Dietrich College Interdisciplinary Courses

About Course Numbers:
Each Carnegie Mellon course number begins with a two-digit prefix that designates the department offering the course (i.e., 76-xxx courses are offered by the Department of English). Although each department maintains its own course numbering practices, typically, the first digit after the prefix indicates the class level: xx-1xx courses are freshmen-level, xx-2xx courses are sophomore level, etc. Depending on the department, xx-6xx courses may be either undergraduate senior-level or graduate-level, and xx-7xx courses and higher are graduate-level. Consult the Schedule of Classes (https://ten-apps.as.cmu.edu/open/SDC/SGSCServ/et/l) each semester for course offerings and for any necessary pre-requisites or co-requisites.

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66-106 Applied Quantitative Social Science I (QSSS students)
Spring: 9 units
Fall: 9 units
The first course in the QSSS core sequence 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 QSSS students.

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 astrostatistician 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, will 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 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 and dispassionate decision: stay on Earth and improve what we all have, or strike out into the great Beyond?

66-123 DC Grand Challenge First-Year Seminar: Science on Stage
Spring: 9 units
Art and Science -- two fields of study that are most often considered diametrically opposed. Art is frivolous entertainment. Science is hard rational fact. In this Grand Challenge course, we hope to break that supposition or at least examine it in great detail. Specifically, we will use theater to argue that drama can produce challenging, demanding and intelligent work that showcases the impact of science on current discourse. We want to link the two cultures. The word “theater” has the same etymological root as “theory” - both words come from the Greek thea meaning view. This shared origin demonstrates ways we can work to analyze and interpret both fields and show the common ground between these two cultures. As we attend to plays and writing ranging from Tom Stoppards Arcadia and Michael Frayns Copenhagen to Caryl Churchills A Number and Oliver Sacks Man Who Mistook his Wife for a Hat, our class discussions will consider questions that include: Why is science a trend in contemporary theater? Does it reflect on our dependence on technology? What kinds of questions are being asked when science or scientific theory is presented on the stage? Are people attracted to plays about science because of their difficult subject matter or does it lack the engagement of popular culture? In addition to integrating humanities and scientific approaches within Dietrich College, this course will utilize the expertise of both individuals in the School of Drama and the producers in the local theater community, and local science writers. Finally, in addition to weekly writing assignments, the course will ask students to produce original dramatic scenes that incorporate scientific exploration which will, ultimately, lead to staged readings of their work.

66-125 DC 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 phones, 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 and 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.

Dietrich College Interdisciplinary Courses
66-127 DC Grand Challenge First-Year Seminar: Environmental Justice
Fall: 9 units
Wondering what the "Green New Deal" proposal is about? Does it seem like you have to choose between protecting people and protecting the planet? How does environmentalism connect to struggles over social justice and human rights? This first-year interdisciplinary seminar is an introduction to the Grand Challenge: Environmental Justice. In Giovanna de Chiro's words, the environmental justice movement is working "toward building diverse, dynamic, and powerful coalitions to address the world’s most pressing social and environmental crises: global poverty and global climate change by organizing across scales and 'seeking a global vision' for healthy, resilient, and sustainable communities." In this seminar, we’ll study the history and science behind two interconnected challenges for environmental justice: global climate change and fine-particle air pollution. Both types of pollution start with combustion of fossil fuels. Particulate air pollution kills roughly 7 million globally each year; these air pollution deaths happen close to the source, with unequal levels of exposure and risk for people according to class and race. Climate change, mostly from carbon dioxide and methane emissions, is spread globally and lasts well beyond our lifetimes, yet the effects are again disproportionately based on class and race. In this course, we’ll explore the science, history, ethics, and public perception of these problems, with implications for Pittsburgh and the planet, and for the near- and long-term future.

66-128 DC Grand Challenge First-Year Seminar: Palestinian and Israeli Food Cultures
Spring: 9 units
In a region beset by conflict, how do food cultures allow us to approach cultural intersections and connections? This course is designed to provide students with a historical, cultural, and linguistic understanding of the hybrid nature of Jewish and Arab cultures, and the multiple ethnic contributions to local food cultures in Israel and Palestine. The two instructors, from the fields of Jewish history and Arabic Studies, will introduce students to the history, literature, film, and languages of the region, as well as to critical scholarship on food and foodways in the Palestinian and Israeli context. Students will have the opportunity to engage in cooking either locally or in Philadelphia - subject to travel restrictions - and to learn from Michael Solomonov and Reem Kassis, two award-winning US-based celebrity chefs and authors of Israeli and Palestinian cook books respectively. Throughout the semester we will also host a range of guest speakers who will deliver lectures on our course topic in the classroom and in the community.

