New York City College of Technology

Interdisciplinary Committee

Change of Interdisciplinary Format Form for an Existing Course

(or designated section of an existing ID course)

DATE: 3/10/18

COURSE NUMBER AND TITLE: PHYS3600ID – Machine Learning for Physics and Astronomy

CREDIT HOURS: 4 hours, 3 credits

CURRENT COURSE DESIGNATION: 🞏College Option 🞏Elective 🞏Capstone 🞏Other

DEPARTMENT HOUSED IN: Physics

CATALOG DESCRIPTION: Problem solving in physics and astronomy through statistical inference, machine learning algorithms and data mining techniques. Researching and solving problems in different areas of physics using tools such as Bayesian statistics, Monte Carlo sampling, regression and classification algorithms, dimensionality reduction and data cleaning. Programming assignments use current, flexible languages, such as Python.

CURRENT STRUCTURE: We are currently offering the course as ID for the first time, with a credit sharing structure divided in 3 credits (Physics), and 1 credit (CST).

NUMBER OF SECTIONS CURRENTLY OFFERED: Fall semester\_\_1 \_\_\_ Spring semester\_\_\_1\_\_

IF CO-TAUGHT, CURRENT CREDIT DISTRIBUTION:

PROPOSED CHANGE IN INTERDISCIPINARY FORMAT:

**From:** 🞏Guest lecturers \_\_ minimum 20% \_\_other % Co-taught Shared credits 🞏Trading credits

**To:** 🞏Guest lecturers\_\_x\_ minimum 20% \_\_other % 🞏Co-taught 🞏Shared credits 🞏Trading credits

PROPOSED BY: Viviana Acquaviva

Briefly explain reasoning for changing the format of the currently offered sections, or if new sections of the course are being offered for the first time, explain briefly the rationale for the change in format.

We believe that students would benefit from the specialized expertise of highly qualified lecturers on advanced topics. Thanks to the very hands-on nature of this course, students will not only be exposed to a variety of cutting edge problems and tools, but they will also have the opportunity to network with professionals in the machine learning field, working both in academia and industry.