Spring 2017 Courses

The Universe – AST203

Christopher Chyba (with David Spergel and Anatoly Spitkovsky)

This specially designed course targets the frontier of modern astrophysics. Subjects include the planets of our solar system, the birth, life, and death of stars; the search for extrasolar planets and extraterrestrial life; the zoo of galaxies from dwarfs to giants, from starbursts to quasars; dark matter and the large-scale structure of the universe; Einstein's special and general theory of relativity, black holes, neutron stars, and big bang cosmology. This course is designed for the non-science major and has no prerequisites past high school algebra and geometry. High school physics would be useful.

PhD Gateway in Security Studies – WWS550

Christopher Chyba (with Aaron Friedberg and Jacob Shapiro)

The field of Security Studies is distinguished by its focus on a clearly delineated set of intellectual and practical problems. This course will serve as the required gateway for all students entering the Woodrow Wilson School.

Science and Global Security: From Nuclear Weapons to Cyberwarfare – WWS 353/MAE353

Alexander Glaser

This course provides students with a basic technical understanding of the science and technology relevant to current and emerging national and global security issues. Topics covered in this course include nuclear weapons and their proliferation, biotechnology and biosecurity, delivery systems for weapons of mass destruction, new media and big data, cyberwarfare, machine learning, autonomous weapons, and superintelligence. In the second half of the semester, students work in small teams on in-depth case studies exploring a current or emerging global-security issue of their choice and combining both technical and policy analysis.

Hogs, Bats, and Ebola: An Introduction to One Health Policy – FRS120

Laura H. Kahn

This interdisciplinary seminar will cover subjects such as basic epidemiology, public health and policy, basic microbiology, food safety and security, human evolution and nutrition, history of meat production and consumption, essentials of zoonotic diseases, the politics of antibiotic resistance, and the national and international organizations that oversee health and agriculture. A series of disease outbreaks will be discussed and analyzed including Severe Acute Respiratory Syndrome (SARS), avian influenza, Nipah virus, Q fever, and the Ebola virus.