Dietrich College Interdisciplinary Courses

Dietrich College Interdisciplinary Courses

66-103 HSP First-Year Seminar: Appalachia (for HSP students only)
Fall: 9 units
The Appalachian region—which stretches from Georgia to New York's southern plateau—has a particular place in American history and memory. This course will examine the political, literary, economic and historical narratives that surround the region, as well as examining the role that Appalachia can play as a model for developing regions in other parts of the world. This course fulfills the First-Year Seminar requirement for the Humanities Scholars Program. Enrollment is restricted to first-year HSP students.

66-106 QSSS First-Year Seminar: Applied Quantitative Social Science I (QSSS students)
Fall: 9 units
The QSSS First-Year Seminar provides a fast-paced introduction to a range of methods in the quantitative social sciences. Organized around a set of case studies, the course introduces the language and methods of empirical research through a combination of seminar-style discussions of academic papers, and hands-on lab work using the statistical software R. Students will replicate results from a high-profile labor market discrimination paper, explore agent-based models of neighborhood segregation, and scrape Wikipedia data to examine imbalances in gender representation. Enrollment restricted to first-year QSSS students.

66-107 First-Year Seminar: Modeling Complex Systems
Fall: 9 units
Most of the major issues confronting humanity—such as climate change, financial collapse, ecosystem survival, terrorism, and disease epidemics—are the result of complex systems where the interactions of the pieces of a system create a whole that is rather different than any of its parts. Unfortunately, traditional scientific methods that focus on reducing systems to their parts and then analyzing each part provide little insight into such systems. This seminar explores the behavior of complex systems as well as how to model and understand them using both traditional tools and computer-based approaches.

66-109 Grand Challenge First-Year Seminar: Climate Change
Fall and Spring: 9 units
Many consider climate change to be the most serious social, political, and environmental issue of the 21st century. As human activities increase the level of greenhouse gases in the atmosphere, scientists have estimated the reality of climate change and have estimated its impacts on human society and the natural world. Despite the scientific consensus on its existence, causes, and consequences, a substantial number of Americans and citizens of other countries still question these conclusions and a small but vocal group of doubters continue to challenge the science and scientific consensus on climate change. In spite of some social division over these issues, governments at local, national, and international levels have made concerted efforts to craft policies to address climate change. These policies have shifted over time as the information, attitudes, and technology associated with climate change have evolved. In this course, we will explore the challenges and complexities of climate change by investigating the subject from a variety of angles: scientific, political, rhetorical, cultural, economic, technological, and ethical. Over the course of the semester, we will inquire: What is climate change? How do scientists know it is happening? Why is there public debate over it? What solutions are available? And what are the pros and cons of the different solutions?

66-110 DC Grand Challenge First-Year Seminar: Inequality
Intermittent: 9 units
This Grand Challenge first-year seminar on inequality is inspired in part by the specter of global income inequality. Income inequality has reached such a peak that eight men own as much wealth as half the world's population, the world's poorest 3.6 billion people. Inequality may be a feature of all societies across history to some degree. But inequality strikes us especially timely topic because of the current demands for greater political, social, and economic equality. The four of us will use the disciplines we come from—economics, anthropology, history, psychology, and literary/cultural studies—to introduce you to the concept of inequality in the age of capitalism. We will consider how inequality emerged as a social and political problem in the 18th and 19th centuries, and how it has re-emerged as a key concept for socio-political movements in our current moment. We will conclude with an inquiry into what the future of inequality might look like, especially with the coming of increased automation and the elimination of at least 50% of the jobs currently being done by human beings.

