

UVA Advance

Summer College Experience for Talented High School Students

Course Catalog



2025

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UVA Advance Course Placement

Students in UVA Advance enroll in two undergraduate classes, for a total of six credits.

The first class is selected from one of the four Core classes and is comprised solely of students in the UVA Advance program. Core classes meet daily, Monday-Friday, from 2-4:15.

The second class is selected from the Elective offerings, which consist of suitable 1000- and 2000-level undergraduate classes which fit the program schedule. Students will enroll alongside other undergraduates in these classes. Elective classes meet daily, Monday-Friday, from 10:30-12:45.

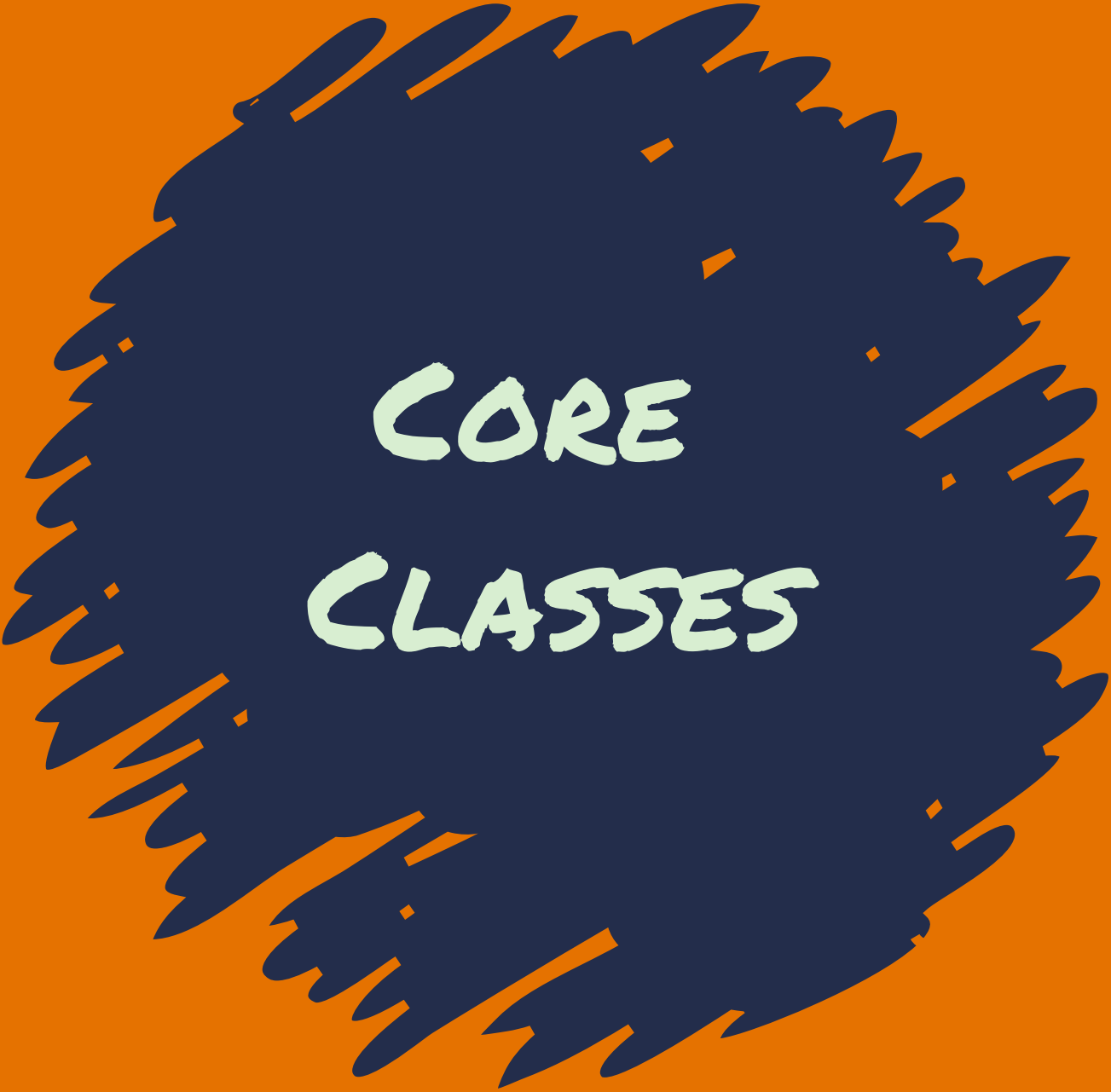
With rare exception (e.g. foreign language classes) there are no prerequisites for any courses open to UVA Advance students, though course faculty may desire students to have mastered certain levels of math or science, if applicable.

