Climate Change correlate:

Anthropogenic climate change is an existential threat for species and human communities across the globe. Humans have raised levels of atmospheric greenhouse gasses beyond those seen for the past many millions of years, and the rates at which these gasses are increasing far surpasses those associated with mass extinction events in Earth history. This correlate sequence seeks to provide a deep understanding of how Earth's climate system functions, natural and human-induced drivers of climatic change, and impacts of such change on our planet's physical, chemical, and biological systems. Courses also address climate change mitigation and adaptation.

Course requirements:

One course at the 100 level from the following selection of courses (ENST 107, ENST 124, ESCI 153); one course at the 200 level from the following selection of courses (ESCI/ENST 277, ESSC 202, ENST 254, GEOG 256, GEOG 266); one course at the 300 level from the following selection of courses (BIOL 356, GEOG 340*, EDUC 375, ESCI 325, ESCI 335, ESCI 361); three additional units from the list of approved courses (no more than one of these at the 100 level) chosen in consultation with the student's correlate sequence advisor.

This correlate is jointly housed in ESSC and ENST. In general, if a student takes 4 or more of the 6 units in ESCI and GEOG, they should register the correlate as ESSC; if a student takes the majority of their courses outside ESCI and GEOG, they should register the correlate as ENST. This can be decided in consultation with the correlate adviser.

**Course topics change, so topic must be approved by the correlate adviser.*

Core courses

Introductory level (one unit):

ENST 107 – Global Change (*Covers the basics of the climate system, Earth's carbon cycle, and how humans are impacting these*)

ENST 124 - Essentials of Environmental Science (*This course is about half climate change, including basics of the climate system, natural causes of climate change and the climate change record, impacts of anthropogenic climate change on terrestrial and marine ecosystems as well as on ice sheet melting and subsequent sea level rise*)

ESCI/ENST/GEOG 153 - Fluid Earth: Oceans, Atmosphere and the Climate System (*Covers oceanic and atmospheric circulation and their roles in determining Earth's climate; also discusses natural climate change causes and evidence, how humans are altering the climate system, and science-based climate change solutions*)

Intermediate level (one unit):

ENST 254 – Environmental Science in the Field (*Depending on content. Many ENST 254 courses include content on climate change, environmental impacts of fossil fuel extraction, and/or alternative energy solutions*)

ESCI/ENST 277- Biogeochemistry (*Investigates the fundamentals of the climate system, including carbon and nutrient cycling, as well as climate impacts on global biogeochemical cycling and society)*

ESSC 202 - Public Policy and the Environment (*Water and Cities has content related to climate change, such as increasing hurricane risk in a warming world and its impact on urban environments, how climate change threatens urban water resources, and how coastal cities are planning for sea level rise*)

GEOG 256 – Geographies of Food and Farming (*Substantial content on climate as related to agricultural production*)

GEOG 266 – Population, Environment, and Sustainable Development (*Content on human impacts on the climate system and on how changes in climate affect humans*)

Advanced level (one unit):

BIOL 356 - Plants, Climate, and Society (*Examines how environmental factors that are influenced by climate change - including temperature, water availability, increased carbon dioxide and others - impact plant function at the molecular, physiological and ecological levels, and how these impacts will affect society-at-large.)*

EDUC 375 - Science, Spirituality, & Peace Education: Addressing Climate Change *(Examines global responses to climate change through the lens of peace education and global religions and spirituality. Explores how various religious traditions conceive of nature, stewardship, and climate change and their "call" to address it.)*

ESCI 325 - Mass Extinctions *(Investigates past climate events and mass extinctions, comparing them to modern climate and biodiversity crises)*

ESCI 335 – Paleoclimatology (*Extensive study of the climate system and how it has changed over time due to natural factors. The course also includes an intensive project in which students develop a climate change history for the Hudson Valley region from a lake sediment core they extract and analyze*)

ESCI 361 - Modeling the Earth (*Numerical modeling of aspects of the climate system, including Earth's temperature, impact of greenhouse gasses on ocean acidity, global warming as recorded in permafrost temperature profiles, and other topics)*

GEOG 340* - Advanced Urban and Regional Studies (*Course topics change, so topic should be approved by adviser. Arctic Environmental Change addresses climate dynamics and change impacts on arctic ecosystems, with a focus on IPCC reports and primary*

literature; Renewable Energy and Climate Action addresses climate mitigation technology and policy, focusing on climate policy documents and primary literature)

Electives (3 additional units, drawn from the following list of approved courses. Students may petition for other courses not on this list to be considered as long as those courses deal with climate change as at least ⅓ of their content.)