66-114 DC Grand Challenge First-Year Seminar: Racism
Intermittent: 9 units
Racism is everywhere in the twenty-first century. In August 2009, the renowned Indian actor, Sharukh Khan, was detained at Newark International Airport. According to Khan, his Muslim surname led American immigration officials to question him about the nature of his visit for over two hours. Was his treatment racist? In 2011, Luis Suarez a Uruguayan soccer player was punished for allegedly calling French footballer Patrice Evra ‘negro’ in England. But was the word ‘negro,’ said in Spanish, racist? Racism is a complex phenomenon that refers to historically hierarchical power differences between groups (e.g. Native populations and Europeans during the conquest), ideas about how humans can be classified into groups by ‘race,’ and also discriminatory practices against non-dominant groups. This system of social relations and ideology serves to justify social inequality and differential treatment. If we are to end racism, we must strive to understand it. What are the historical origins of racism? How is racism reproduced? How does race influence identity formation? Can racism produce positive identities? Why has the struggle against racism shifted from a demand for human rights to a search for diversity and inclusion? This course will examine racism in Pittsburgh, in the United States, and in several other countries and regions throughout the world. We will approach racism from multiple academic perspectives with a team of three faculty from the departments of History, English and Modern Languages. This team-based interdisciplinary approach to First-Year Seminars draws on several departments and guest speakers.

66-117 DC Grand Challenge First-Year Seminar: Political Rhetoric
Fall: 9 units
Without language, there would be no politics. Politics is about persuading others to adopt policies, to vote for candidates, to get out and march. Politics is about careful choices of language to frame issues, to make others see those issues in our preferred way. In this course, we will put the rhetoric of politics under the microscope, to identify its components and understand how they fit together into a powerful structure. We will use the tools of multiple disciplines in our analysis: rhetorical theory, both ancient and modern; cognitive science; contemporary discourse analysis; ethics; and philosophy of language. We will ask what it means for political rhetoric to be propaganda. We’ll explore how political advertising uses marketing techniques, taking advantage of our innate biases and cognitive dispositions. We will look at how a skilled speaker can control the topic in a dialogue or a debate. And throughout, we will ask the question: is this ethical? Where does persuasion cross the boundary into manipulation, and does that matter? What type of rhetoric do we want our political process to rely on? Our goal in this course is to provide students with the skills to recognize the rhetorical tools that political agents are using, and to develop their own responses in a skillful and informed way.
66-119 DC Grand Challenge First-Year Seminar: Feeding the World, Feeding Ourselves
Fall: 9 units
Food in the twenty-first century is rife with paradox: fewer people than ever work as farmers or ranchers, but the quantity and global variety of foods available to consumers continues to expand; public health officials around the world are raising concerns about diseases linked to the over-consumption of fats and sugars, even as hundreds of millions of people do not know where their next meal is coming from; organic agriculture is booming, while agribusiness giants like Monsanto continue to expand. Producing food consumes more land and water resources than any other human activity. The individual and collective decisions people make about food shape individual and community health, social justice, and sustainability. If we are to make sound decisions about how to feed the world and feed ourselves, we need to understand the highly creative and contentious ways that people produce and consume food. In this class we will address the following central questions in order to unravel some paradoxes, and help us make informed choices, about foods we consume: (1) What are the origins of agriculture, and why does it matter for the future of food? (2) How do cultural, ecological, economic, and technological contexts shape food acquisition, preparation, and consumption? (3) What are the causes of hunger - can we feed 8 billion people healthy food and not trash the planet? And (4) what role have science and technology played in shaping ‘industrial food,’ and in shaping the world around us?

66-122 DC Grand Challenge First-Year Seminar: Beyond Earth
Spring: 9 units
Space, as a television series once told us, is the final frontier. But what lies out there? It could be that the billions of rocky planets and moons in the Milky Way are just inert and ready to be terraformed and colonized... but what happens when we encounter life, intelligent or otherwise? In Beyond Earth, co-taught by an astrophysicist and a linguist, students will consider the various rationales for engaging with the rest of the galaxy...and the potential consequences of doing so. Why should one consider leaving the Earth, and where would he or she go? Just to Mars, or to other planetary systems? How long would it take to get to these other systems? The distances involved in space travel are immense, and we cannot rely on warp drives. Inter-generational space travel is a possibility, but who is willing to leave Earth and spend the rest of his or her life on board a spaceship? When one's descendants finally arrive in a suitable planetary system, what happens if they find life? If so, what should they do - communicate with it, control it, or fly away from it? Perhaps these are the wrong questions...perhaps we need to ask if humans have the right to occupy other planets and moons in the first place. But even if we choose not to leave Earth, there will still be the issue of communication: from radio signals to satellites leaving the Solar System to proposed light sails that will be pushed to the nearest stars, we are making ourselves known. Should we choose to do this? And if we send signals into space, how should we design them to make ourselves understood? What should we talk about? Just how should we go about engaging with the rest of our galaxy? By the end of the course, every student will be able to make an informed decision about whether to stay on Earth and improve what we all have, or strike out into the great Beyond?