66-129 DC Grand Challenge First-Year Seminar: Unreality: Immersive and Spatial Media
Intermittent: 9 units
Virtual news stories and game worlds are accessible by putting on cardboard goggles; theme parks are engineered to provide convincing multisensory experiences, and workforces are reliant on augmented views of factory floors. Immersive and spatial media constitute a suite of emerging technologies that offer the opportunity to expand arts, entertainment, science, design, commercial enterprises and countless other domains in ways that were previously limited to science fiction. The potential for augmented reality to disrupt our current technological ecosystem is tremendous. Many of these technologies are now 50 years old and just starting to enter the commercial realm. As immersive experiences and augmented realities become more integrated into our work and leisure, do we need to worry about the ways that unreality affect our experiences of reality, or our interactions with each other? How do we know that we can trust our senses to tell us what is real? How do we begin to grapple with the ethical, cultural, social, technological, and regulatory implications of this shift?

66-131 DC Grand Challenge First-Year Seminar: Culture, Sports, and Conflict in and VR
Intermittent: 9 units
Sports have been celebrated for bringing people together; yet, sports have also been a locus of tensions and conflict that most of us only experience from the sidelines. We understand sports, the people, and their cultural impact through the stories that we tell about them in such places as museums, stadium tours, and Halls of Fame as well as in books, documentaries, and podcasts. Through immersive technologies, these stories are brought to life and bring fans to the heart of the action. In this course, students and faculty together will seek to achieve two main objectives: (1) examine ways in which cultural and societal values are reflected in sports and (2) how Virtual Reality (VR) technology can help design experiences that enhance the users awareness of these issues by engaging with these cultural and societal perspectives. We will first unpack sports stories that are squarely situated at the crossroads of sports and culture(s) (e.g., racism, human rights, and the role of government and national politics). Then we will explore the role of VR technology to help craft these narratives. Students, then, will discover what it means to write stories for VR experiences. The course will culminate in students designing an immersive experience about a sports conflict of their choice, which will be developed more fully to be displayed in the Askwith Kenner Global Languages and Cultures Room.

66-132 DC Grand Challenge First-Year Seminar: Health in Unhealthy Times
Intermittent: 9 units
We live in times when health is a major global concern, whether we worry about the increase in Covid-19 cases, wait our immunization, strive to understand the disproportionate impact of the disease on BIPOC populations, or debate mitigation measures notwithstanding to mention ongoing concerns with common chronic illnesses such as diabetes, cancer, autoimmune disease, depression, anxiety, etc. Health, or lack thereof, has always been a critical part of the human experience, and it is fundamentally impacted by different human experiences. This seminar will introduce students to the scientific aspects of health, its political and social determinants, ethical constraints, historical roots, as well as to the cultural and communicative skills required to dialogue about health, make decisions, and engage empathically with others in their health stories. We will read and discuss a broad variety of materials from medical science articles to social psychological experimental reports and personal or literary narratives about health. The course is divided into three components: health and preventative behaviors, managing chronic health challenges, and coping with disruptive health experiences. We believe these components can represent a broad array of interest and engage students on a personal level.

66-133 DC Grand Challenge Seminar: We’re Not Beyond Race: Race and Identity in America
Intermittent: 9 units
Race matters. How have social institutions and historical factors led to the belief systems and stereotypes that shape how race is experienced in American society, and how do these belief systems affect the way individuals come to view and define themselves and others? This course considers how race and identity affect peoples lived experiences - how they think, feel, and act - in America. In this course, we will examine the structural and systemic origins of the racial status quo, as well as the way that individuals navigate the social and racial landscape of modern-day America. Including insights from psychology, literature, economics, sociology, and history, the course will focus on how race matters at both a societal level and an individual level. We will consider different racial situations throughout American society to understand how individuals navigate and experience race and identity. Throughout the course, we will watch films, read literature, and analyze music and art that reflect the experience of race and identity.
66-134 DC Grand Challenge First-Year Seminar: Native Americas: Facts and Fictions
Intermittent: 9 units
How did Indigenous people respond to the challenges of populating the American hemisphere and creating complex, diverse and dynamic cultures, languages and political entities? How did they survive, adapt to, and resist the conquest and colonization of their lands, and ensuing social and cultural dislocations? How have they resurged politically, culturally, artistically and intellectually in recent years? This course considers the history, experiences, and perspectives of native populations across the Americas. It seeks to reckon with the facts of the Native American experience, while challenging the fictions of stereotypes and narratives that have often relegated Indigenous people to the social and cultural margins of the nations in which they now live. After introducing students to a few of the myriad Indigenous groups of North, Central and South America, we will then survey the implications of the era of European conquest and colonization. Well consider the implications of the rise of new nations in the Americas, as new and intensifying campaigns of violence were unleashed against Indigenous populations. We will consider the rise of Native American civil rights and political and cultural sovereignty movements from the late 20th century forward, as they coalesced into major political challenges to native marginalization and demands for recognition and reparation of historical injustices. Finally, we will explore how contemporary Indigenous artists, authors, and political and social activists are reimagining indigeneity (the condition and experience of being Indigenous) in ways that demonstrate how indigeneity is not a fixed kind of identity, not one that is confined or defined in any way by a static conception of tradition, but rather one that challenges the present and reimagines the future in dynamic and creative ways.

