

FALL 2022 NEW COURSES & DESCRIPTIONS

FR300 – Advance French Grammar

This 300-level course reviews material from intermediate level and bridges the introductory and major-level courses in French, building off skills that cadets already have. Pre-requisite: FR-202

INSTRUCTOR: LTC Kendrick

HNS 376WX - The Social, Ethical, and Economic Issues Surrounding Science and Medicine

This seminar will address the rapid and almost unmanageable speed of breakthroughs in science and medicine that have tested our abilities to keep up with the many social, religious, ethical and economic issues that they evoke. Through a case-based study of actual problems and controversies, we will discuss ways to address these issues as concerned individuals and members of a society. Included will be such issues as patients' rights, the use of animals in research, human cloning, stem cell research, screening for human diseases, euthanasia, health care coverage, and access to medical care.

HNS 376WX is cross-listed as BI 331WX. Pre-requisite: Admittance into the VMI Honors Program for HNS course.

INSTRUCTOR: COL James Turner

HNL 380WX - Power and Politics in Shakespeare

In this course we will explore what some of Shakespeare's most interesting plays suggest about the nature of power: how both heroes and villains establish and use their authority, how they shape their own identities and destinies, and how they serve and/or undermine justice. We will also read other works that will contextualize our understanding of Shakespeare's portrayal of power by deepening our appreciation of the distinctive culture of this period.

HNL 380WX is cross-listed as ERH 321WX. Registration under the ERH designation is by permission of the instructor. Pre-requisite: Admittance into the VMI Honors Program for HNL course.

INSTRUCTOR: COL Emily Miller

HNS 384W - BioArt

The term BioArt was coined by Eduardo Kac to be any art using living cells or organisms in its creation. Kac is most famous for his work "Alba," a glow-in-the-dark rabbit genetically engineered to express a jellyfish gene for green fluorescent protein. BioArt has received great scrutiny and criticism from both artists and scientists alike for ethical considerations. In this course, we will explore the history and ethics of BioArt while learning about the science that makes each work possible. Students will also create MicroArt, working cultures of bacteria, fungi, and protists. We will use pigmented and fluorescent bacteria as paints and dyes, use bioluminescent bacteria as a light source for photography, create living photographs from bacteria, and create fabric and paper from microbial biofilms. No prior experience in biology or art is required.

HNS 384W is cross-listed as BI 352W. Registration under the BI designation is by permission of the instructor. Pre-requisite: Admittance into the VMI Honors Program for the HNS course.

INSTRUCTOR: COL Emily Lilly

HNL 385W - Text + Image: Contemporary Nonfiction

Cadets in this seminar will explore the use of images, principally photographs, to illustrate, amplify, or otherwise extend the implications of the written word. The course will begin with close study of examples of the use of images and words together to strong effect. The remainder of the term will be devoted to each student's development and completion of an extended essay requiring integration of text and image. Ideally, cadets will end the course with a substantial polished work suitable for submission and publication. Cadets should expect an intensive workshop experience requiring writing for every class period and active participation in whole-class critiques. A strong commitment to the creative process and to the workshop model of drafting and response is required.

HNL 385W is cross-listed as ERH 475W. Registration under the ERH designation is by permission of the instructor. Pre-requisite: Admittance into the VMI Honors Program for HNL class.

INSTRUCTOR: COL Robert McDonald

Honors Thesis

HN 400/401

Honors Thesis/Project Research

Research for and completion of the Institute Honors thesis under the guidance of a faculty adviser. First class cadets must enroll in this course (for one semester or two) or another appropriate research or independent study course in order to earn credit for completing the thesis required for Institute Honors.

Enrollment is restricted to cadets in the Institute Honors Program and requires permission of the program's director. To enroll, complete the Registrar's INDEPENDENT STUDY/RESEARCH COURSE REGISTRATION form for COL McDonald's approval. The link to the form is:

<https://etcentral.vmi.edu/#form/209>. A new section of HN 400/401 will be created for each individual cadet, listing the faculty mentor as the professor of record. Pre-requisite: Admittance into the VMI Honors Program

IS-477 - Strategy and Power

This course examines the theory and practice of military strategy, the use of military force to achieve political ends. Initial attention is given to the canon of ancient and modern writers who made significant contributions to strategic thought. Consideration then turns to the social scientific explanations of military effectiveness. Among the factors considered are force employment, regime type, civil-military relations, and military culture. The final component of the course considers various explanations of strategic success and failure. Orienting this investigation is the (sometimes shifting) political motivation for the use of military force.

INSTRUCTOR: COL Spencer Bakich

MA 472 - Introduction to Statistical Learning

The course covers selected topics from the field of Statistical Learning which include some classical statistical methods, like simple linear regression, logistic regression, clustering, as well as some newer methods, like Boosting, Bagging, and Random Forests. Thanks to the recent rapid growth in computing power, the field of Statistical Learning provides powerful tools for comprehensive data analysis and data visualization. Learning such methods equips one with skills that are in high demand in the job market. The applications include marketing, finance, military, medicine, biology, sociology, psychology and many other fields where one has to work with data, and big data in particular. The course is very applied in nature and emphasizes applications of the statistical learning techniques, keeping the theory to the minimum necessary to understand the methods. A significant portion of the course is dedicated to the in class labs, where students get an opportunity to apply the methods they learn using real life datasets and the R statistical software. In addition, students will have multiple projects to work on in order to apply the skills learn. At the end of the course the students should have some theoretical and practical knowledge of a number of statistical learning methods, and be able to apply the methods and interpret the results in a meaningful manner.

INSTRUCTOR: Dr. Denis Aliyev