66-124 Dietrich College Grand Challenge First-Year Seminar: Democracy & Data
Fall: 9 units
From gerrymandering to online political ads, data is being used in ways that raise urgent questions about the integrity of democratic elections. But the relationship between democracy and data goes far beyond elections. In a world of constant surveillance, in which vast amounts of data are gathered from our smartphones, our computers, and from other facets of our lives - and in which new breakthroughs in machine learning and data analytics make such data dramatically more powerful - what does it mean for average citizens to have control over their own lives? What does democracy mean?

66-126 DC Grand Challenge First-Year Seminar: How We Vote
Fall: 9 units
This course investigates the sacred American practice of voting, the cornerstone of American democracy, using the 2020 election cycle as our laboratory. The course uses a multi-disciplinary approach, examining the topic from several different perspectives. We'll investigate social movements to expand the vote, the role of technology, game theory, polling, predictions, electoral mapping, social media, the structures of American governance, and more. Questions include: What is the electoral college? Who gets to vote and why? How well is that vote accounted for? How can voting systems be compromised? Why is it so hard to predict who will win? How do people make decisions? How useful are polling & predictions? What disrupts voting? Why is turnout so low? How does money play a role in the election cycle? Why do we vote the way we do? How is social media changing elections? What are global best practices? Did the founders even intend for a mass democracy? (The answer is no!) Many of you will be first-time, eligible voters in one of the most remarkable presidential campaigns in American history. We'll build your skills as new democratic citizens, of this nation or others, and help you make sense of the history-making U.S. news cycle. A note on partisanship: All political viewpoints are welcome in this class. This is a course on how we navigate and account for political difference in a diverse, disparate nation. This is something we'll practice in class, while we will also study that very process across the nation.

66-127 DC Grand Challenge First-Year Seminar: Environmental Justice
Fall: 9 units
TBA
66-161 DC Grand Challenge First-Year Seminar: Artificial Intelligence and Humanity
Fall and Spring: 9 units
In 1965 British mathematician I.J. Good wrote, ‘An ultraintelligent machine could design even better machines; there would then unquestionably be an ‘intelligence explosion,’ and the intelligence of man would be left far behind.’ As we enter an age where companies like Uber are testing driverless cars in Pittsburgh and innovative interfaces like IBM’s Watson can play Jeopardy and learn techniques for medical diagnoses, how are we to negotiate an ‘intelligence explosion’ that for many individuals might threaten the very notions of what it means to be human? The future of human-to-machine relationships will likely define our historical epoch and yet, many young technologists and humanists underestimate the downstream impact of technological innovations on human society. Presently, we have little choice but to attend to this rapidly anxiety-ridden question. This seminar will attend to the challenge of contemporary existential questions on what it means to be human (read not machine) in the context of a rapidly advancing technological age. We will consider human narratives throughout history that examine how governments and individual citizens defined humanity in the context of slavery and colonialism as a framework for exploring and projecting what it means to be human in the age of rapidly advancing ‘intelligent’ machines. We will trace the technological advancements of the recent five decades and identify historical precedents and speculative narratives that help us to consider issues like labor, economic disparity, negotiations of power, human dignity and ethical responsibility within the context of human relations with advancing technological tools that are now coined, artificial intelligence.

66-202 Pathways: Dietrich College Career Exploration Seminar
Intermittent: 3 units
Designed for Dietrich College students, this seminar will assist students in effective career decision making, development of internship and job search skills, and workplace readiness. Students will participate in activities involving self-reflection/self-awareness, major and career exploration, personal branding techniques, and communication skills. We will invite guest speakers including alumni, employers, and on-campus resources. Students will also be required to participate in an evening networking event with alumni throughout the country.