UVA Advance students do not directly enroll in classes. In mid-late spring, admitted students will rank their top choices for both Core and Elective classes via a survey, after which they will be notified by program staff of their final course placements.

Every effort is made to place students in one of their top two choices for each class, though this cannot be guaranteed.

Please note that the courses in this catalog, particularly the Elective offerings, are tentative and subject to change.

Students who do not complete the Course Selection Survey will be enrolled in courses based on available space.



CORE
CLASSES

Environmental Sciences: Introduction to Oceanography

This course analyzes the principles that govern the world's oceans and their integration into an understanding of the major marine environments. Topics include marine pollution, global climate, and marine policy.



Stephen Macko has taught at UVa since 1989. He holds a B.S. in chemistry from Carnegie-Mellon University, an M.S. in marine chemistry from the University of Maine, and a Ph.D. in chemistry from the University of Texas. He has authored hundreds of refereed research papers and books, and he was elected a Fellow of the Geochemical Society and European Association of Geochemistry. He has been featured on Discovery and National Geographic television programs, as well as in a number of public and commercial radio and television interviews.

Instructor: Stephen Macko
*Professor of Environmental
Sciences*



Global Studies: Global Sustainability

The search for new social, spatial, and technological systems that do not require undue and increasing amounts of finite resources is known as sustainability. Over the past 50 years, Earth's human population has doubled to 7.8 billion people and is projected by the UN to increase to 9.8 billion by 2050 and nearly 11 billion by 2100. Multiplied by a growing per-capita rate of consumption, the resulting effect is an accelerated depletion of natural resources, worldwide water and energy shortages, pressure on global food supplies, loss of biodiversity, increasing global health challenges, rapid urbanization, and social upheaval. These issues threaten human well-being and the Earth's ecosystems.

This integrated and interdisciplinary course prepares students to understand, innovate, and lead efforts to confront these issues. It provides foundational knowledge on the multifaceted aspects of both problems and solutions, and challenges participants to deepen their understanding of sustainability issues from the local to global scale.



Spencer Phillips is an ecological economist with more than 30 years' experience focused on the intersection of economic development and environmental stewardship. His passion is for helping people and institutions realize – that is, to understand and to attain – the benefits of environmental improvement. He achieves this through research into the value of ecosystem services, especially as impacted by climate change, land and resource waste management, and efforts to reduce air, water, and solid waste pollution, and by communicating these values to stakeholders and decisionmakers at all levels of government.

Instructor: Spencer Philips
Assistant Professor of Global Studies



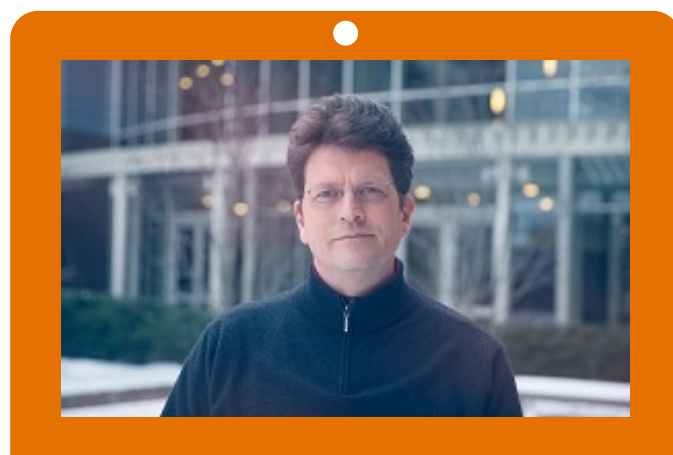
History: Genocide

One of the defining features of the twentieth century was the repeated use of genocide and other forms of one-sided mass violence by states against internal and external populations. In this course, we will explore these phenomena from theoretical and historical perspectives, with particular attention to the Armenian genocide, the Holocaust, the mass atrocities carried out by maximalist Communist regimes (e.g., Stalin's USSR, Mao's China, and Pol Pot's Cambodia), and the "ethnic cleansings" and genocides of the post-Cold War era (e.g., in the former Yugoslavia and Rwanda). While the experience of victims will be of central concern, we will also examine the experience and motivations of perpetrators, the explicit and implicit goals of regimes that resort to one-sided mass violence, and the response -- or lack of response -- by members of the international community.



Jeffrey Rossman earned his Ph.D. from the University of California, Berkeley. His areas of expertise include Russia/USSR, Modern Europe, Communism, and Genocide. Professor Rossman is the recipient of numerous academic awards, including a Collaborative Research Fellowship from the American Council of Learned Societies on reframing the history of Soviet mass violence in the 1930s and 1940s.

