New York City College of Technology, CUNY

CURRICULUM MODIFICATION PROPOSAL FORM

This form is used for all curriculum modification proposals. See the [Proposal Classification Chart](http://openlab.citytech.cuny.edu/collegecouncil/files/2014/08/2013-10-09-Proposal_Classification_Chart.pdf) for information about what types of modifications are major or minor. Completed proposals should be emailed to the Curriculum Committee chair.

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| **Title of Proposal** | **Minor Changes to the Minor in Physics** |
| **Date** | **2/24/2020** |
| **Major or Minor** | **Minor** |
| **Proposer’s Name** | **Giovanni Ossola** |
| **Department** | **Physics** |
| **Date of Departmental Meeting in which proposal was approved** | **3/5/2020** |
| **Department Chair Name** | **German Kolmakov** |
| **Department Chair Signature and Date** | C:\Users\gkolmakov\Dropbox\Teaching\2016-Fall\PHYS-1442\gerasignature.jpg |
| **Academic Dean Name** | **Justin Vazquez-Poritz** |
| **Academic Dean Signature and Date** |  March 18, 2020 |
| **Brief Description of Proposal**(Describe the modifications contained within this proposal in a succinct summary. More detailed content will be provided in the proposal body. | Minor modification to the requirements for the Minor in Physics, which is available to all students enrolled in a Bachelor program at City Tech. The completion of the Physics Minor would now require the completion of four courses in Physics (rather then five). The calculus-based sequence of General Physics plus any two courses at the 2000 level or higher. |
| **Brief Rationale for Proposal**(Provide a concise summary of why this proposed change is important to the department. More detailed content will be provided in the proposal body).  | These changes aim at making the Minor in Physics more accessible to students which are pursuing non-Physics Bachelor degrees at City Tech, within the framework of the available elective credits allowed by their programs. It also extends the possible options available within the Minor to courses above 2000 level. |
| **Proposal History**(Please provide history of this proposal: is this a resubmission? An updated version? This may most easily be expressed as a list). | No previous history. |

Please include all appropriate documentation as indicated in the Curriculum Modification Checklist.

For each new course, please also complete the New Course Proposal and submit in this document.

Please submit this document as a single .doc or .rtf format. If some documents are unable to be converted to .doc, then please provide all documents archived into a single .zip file.

**ALL PROPOSAL CHECK LIST**

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| --- | --- |
| Completed CURRICULUM MODIFICATION FORM including: |  |
| * Brief description of proposal
 | Y |
| * Rationale for proposal
 | Y |
| * Date of department meeting approving the modification
 | Y |
| * Chair’s Signature
 | Y |
| * Dean’s Signature
 |   |
| Evidence of consultation with affected departmentsList of the programs that use this course as required or elective, and courses that use this as a prerequisite. | Y |
| Documentation of Advisory Commission views (if applicable). | N/A |
| Completed [Chancellor’s Report Form](http://openlab.citytech.cuny.edu/collegecouncil/files/2014/08/2013-10-09-Chancellor_Report_Quick_Reference_Guide1.doc). | Y |

**EXISTING PROGRAM MODIFICATION PROPOSALS**

|  |  |
| --- | --- |
| Documentation indicating core curriculum requirements have been met for new programs/options or program changes.  | N/A |
| Detailed rationale for each modification (this includes minor modifications) | Y |

**Rationale for the Proposed Minor Changes**

The present proposal targets a minor curriculum changes in the Minor in Physics program, which is presently available for all students, in particular those enrolled in in Bachelor programs in science, mathematics, and engineering.

The completion of the Minor in Physics would currently require the completion of five courses in Physics: the calculus-based sequence of General Physics PHYS 1441-1442, Modern Physics PHYS 2443, plus any two courses at the 2000 level.

While several students manifested their interest in completing the Minor in Physics together with their Bachelor degrees, most recently from Engineering and Chemistry Programs, it often happened that the number of elective slots allowed by their program could hardly accommodate three additional courses in addition to the General Physics sequence.

In addition, we observed a certain amount of overlap between the content of “Modern Physics PHYS 2443”, which is currently a required course within the Minor in Physics, and other courses available to students as electives, such as for example “Introduction to Quantum Mechanics PHYS 2607”.

After extensive discussions within the Physics Department and with the chairs of the affected departments, we realized that some changes would be needed to allow more students to benefit from the program. We therefore propose to remove “Modern Physics PHYS 2443” from the list of required courses. Requirements for the completion of the Physics Minor will now read as: “The Physics minor requires the completion of four courses in Physics: two required courses (PHYS 1441 - PHYS 1442) and a choice of two additional elective courses in Physics at the 2000 level or higher”. The total number of credits required will range between 16 and 18 credits, according to the choice of the elective courses.

