired.

The Dance Program is seeing an increase in enrollment in the degree program (with the exception of a small drop from the pandemic). In addition to increased enrollment, we are having a significant number of students entering the program with strong dance technique. These students are being placed immediately into intermediate modern. However, while the degree requires 3 semesters of Modern Dance, they also typically take an additional semester of either ballet or modern to fulfill electives in dance. In order to facilitate their growth and progress, ensure they are prepared to both audition for and transfer to strong dance programs, as well as increase their chances for dance scholarships, another level of Intermediate Modern is necessary. This is also necessary in order to maintain our compliance with the standards for our accreditation with the National Association of Schools of Dance.

- 11. All text or items that will be deleted or changed should be marked with a ~~strikethrough~~.**
12. All new text, courses, credits, etc. should be marked by underlining.
13. Show the whole set of program requirements in a From/To format.

From:		To:	
Common Core	Credits	Common Core	Credits
REQUIRED CORE 1A.: ENGL-101 English Composition I ENGL-102 English Composition II	3 3	REQUIRED CORE 1A.: ENGL-101 English Composition I ENGL-102 English Composition II	3 3
REQUIRED CORE 1B.: Mathematical & Quantitative Reasoning (select from 1B)	3	REQUIRED CORE 1B.: Mathematical & Quantitative Reasoning (select from 1B)	3
REQUIRED CORE 1C.: Life & Physical Sciences (select one from 1C)	3-4	REQUIRED CORE 1C.: Life & Physical Sciences (select one from 1C)	3-4
FLEXIBLE CORE 2A.: World Cultures & Global Issues	3	FLEXIBLE CORE 2A.: World Cultures & Global Issues	3
FLEXIBLE CORE 2B: Required: SP-211 Speech Communication ¹	3	FLEXIBLE CORE 2B: Required: SP-211 Speech Communication ¹	3
FLEXIBLE CORE 2C: Required: DAN-111 Introduction to the Art of Dance ¹	3	FLEXIBLE CORE 2C: Required: DAN-111 Introduction to the Art of Dance ¹	3
FLEXIBLE CORE 2D.: Individual & Society (select one from 2D)	3	FLEXIBLE CORE 2D.: Individual & Society (select one from 2D)	3

FLEXIBLE CORE 2E.: Scientific World (select one from 2E)	3	FLEXIBLE CORE 2E.: Scientific World (select one from 2E)	3
FLEXIBLE CORE 2E.: Scientific World (select one from 2E)	3	FLEXIBLE CORE 2E.: Scientific World (select one from 2E)	3
FLEXIBLE CORE 2A, 2B, 2C, 2D or 2E: (select one course) ²	3	FLEXIBLE CORE 2A, 2B, 2C, 2D or 2E: (select one course) ²	3
Sub-Total	30-31	Sub-Total	30-31
Requirements for the Major		Requirements for the Major	
DAN-110 Foundations of Dance Movement	3	DAN-110 Foundations of Dance Movement	3
DAN-249 Dance Improvisation	2	DAN-249 Dance Improvisation	2
DAN-251 Choreography I	2	DAN-251 Choreography I	2
Three courses from Modern Dance Technique - level determined by placement class: DAN-124, DAN-125, DAN-126, DAN-127, DAN-220, DAN-221, or DAN-222	6	Three courses from Modern Dance Technique - level determined by placement class: DAN-124, DAN-125, DAN-126, DAN-127, DAN-220, DAN-221, DAN-222, or DAN-223	6
Three courses from Ballet Technique - level determined by placement class: DAN-134, DAN-135, DAN-136, DAN-137, DAN-230, DAN-231, or DAN-232	6	Three courses from Ballet Technique - level determined by placement class: DAN-134, DAN-135, DAN-136, DAN-137, DAN-230, DAN-231, or DAN-232, or DAN-233	6
Two courses from Repertory or Workshop - determined by audition: DAN-160, DAN-161, DAN-260 ³ , DAN-261 ³ , or DAN-262 ³	4-6	Two courses from Repertory or Workshop - determined by audition: DAN-160, DAN-161, DAN-260 ³ , DAN-261 ³ , or DAN-262 ³	4-6
2-4 credits selected from the following ⁴ : DAN-103, DAN-124, DAN-125, DAN-126, DAN-127, DAN-134, DAN-135, DAN-136, DAN-137, DAN-140, DAN-220, DAN-221, DAN-222, DAN-230, DAN-231, DAN-232, DAN-252, DAN-270, DAN-271, DAN-272	2-4	2-4 credits selected from the following ⁴ : DAN-103, DAN-124, DAN-125, DAN-126, DAN-127, DAN-134, DAN-135, DAN-136, DAN-137, DAN-140, DAN-220, DAN-221, DAN-222, DAN-223 , DAN-230, DAN-231, DAN-232, DAN-233 DAN-252, DAN-270, DAN-271, DAN-272	2-4
Sub-Total	27-28	Sub-Total	27-28
Additional Requirements for the Major		Additional Requirements for the Major	
HE-101 Personal Health and Wellness or HE-102 Health Behavior & Society	1-2	HE-101 Personal Health and Wellness or HE-102 Health Behavior & Society	1-2
DAN-103 African and Afro-Caribbean Dance or PE-530 Yoga	1	DAN-103 African and Afro-Caribbean Dance or PE-530 Yoga	1
Laboratory Science ⁵ : BI-132, BI-171, CH-102, CH-111, CH-121, ET-842, or PH-112	1	Laboratory Science ⁵ : BI-132, BI-171, CH-102, CH-111, CH-121, ET-842, or PH-112	1
Sub-Total	2-4	Sub-Total	2-4