66-204 Film Festival
Spring
Students will take on the project of planning and managing a film festival that draws a college- and city-wide audience. Students will collaborate on all aspects of the festival: selecting films, generating and distributing marketing materials, designing and scheduling events, arranging facilities and general logistics, coordinating internal and external public relations, organizing fundraisers, rallying the local communities - in short, all the aspects involved in making the event a spectacular/sensational success! A unique feature of this course-cum-festival will be several directors' participation as guest speakers on the festival theme and other issues informing their films. Previous Film Festivals have covered such topics as: participation as guest speakers on the festival theme and other issues informing their films. Previous Film Festival themes include: "The Future of Film: Human Narratives in a Technological Age," "Documenting Change: Environmental Issues," and "Innovations in Film: New Technologies and Storytelling." The festival will be designed to provide a platform for student filmmakers to showcase their work and for guests to engage with film as an art form and as a means of social commentary.

66-215 The Innovation Trials
Fall: 9 units
This course will examine some of the most influential intellectual property court battles throughout history and their impact on innovation. This course is geared toward students curious about Americas industrial development and interested in the political and business strategies behind the greatest innovations and technological advances of the past several centuries. The course will answer the who, what, where, when, why and how of a number of legal cases involving various technologies and areas of innovation and place them in their historical context.

66-221 Topics of Law: Introduction to Intellectual Property Law
Intermittent: 9 units
This course provides students with an overview of patent, trademark, copyright, and trade secret laws. Goals for the course include identifying intellectual property (IP) rights and understanding how to take the necessary steps to protect and enforce those rights. Many recent developments in IP law will also be covered.

66-236 Introduction to Environmental Ideas
Fall and Spring: 9 units
By recognizing that environmental problems are themselves complex and require insights from both scientific and social perspectives, the University-wide Minor in Environmental Studies urges students to gain proficiency in different disciplinary habits of thinking about environmental problems. This course fulfills a requirement for the University-wide Minor in Environmental Studies. This course will introduce students from any undergraduate major at CMU to key methods and approaches for inquiry in the framework of Environmental Studies. Students will build up their ability to recognize and apply diagnostic criteria; understand key principles and terms; and take part in an informed discussion about ways of seeing, and creating interventions for environmental problems as social and scientific challenges. There are no pre-requisites for this course. Students will develop skills and apply concepts to different scenarios of environmental crisis. Preference for course registration goes to students already declared for the Minor in Environmental and Sustainability Studies.

66-304 DC Grand Challenge Research Seminar
Intermittent: 9 units
TBA

66-307 Independent Study
All Semesters
This course is intended for students with a special interest in an interdisciplinary area in the humanities and/or social sciences not covered by a normal course. Readings and other works are developed by the student and an individual faculty member. The number of units will be assigned at the time of registration based on the number of hours to be completed (decided in advance with the sponsoring faculty member).
66-320 Internship
All Semesters
Internships-for-credit allow students to apply course-based knowledge in a non-classroom setting, under joint supervision and evaluation by an on-site supervisor and a faculty sponsor. Approved internships must conform to college guidelines for internships-for-credit, and are available by permission only arranged through the Associated Dean's Office in Baker Hall 154.

66-400 Dietrich College Senior Honors Colloquium
Fall: 1 unit
The purpose of this course is to provide students admitted to the Dietrich College Senior Honors Program with a shared set of intellectual and practical sessions that will enhance their senior honors thesis experience. The course will consist of seven bi-weekly 80-minute meetings. Each will be organized around a theme and related topics that are relevant to the senior honors thesis experience, and that take advantage of both the high caliber and interdisciplinary diversity of the course members. Guest visitors will also be a common feature of the course. Topics could include: the meaning(s) of 'honors;' getting started and keeping pace: the ebb and flow of an independent research project (including how to recognize and avoid procrastination; forging a successful relationship with your thesis advisor - the myth of the separation of research from writing; writing for publication); ethics in research; 'interdisciplinarity,' or the 'unity of knowledge,' funding for research; preparing for and delivering effective presentations; intellectual property rights, and human subjects policy. Guest speakers invited to address and engage class members in discussion/debate of topics that lend themselves to interdisciplinary discussion and debate (e.g., stem cell research, which calls into play science, ethics, etc.). Course requirements will include mandatory attendance, occasional readings (where appropriate), acting as co-leader for at least one session, and - at course's end - (a) a written, formal preliminary thesis statement and action plan, endorsed by the thesis advisor, and tentatively, (b) a brief oral presentation of the thesis statement and plan to the class + thesis advisors during the last class meeting. All students will participate in critiques of fellow-students' presentations and plans.

