

# MATH AND SCIENCE (MSCI)

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## **MSCI-536 Toxics in the Environment - (1 Credit)**

This course focuses on toxic and hazardous substances in the environment, with particular emphasis on trace metals and organic compounds associated with construction materials and the urban/industrial environment. It examines issues such as urban air quality and indoor air pollution, the persistence of toxic chemicals in the environment, and the regulation and cleanup of toxic substances. Case study discussion focuses on sources and exposure to toxic substances in the built environment in general, and the New York City urban environment in particular.

## **MSCI-590 Special Studies in Science - (3 Credits)**

Special studies courses cover a variety of new or experimental topics for graduate students. The subject matter changes from semester to semester, as a reflection of new scholarly developments and student/faculty interests. Since schedules and topics change frequently, students should seek information on current MSCI-590 offerings from the Department of Math and Science at [sci@pratt.edu](mailto:sci@pratt.edu) or check the Department's web page: <https://www.pratt.edu/academics/liberal-arts-and-sciences/mathematics-and-science/math-science-courses/>

## **MSCI-610 Science of Sustainability - (3 Credits)**

The Brundtland Commission in 1987 defined 'sustainability' as meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. The Science of Sustainability course explores some of the major scientific issues behind our understanding of sustainability. Through lectures, readings, and discussions, the class will explore such issues as biodiversity, population, food and water resources, climate change, energy, public health, and the overall forecast for the environment and the human condition for the next several decades. Students will gain a greater appreciation of how science can inform the policies and practices that will shape a more sustainable future.

## **MSCI-620 The Science of Light - (3 Credits)**

This course introduces Pratt graduate students to light and optical phenomena in nature and technology and will acquaint them with various physical aspects of light. We will delve into optical effects in nature such as the formation of rainbows, the colors of the sky and bubbles, mirages, the formation of images by our eyes and reception of those images by the rods and cones of our retinas. The use of light in technology will be explored by examining topics such as fiber optics, light sources (from the sun to light bulbs to pixels), one-way mirrors, 3D movie glasses, and image formation with pinholes, lenses and mirrors. Special attention will be paid to the operating principles and functioning of cameras, including lenses, viewfinders, apertures, and filters.