Total	60	Total	60
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14. Add all Program notes in 14A.

Add all Course notes in 14B (Number your notes).

14A. Program Note

From:	To:
All students must successfully complete two (2) writing-intensive classes (designated "WI") to fulfill degree requirements.	All students must successfully complete two (2) writing-intensive classes (designated "WI") to fulfill degree requirements.

14B. Course Note

From:	To:
1. Students are required to take particular courses in some areas of the Common Core that fulfill both general education and major requirements. If students do not take the required courses in the Common Core, they will have to take additional credits to complete their degree requirements.	1. Students are required to take particular courses in some areas of the Common Core that fulfill both general education and major requirements. If students do not take the required courses in the Common Core, they will have to take additional credits to complete their degree requirements.
2. Recommended: select course from Flexible Core Creative Expression in concentration discipline	2. Recommended: select course from Flexible Core Creative Expression in concentration discipline
3. Audition required	3. Audition required
4. Fewer than 4 credits required for students who take workshop only.	4. Fewer than 4 credits required for students who take workshop only.
5. Students who have taken a STEM Variant course in the Common Core 1C have fulfilled this requirement.	5. Students who have taken a STEM Variant course in the Common Core 1C have fulfilled this requirement.

15. Write a summary for all of the changes.

We have added DAN 223 Intermediate Modern Dance IV and DAN 233 Intermediate Ballet IV to be courses to count towards the degree in the categories of requirements for Modern Dance (DAN 223) and Ballet (DAN 233) as well as for dance electives.

16. If the program revision includes course revisions or new courses, submit the appropriate Course Revision form and/or New Course Proposal Form, along with the Syllabus and Course Objectives form.

The courses have already been approved by the Curriculum Committee and Academic Senate as well as the Chancellor. This program revision is to allow the courses to be counted towards the degree.

17. If courses will be deleted from the program, make clear whether the courses are to be deleted from the department's offerings as well.

18. Explain briefly how students currently in the program will be able to complete the requirements

This particularly applies to students who enter at the Intermediate Level. It will allow them to complete the degree requirements at the appropriate level to stay in compliance with the standards for our accreditation with the National Association of Schools of Dance.

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7. Course Revision

DEPARTMENT OF MUSIC

Departmental Approval: January 24th, 2024

MUS 141, 142, 143, 144

1. **Department:** Music

Month	Day	Year
1	24	2024
2	2	2024
2	20	2024

2. **Date Approved by Department:**

3. **Date Consulted with the Office of Academic Affairs:**

4. **Date submitted to the Committee on Curriculum:**

5. **Date approved by the Committee on Curriculum:**

6. **State if the proposal was discussed with other department chair(s) with similar interests.**
 Yes* No

*If yes, which departments(s): _____

7. **Is this an experimental course?**
 Yes* No

Month	Day	Year

If yes, date approved by the President"

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In the **From** and **To** sections, include all pertinent information:

	From	To
8. Course Prefix & Number:	MUS 186, 187, 286, 287	MUS <u>141, 142, 143, 144</u>
9. Course Title:	Convocation I, II, III, IV	Convocation I, II, III, IV
10. Hours & Credits (Specify if class hours, lab. hours, recitation hours, etc.)	0.5 cr.; Offered as needed	0.5 cr.; Offered as needed
11. Pre-requisites (if any)		
12. Co-requisites (if any)	Individual Study in Music Performance I, II, III, IV	Individual Study in Music Performance I, II, III, IV