66-402 Dietrich Leadership Development Seminar
Fall and Spring: 9 units
The Dietrich Leadership Development Seminar is for juniors and seniors in Dietrich College wishing to advance their understanding of leadership theory and practice and to develop their own skills in this regard, while creating a context for their lifelong leadership development. The course is predicated on a six pillar model proposing that ideal leaders must at once be visionary, ethical, engaging, tactical, technical - including sub-expert conversancy in realms beyond their own expertise, and reflective - including both personal mindfulness and assessment against clear metrics. In this context, the course includes a focus on strategic planning, teamwork, cultural awareness, conflict resolution, sustainability, and personal welfare, professionalism, personal financial planning, and ongoing professional development. The course includes an attendance requirement and active engagement in class discussion, assigned readings/videos/podcasts (2 hours/week), self-selected experiential opportunities (2 hours/week), reflective journaling (2 hours/week), three-hour-long one:ones per semester with the instructor, special guests who are leaders in various occupational and service domains, a mid-term, a final, and a final presentation. The course includes case studies and role plays to amplify the learning experience. The course is limited to twelve students, with registration based on approval of the faculty member.

66-501 Dietrich College Senior Honors Thesis I
Fall and Spring: 9 units
This is the first semester of a two-semester sequence that culminates in an original, year-long independent research or creative project. The course is open only to students who have been approved for entry into the Dietrich College Senior Honors Program. Thesis topics are selected by faculty and students, and reviewed and approved through the senior honors program application process. Dietrich College senior honors students are also required to participate in the annual Meeting of the Minds Undergraduate Research Symposium, offering either an oral presentation or poster session based on their senior honors thesis
Course Website: http://www.cmu.edu/dietrich/undergraduate/programs/shp/index.html (http://www.cmu.edu/dietrich/undergraduate/programs/shp/)

66-502 Dietrich College Senior Honors Thesis II
Fall and Spring: 9 units
This is the second semester of a two-semester sequence that is the culmination of an original, year-long independent research or creative project. The course is open only to students who have been approved for entry into the Dietrich College Senior Honors Program. Thesis topics are selected by faculty and students, and reviewed and approved through the senior honors program application process. Dietrich College senior honors students are also required to participate in the annual Meeting of the Minds Undergraduate Research Symposium, offering either an oral presentation or poster session based on their senior honors thesis
Prerequisite: 66-501
Course Website: http://www.cmu.edu/dietrich/undergraduate/programs/shp/index.html (http://www.cmu.edu/dietrich/undergraduate/programs/shp/)

66-503 Dietrich College Senior Honors Thesis
All Semesters: 18 units
This course is a one-semester alternative to the two-semester Dietrich College Senior Honors Thesis sequence 66-501-502. The course is open only to students who have been approved for entry into the Dietrich College Senior Honors Program, and whose senior honors thesis project has been approved as a one-semester undertaking. Thesis topics are selected by faculty and students, and reviewed and approved through the senior honors program application process. The thesis culminates in an original independent research or creative project. Dietrich College senior honors students are also required to participate in the annual Meeting of the Minds Undergraduate Research Symposium, offering either an oral presentation or poster session based on their senior honors thesis.