Instructor: Jeffrey Rossman
Associate Professor of History



Statistics: Introduction to Data Science with Python

This course provides an introduction to various topics in data science using the Python programming language. The course will start with the basics of Python, and apply them to data cleaning, merging, transformation, and analytic methods drawn from data science analysis and statistics, with an emphasis on applications. No prior knowledge of statistics, data science, or programming is required.

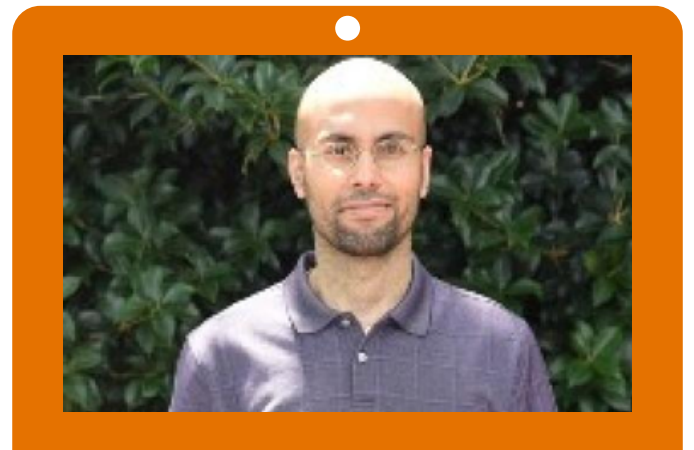


Harsimran (Sam) Somal earned his Ph.D. in Statistics from the University of Iowa.

He is interested in computational statistics. He briefly worked for the US Federal Government before the pandemic unexpectedly reignited his desire to teach. He has taught in the statistics department at UVA for 2 years.

Prior to that, he taught statistics for applied math, engineering, and business majors.

Instructor: Harsimran Somal
Assistant Professor of Statistics





ELECTIVES

AAS 2760: Empowered Women of Africa

This course will examine the captivating lives and inspiring stories of empowered women from across eastern and southern African regions. We examine the role that African feminist ideologies have played in shaping and enriching the narratives of African women, both in the pre- and post-colonial eras. Some of the questions we discuss are: How do these women navigate the intricate web of gender constraints, and even violence, in order to initiate change in their communities? How do they challenge deep-rooted traditions to contribute to political and civic engagement?

This course, through an analysis of texts, films, short stories, and interactions with African women, will give students a better understanding of how cultures, institutions, national and political trends, continue to define and shape the lives of African women.

ARTH 1500: Art and War

This course examines the theme of warfare in the visual arts through time and across the globe. We will be looking at works commissioned by governments, individuals, and some created by those, literally, in the trenches. Historical/political context, iconography, style, and geography are intensely examined as they relate to themes such as propaganda, resistance, and narrative. Central to this course is the question of how one depicts intangibles of horror, the sublime, heroism, etc. Students will be expected to apply these themes to objects outside of those covered in the course, thoroughly researching, reporting, and responding to inquiries presented by the instructor and the rest of the class. Ideas and problems will be discussed daily in a seminar environment.

ASTR 1220: Introduction to Stars, Galaxies, and the Universe



I was put in both a challenging and helpful environment with rigorous classes and practical mentorship, helping me address and overcome my classes' academic challenges.

-- UVA Advance Student



This course is an excellent first course in astronomy.

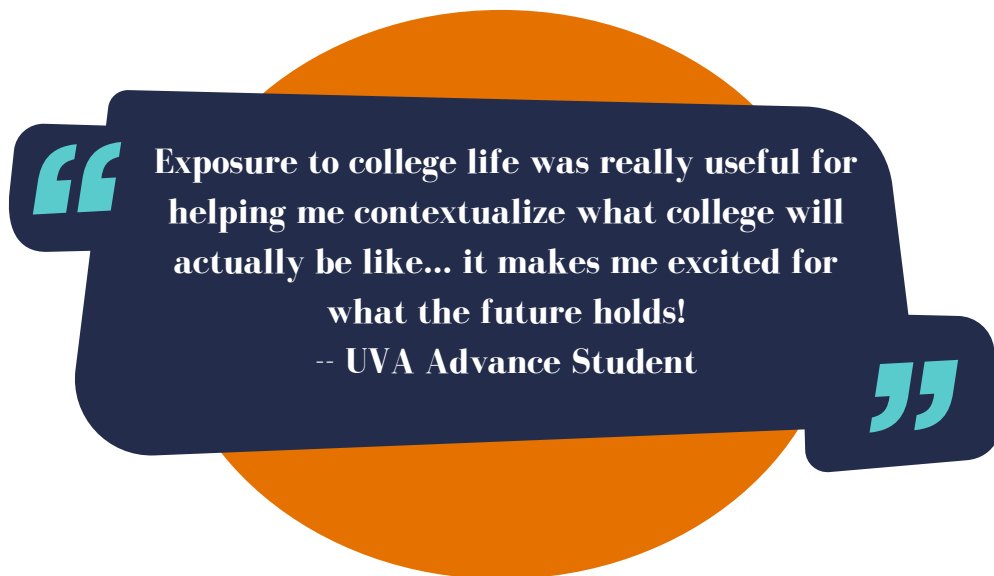
A study of stars, star formation, and evolution primarily for non-science majors. Topics include light, atoms, and modern observing technologies; origin of the chemical elements; supernovae, pulsars, neutron stars, and black holes; structure and evolution of our galaxy; nature of other galaxies; active galaxies and quasars; expanding universe, cosmology, the big bang, and the early universe.