AFRS/ENST 258 – Environment and Culture in the Caribbean (*Includes coverage of the impacts of deforestation and climate change on Caribbean states*)

BIOL 241 – Ecology (*Discusses climate change impacts on ecosystems and species interactions*)

BIOL 352 – Conservation Biology (*Discusses the impact on climate change on ecosystem function, ecosystem services, and biodiversity, as well as the importance of restoration for carbon sequestration and climate mitigation efforts*)

ECON/STS 267 - Environmental and Natural Resource Economics (*Discusses climate change and the loss of biodiversity from an economic perspective.*)

ECON 382 - Economics of Disasters *(Substantial content on climate-related disasters such as fires in California and Australia and the socio-economic impacts, mitigation, and adaptation.)*

EDUC 375 - Science, Spirituality, & Peace Education: Addressing Climate Change *(see above)*

ENST 162 - Climate Solutions and Climate Careers: Finding your role in the climate fight (*Emphasizes solutions to the climate crisis and careers students might want to pursue in order to be change agents*)

ENST 177 - Prehistoric Perspective on Climate Change (*This first-year-writing seminar examines paleontological evidence for climate change. We use the past as a lens for viewing the present, including the suggestion that we are in a new human-made geological epoch, e.g. the Anthropocene or Capitalocene.)*

ENST 254 – Environmental Science in the Field (*see above*)

ENST/AMST 264 - Apocalypse Now: Finding Apocalypse Now: Agency and Optimism in a Deteriorating World *(An exploration of how humans must confront the challenges of global climate change and the collateral hazards associated with it, with a focus on resilience and adaptation.)*

ENST/SOCI 266 - Racism, Waste and Resistance (*Examines the destructive global dynamics of environmental racism and resistance, and struggles against it, including such topics as climate justice, climate apartheid, and climate refugees.*)

ESCI 203 – Earth History (*Covers past climatic changes on Earth and their causes, including Snowball Earth and the Paleocene-Eocene Thermal Maximum*)

ESCI 265 - Resource Extraction (*Discusses the environmental, socioeconomic, and cultural impacts of resource extraction and energy production on communities in the U.S. Appalachian area and the island of Trinidad and addresses the challenges and solutions for sustainability and environmental justice faced by these communities.*)

ESCI 335 – Paleoclimatology (*see above*)

ESCI 361 - Modeling the Earth (*see above*)

ESSC 202 – Public Policy and the Environment (*see above*)

GEOG 220 – Cartography (*Included because of the spatial/mapping needs of displaying climatic information*)

GEOG 224 – GIS (*Included because of the spatial/mapping needs of displaying climatic information*)

GEOG 238 – Environmental China (*Discusses Chinese energy use, low carbon development*)

GEOG 246 – The U.S.-Mexico Border: Nation-State and Nature (*Discusses climate of the border region, water resources, and how these factors are changing due to anthropogenic warming)*

GEOG 250 – Urban Geography (*Discusses urban planning for carbon footprint reduction, walkability, friendliness to bicycles, and urban ecology)*

GEOG 252 – Cities of the Global South (*Discusses impacts of climate change on water provision as well as impacts of sea level rise on global cities in the developing world*)

GEOG 256 – Geographies of Food and Farming (*see above*)

GEOG 266 – Population, Environment, and Sustainable Development (*see above*)

GEOG 340* – Advanced Urban and Regional Studies (*see above*)

PSYC 105* - Intro to Psych: Psychological Science & Environmental Sustainability (*Susan Trumbetta section Only) *(Focuses on the topics of the Introduction to Psychological Science through the lens of their relationship to global climate change and environmental sustainability.)*

SOCI 112 - The House is on Fire (*Focuses on the policy making process as influenced by the economic, political and societal complexities of, along with the risks related to, the climate crisis.*)

SOCI 261 - Nuclear Cage (*Discusses nuclear power, one of the suggested alternatives to fossil fuels, and whether or not this is truly a green option*)

STS 137 - Unpacking Climate Change (Un)Certainty *(Uses the controversy surrounding the science of climate change as a way of examining the various ways people engage with uncertainty and the impact this has on the erosion of scientific authority.)*