66-504 Senior Capstone I
All Semesters: 9 units
Dietrich College student-defined majors (primary or additional) must complete a senior capstone project for at least 9 units (in one semester), or 18 units across both semesters of the senior year. The capstone project culminates in an original independent research or creative project that draws on all of the strands of the student's particular student-defined program. This course is the first in a two-course capstone sequence open only to seniors who have been approved to the Dietrich College Student-Defined Program as a primary or additional major, and who choose the two-semester capstone sequence option. The second course in the sequence is 66-505, Senior Capstone II. Projects are proposed by eligible students, and must be approved by a member of the faculty who agrees to be the project's primary advisor, as well as by the Dietrich College Student-Defined Program Director. These approvals must be secured no later than registration week of the semester prior to the start of the student's senior year. NOTE: For Dietrich College student-defined majors (primary or additional) who are accepted into the Dietrich College Senior Honors Program and who successfully complete a senior honors thesis based primarily on their student-defined major, the senior honors thesis fulfills the student-defined major capstone requirement.

66-505 Senior Capstone II
All Semesters: 9 units
Dietrich College student-defined majors (primary or additional) must complete a senior capstone project for at least 9 units (in one semester), or 18 units across both semesters of the senior year. The capstone project culminates in an original independent research or creative project that draws on all of the strands of the student’s particular student-defined program. This course is the second in the two-course capstone sequence, and is open only to seniors who have been admitted to the Dietrich College Student-Defined Program as a primary or additional major, and who have chosen the two-semester capstone option. The first course in the sequence is 66-504, Senior Capstone I. Projects are proposed by eligible students, and must be approved by a member of the faculty who agrees to be the project's primary advisor, as well as by the Dietrich College Student-Defined Program Director. These approvals must be secured no later than registration week of the semester prior to the start of the student's senior year. NOTE: For Dietrich College student-defined majors (primary or additional) who are accepted into the Dietrich College Student-Defined Program and who successfully complete a senior honors thesis based primarily on their student-defined major, the senior honors thesis fulfills the student-defined major capstone requirement.
66-506 Senior Capstone
All Semesters
Dietrich College student-defined majors (primary or additional) must complete a senior capstone project for at least 9 units (in one semester), or 18 units usually spread across both semesters of the senior year. The capstone project culminates in an original independent research or creative project that draws on all of the strands of the student's particular student-defined program. This course is a one-semester option for student-defined majors who propose a 9-unit/one-semester capstone project; it is also an 18-unit/one-semester alternative to the two-semester Senior Capstone sequence (66-504/66-505) for Dietrich College student-defined majors who choose the 18-unit capstone option, but who are unable to spread these units across both semesters of the senior year. The course is open only to seniors who have been admitted to the Dietrich College Student-Defined Program as either a primary or additional major. Projects and unit values are proposed by eligible students, and must be approved by a member of the faculty who agrees to be the project's primary advisor, as well as by the Dietrich College Student-Defined Program Director. These approvals must be secured no later than registration week of the semester prior to the start of the student's senior year. NOTE: For Dietrich College student-defined majors (primary or additional) who are accepted into the Dietrich College Senior Honors Program and who successfully complete a senior honors thesis, the senior honors thesis fulfills the student-defined major capstone requirement.

General Dietrich College Courses

65-201 Humanities Scholars III
Fall: 9 units
Billionaires: Entrepreneurship, Inequality, and Obligation in America (Fall, 2020) How does the concentration of wealth influence business and entrepreneurship? Furthermore, what are its effects on politics, media, the arts, sports and philanthropy? The course will focus on a series of case studies from the beginning of the Republic to the present day that examine how American society, built on systems of both free enterprise and individual rights, balances the ongoing reality of economic inequality with the ideals of democracy and equal representation. Students will learn about the role that wealth has played in the creation of contemporary society and will be asked to consider how societal norms have changed over time, including the moral obligations the ultra-wealthy individuals may have in shaping society.
Prerequisite: 65-102
Course Website: http://www.hss.cmu.edu/hsp/

65-203 Applied Quantitative Social Science II
Spring: 9 units
Applied Quantitative Social Science II is the second course in the QSSS core sequence. Conducted in a seminar format, the course will feature guest lectures from a series of faculty at CMU. Students will discuss ongoing research across the social sciences, and over the course of the semester will develop a research project proposal. Seminar participation is limited to QSSS students.