66-135 DC Grand Challenge First-Year Seminar: Designing Better Human-AI Futures
Intermittent: 9 units
This course will explore the societal impacts of artificial intelligence (AI) based decision-making systems, especially focusing on the societal biases they may enhance or reduce. Students will gain a fundamental understanding of how these systems are designed and work, as well as the role of data in mitigating or enhancing biases. The course is multidisciplinary in nature and brings together social scientists, engineers, data scientists, and designers to tackle the grand challenge of dealing with issues of bias and fairness in Human-AI collaborative systems, ranging from the data that is used to train them, to their human creators that are responsible for deciding how they work and get used. Students will investigate policy, technology and societal elements aimed at reducing and mitigating the impact of AI biases that can negatively impact society, especially its vulnerable members.

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' expert conversancy in realms beyond their own expertise, and reflective - especially its vulnerable members.

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
Topics for this course vary, to include such foci as intellectual property, introduction to U.S. law, great American trials, and the U.S. Constitution. Topics and courses are designed to be broadly relevant and interesting for university undergraduates, and not narrowly tailored for students interested in law school.

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 Associate 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 eb 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
This 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 againstclear metrics. In this context, the course includes a focus on strategic planning, teamwork, cultural awareness, conflict resolution, risk management, 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 H&SS Senior Honors Thesis I
Fall and Spring: 9 units
This sequence is open only to those seniors who have been admitted to the H and SS Senior Honors Program. This is the first semester of a two-semester sequence that culminates in an original, year-long independent research or creative project. Thesis topics are selected by faculty and students.
Course Website: http://www.cmu.edu/dietrich/undergraduate/programs/shp/index.html (http://www.cmu.edu/dietrich/undergraduate/programs/shp/)

66-502 H&SS Senior Honors Thesis II
Fall and Spring: 9 units
This sequence is open only to those seniors who have been admitted to the H and SS Senior Honors Program. This second semester course is the culmination of an original, year-long independent research project. Research topics are selected by faculty and students. 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 66-501/66-502. 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 (66-504) is the first in a two-course capstone sequence open only to seniors who have been admitted 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.

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 (66-505) 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.

66-506 Senior Capstone
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 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 (66-506) 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 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.

65-198 Research Training: History
Intermittent: 9 units
For Fall 2021: The Pittsburgh Queer History Project The Pittsburgh Queer History Project (PQHP) is an ongoing research effort to collect and catalog archival material that document the experiences of LGBTQ people in Pittsburgh and its environs from the second half of the 20th century to the present. The PQHP is co-directed by Prof. Tim Haggerty, the Director of the Humanities Scholars Program and Dr. Harrison Apple, a BXA graduate of Carnegie Mellon who received a doctorate degree from the University of Arizona in 2021, studying with the noted trans scholar Susan Stryker. Students will meet with community activists, learn how to conduct community outreach, organize archival material, and help formulate research questions based on these documents. There is no prior experience needed. The Dietrich College research training program is open to second-semester first-year students and sophomores with a 3.0 QPA or by petition. By permission of the relevant professor and the Director of Undergraduate Studies. Students sign up for these courses through both the History Department and the Dietrich College Dean’s Office.

65-201 Humanities Scholars III
Fall: 9 units
Fall 2021: Modern Love As an emotional state love is central to the human experience, whether it is the bonding that occurs between parents and their children, the camaraderie that happens between friends, colleagues, or compatriots, or the romantic attachments that occur between partners. In the modern era, love underwent a transformation: children became more precious, comradeship was reexamined and romance assumed a preeminent place in psychology, legal theory, and social organization. None of this was immutable or unchanging. This class, utilizing fiction, social science and other media, will examine the manner in which love has transformed over time and the consequences that these changes have had upon our understanding of personal interactions, sexualities, and conceptions of health, wellness and social order. 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.