DANC 1400: How Dance Matters

This course is an introduction to dance in the context of performance on stage, on screen, and in public space. Through viewings, discussions, and practical dance experiences, students will deepen their understanding of how dances are created and how dance shapes and is shaped by the world around it. Students will engage with a wide range of styles, historical periods, and creative approaches to consider how dance matters.

ECON 2020: Principles of Economics: Macroeconomics

Studies the determinants of aggregate economic activity, the effects of monetary and fiscal policy upon national income, and economic policy toward unemployment and inflation. A full introduction to economic principles warrants completion of both Econ 2010 and 2020. Students planning to take both semesters of economic principles are advised to take Econ 2010 first, though this is not required. The department recommends Econ 2010 to students intending to take only one semester of principles.



ENGL 2559: The Vampires We Need

More information coming soon!

PHIL 1510: The Ethics of War and Combat Involvement

This course examines the ethical implications of warfare and related forms of large-scale combative violence. It approaches this topic from both theoretical and applied perspectives. We will investigate the ethical theory of war, inquiring what conditions (if any) morally justify warfare between political bodies. This will primarily include contemporary voices in just war theory and pacifism. We will then apply these theoretical insights to specific moral issues arising from war and combat, such as nuclear weapons, terrorism, AI weapons systems, and the preservation of cultural heritage during war. The course will also address first-personal narratives of combat experience in order to examine the phenomenon known as “moral injury,” a concept of growing importance in veteran psychiatry and the ethics of war.

PHYS 1130: Physics of Sports

A study of the physics concepts behind the motion of spinning and curving projectiles in worldwide sports such as soccer, tennis, basketball, baseball, football, etc. and rolling and sliding balls/disks along a flat surface. Basic explanations include utilizing kinematics, gravity, friction, air flow, and Newton's Laws. Learn about hang time, topspin, dimples, drag crisis, sideways forces, least energy launch angle, jumping, and crouching.

Note: Students should have successfully completed Algebra I and Physics I (or higher) at the high-school level.

PLCP 2600: Rise and Fall of the Soviet Union

This course is about Russia and the Soviet Union. It is designed to explore some of this country's major political themes of the twentieth century through an understanding of Russia's history, culture and politics.

“

Frankly, all of the UVA Advance students in my class were talented, hardworking, and very interested in the subject matter.

--- UVA Advance Elective Class Professor

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RELG 1040: Introduction to Asian Religions

Hinduism, Buddhism, Confucianism, and Daoism have shaped and continue to shape art, culture, philosophy, politics, and daily life in Asia and across the globe. This course offers an introduction to the history, beliefs, and practices of these four traditions, as well as an opportunity for students to reflect critically on their own views about ultimate reality, the self, and what it means to live a meaningful life.

SLAV 2360: Dracula

An introduction to Slavic folklore with special emphasis on origins and subsequent manifestations of vampirism. Western perceptions, misperceptions and adaptations of Slavic culture are explored and explicated. The approach is interdisciplinary: folklore, history, literature, religion, film, disease and a variety of other topics.

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I enjoyed having class discussions every day, and I leveraged my college classmate's deep understanding...while also being able to share my ideas.

-- UVA Advance Student

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WORKSHOPS

Undergraduate Success Workshops

This 0-credit course is required of all UVA Advance participants. Workshops meet every Tuesday and Thursday from 4:30-5:30 pm and are designed to help students prepare for the challenges and opportunities facing undergraduates, at UVA and elsewhere.

Topics include:

Study Skills

Library Research

Undergraduate Admissions

Education Abroad

Mental Health and Wellness

Student Safety and Bystander Awareness

Although this course does not receive credit, it does receive a pass/fail grade and is reflected on student transcripts. Student success is determined based on attendance, participation, and short written reflections.



QUESTIONS?

CONTACT US:

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