<p>13. Course Description (for College Catalog):</p>	<p>A recital and master class hour for students, department ensembles, and guest performers meeting twice each month. Pass/Fail</p>	<p>A recital and master class hour for students, department ensembles, and guest performers meeting twice each month. Pass/Fail</p>
<p>14. Curricula into which the course would be incorporated and the requirements it will satisfy:</p>	<p>A.S. Music Degree</p>	
<p>15. Rationale:</p>	<p>Due to a system issue in Degreeworks, the course numbers must be changed.</p>	
<p>16. Transferability as an elective or course required by a major to senior colleges (with supporting documents if applicable). Include comparable courses at senior or other community colleges, if applicable:</p>	<p>N/A</p>	
<p>17. List of courses to be withdrawn or replaced by this course, if any:</p>	<p>None</p>	
<p>18. What changes in any programs will be necessitated</p>	<p>None</p>	

or requested as a result of this course's changes:

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8. Course Revision

DEPARTMENT OF MUSIC

Departmental Approval: January 24th, 2024

Mus-102

1.	Department:	MUSIC	Month	Day	Year
2.	Date Approved by Department:		1	24	2024
3.	Date Consulted with the Office of Academic Affairs:		2	2	2024
4.	Date submitted to the Committee on Curriculum:		2	20	2024
5.	Date approved by the Committee on Curriculum:				
6.	State if the proposal was discussed with other department chair(s) with similar interests.		Yes*	No	
	*If yes, which departments(s):			X	
7.	Is this an experimental course?		Yes*	No	
				X	
			Month	Day	Year
	If yes, date approved by the President"				

In the **From** and **To** sections, include all pertinent information:

	From	To
8. Course Prefix & Number:	MUS 102	
9. Course Title:	Survey of Western Music	<u>The European Classical Music Tradition</u>
10. Hours & Credits (Specify if class hours, lab. hours, recitation hours, etc.)	3 credits, 3 class hours	3 credits, 3 class hours
11. Pre-requisites (if any)	Students must complete any developmental requirements in English (see proficiency in Math and English) prior to taking this course.	Students must complete any developmental requirements in English (see proficiency in Math and English) prior to taking this course.
12. Co-requisites (if any)	None	None

13. Course Description (for College Catalog):

<p>Designed to develop understanding and taste in music. Representative works of great masters of the Renaissance, Baroque, Romantic, and modern eras provide material for analysis of musical style and design. Seeks to develop intelligent listening habits and recognition of specific forms and idioms. Musical styles compared to art and literature of the appropriate period. Required readings, listening, and concert attendance. Students may not receive credit for both MUS-101 and MUS-102. MUS-102 is intended for students who have a background in music, or who anticipate majoring in music.</p>	<p><u>This is an introductory course, designed to develop an understanding of the European classical music tradition of the 18th and 19th centuries. After an examination of the elements of music and principles of structure and design in music, representative works of the Baroque, Classical, and Romantic eras will be studied. The course aims to develop intelligent listening skills, and to promote an understanding of musical style. Students may not receive credit for both MUS-101 and MUS-102.</u></p>
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14. Curricula into which the course would be incorporated and the requirements it will satisfy:

MUS 102 is currently approved as a CUNY Pathways Common Core course (Flexible Core 2C – Creative Expression). Its status as an approved course will not change as a result of this revision, and it would remain an eligible choice for a student in any degree program who is seeking to fulfill the Flexible Core 2C requirement.

15. Rationale:

The rationale is simple. There is a history of confusion on the part of some students who either enroll in the course, or who seek advice about whether or not to enroll: they do not understand the concept of “Western Music,” as it is named in the course’s title. The instructor, on more than one occasion, has been confronted with students who want to take the course, but are worried that the focus will be too much on “country and western music” or “cowboy songs.” This revision seeks to make clear that the literature studied in this course consists of music from the 18th and 19th century European tradition, denoted commonly by the moniker “Classical Music.” In further support of the revision, we note that the course description for MUS 101 Introduction to Music was changed two years ago. The description formerly mentioned that the literature studied in MUS 101 was comprised of “representative works of the great masters of the Baroque, Classical, Romantic and Modern eras.” This was changed in the 2021-2022 academic year to read that “significant periods of musical history within but not limited to the Western art music tradition” will be studied. This proposed revision of MUS 102 should make it clear to prospective students that the course’s focus will rest solely on the music literature of the European Classical music tradition of the 18th and 19th centuries, and that if they

are looking for a course which covers only Classical music and not other styles, this is the course they should register for.

16. Transferability as an elective or course required by a major to senior colleges (with supporting documents if applicable). Include comparable courses at senior or other community colleges, if applicable:

N/A

17. List of courses to be withdrawn or replaced by this course, if any:

None

18. What changes in any programs will be necessitated or requested as a result of this course's changes:

None