We note, as an additional effect of the proposed minor change, that we will provide to the students the additional flexibility of selecting elective courses above the 2000 level. For example, students interested in “Classical Mechanics PHYS 3100” or “Electricity and Magnetism PHYS 3200”, which are at the 3000-level, might now include these classes in their curricula as part of the Physics Minor. Such courses would be a good fit in the coursework of Mathematics and Engineering students, respectively.

**Evidence of consultation with affected departments**

1. Interaction with Chair of Chemistry Department

Dear Giovanni,

After reviewing the changes, I concur that this modification will better suit the needs of our students who seek the Physics minor.   I support this change.

Regards,
Diana

Diana SAMAROO, PhD

Department of Chemistry | Chair

CUNY - New York City College of Technology

285 Jay Street, A516, Brooklyn,
NY 11201

email: dsamaroo@citytech.cuny.edu

main: 718.260.5850/5853

**From:** German Kolmakov
**Sent:** Thursday, March 5, 2020 2:48 PM
**To:** Diana Samaroo
**Subject:** Physics Minor modification

Dear Diana,

Physics plan to make minor modification of our existing Physics minor.

Specifically, it is planned (1) to reduce the number of required credits and (2) include new 2000 and 3000 level courses into the minor.

The over-arching goal is to make the minor more accessible to the students and to serve the student cohort better.

I am sure that in the modified form, the physics minor would serve your Chemistry students in a better way.

Would it be possible for you to review the proposal and give me your response if you support it?

Thank you in advance,

German

1. Interaction with Chair of Math Department (Dr. Han) and Program Director of Applied Math Program (Dr. Natov).

**From:** Jonathan Natov

**Sent:** Saturday, March 7, 2020 7:07 PM

**To:** Sandie Han; Huseyin Yuce; Urmi Ghosh-Dastidar; Nadia Benakli; Boyan Kostadinov

**Cc:** German Kolmakov

**Subject:** Re: Physics Minor modification

This is a good proposal. Applied Math majors will have an easier path to the Physics minor.

Professor Jonathan Natov

Coordinator, Applied Mathematics

Department of Mathematics, N727

NYC College of Technology

300 Jay Street, Brooklyn NY 11201

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From: Sandie Han

Sent: Thursday, March 5, 2020 4:01:46 PM

To: Jonathan Natov; Huseyin Yuce; Urmi Ghosh-Dastidar; Nadia Benakli; Boyan Kostadinov

Cc: German Kolmakov

Subject: FW: Physics Minor modification

Dear colleague,

Please see the proposal for Physics Minor, and let German know if you have any suggestions. Thanks.

Sandie Han, Ph.D.

Mathematics Department, Chair

New York City College of Technology

300 Jay Street, N711

Brooklyn, NY  11201

718-260-5380

shan@citytech.cuny.edu<mailto:shan@citytech.cuny.edu>

From: German Kolmakov

Sent: Thursday, March 05, 2020 3:58 PM

To: Sandie Han <SHan@citytech.cuny.edu>

Subject: Physics Minor modification

Dear Sandie,

Following our conversation, I should be extremely grateful for your advice.

Physics plan to make minor modification of our existing Physics minor.

Specifically, it is planned (1) to reduce the number of required credits and (2) include new 2000 and 3000 level courses into the minor.

The over-arching goal is to make the minor more accessible to the students and to serve the student cohort better.

I am sure that in the modified form, the physics minor would serve students in your Math programs in a better way.

Would it be possible for you to review the proposal and give me your response if you support it?

Thank you in advance,

German

**Section AIII: Changes in Degree Programs**

**The following revisions are proposed for the Minor in Physics**

**Program: Minor in Physics**

**Program Code:**

**Effective Date: Fall 2020**

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| --- | --- |
| **FROM:** | **TO:** |
| **Degree Requirements:** **REQUIRED COURSES IN THE MINOR** PHYS 1441 General Physics I: Calculus Based 5 crPHYS 1442 General Physics I: Calculus Based 5 cr~~PHYS 2443 or PHYS 2443ID Principles of Modern Physics 4 cr~~**~~Two additional courses at the 2600 level~~** ~~PHYS 2601 Introduction to Research 3 cr~~~~PHYS 2603 Principles of Medical Imaging 3 cr~~~~PHYS 2605 Introduction to Laser Physics and Photonics 4 cr~~~~PHYS 2607 Introduction to Quantum Mechanics 3 cr~~~~PHYS 2609 Introduction to Quantum Computing 4 cr~~**TOTAL CREDITS REQUIRED ~~20-22~~** | **Degree Requirements:** **REQUIRED COURSES IN THE MINOR** PHYS 1441 General Physics I: Calculus Based (5 cr)PHYS 1442 General Physics I: Calculus Based (5 cr)**Two additional courses at the 2000 level or higher (6-8 cr)** **TOTAL CREDITS REQUIRED 16-18** |

**Rationale:** These changes aim at making the Minor in Physics more accessible to students which are pursuing non-Physics Bachelor degrees at City Tech, within the framework of the available elective credits allowed by their programs. It also extends the possible options available within the Minor to courses above 2000 level.