Strand Classes, Spring 2021

ELES = Strand Elective
ENGS = Strand English
HISS = Strand History
NTSS = Strand Natural Science
SCSS = Strand Social Science

Strand classes are not prerequisites for each other, so they may be taken in any order over the course of a student’s career.

**Technology & Innovation Strand**

<table>
<thead>
<tr>
<th>MWF 1000-1050 (14459)</th>
<th>ELES 301-01 “Challenges for the 21st Century,” Dr. Ragan</th>
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<tbody>
<tr>
<td><strong>Course Description</strong></td>
<td>In this course, students will learn the process to design innovation to create a better future by exploring one of the fourteen Grand Challenges for the 21st Century. These challenges include providing access to clean drinking water, engineering better medicines, and enhancing virtual reality, just to name a few. By looking at case studies and examples, we will learn from the past and employ best practices for the future. Students will explore the consequences and value of specific innovation. We will begin with a preliminary design of a product or process within one of the 14 Grand Challenges. Students will learn to work within constraints to design for society. Students must consider societal implications and resource barriers. By analyzing the challenge and identifying the constraints and requirements, the student's product or process will be the groundwork for a capstone project team for further development.</td>
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<tr>
<th>TR 1100-1215 (14985)</th>
<th>ELES 301-02 “CAD for 3D Printing,” Dr. Skenes</th>
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<td><strong>Course Description</strong></td>
<td>In this course, students will be introduced to the Computer-Aided Design (CAD) software SolidWorks and will learn how to employ this software to create high-quality parts to be produced via additive manufacturing, or 3D printing. Students will learn how to create virtual 3D parts and build assemblies of multiple parts. The advantages and disadvantages of different methods of 3D printing will be discussed, and practical concerns related to consistently successful 3D printing projects will be explored. Students who complete the course will have a greater understanding of how they can use 3D printing to independently create products for an entrepreneurial venture as well as the sustainable benefits 3D printing offers as a manufacturing method.</td>
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### Nanotechnology

Nanomaterials, or materials with a dimension between $10^{-9}$ to $10^{-7}$ m, are an emerging technology that see commercial application in the fields of engineering, biology, physics, and chemistry. Nanomedicine is the application of nanomaterials for the diagnosis, treatment and prevention of disease. This course is designed specifically for students without a strong background in chemistry, and will begin by introducing an elemental knowledge of chemistry. Then, the unique properties of nanomaterials are explored. Current and emerging applications in diagnosis, treatment, and drug delivery are discussed in the final segment of the course.

### Conflict Strand

One of the primary goals of the Conflict strand is to expand our definition of “conflict” to include competition of ideas as well as national and political strife. Along these lines, while the American West has historically been marked by a series of violent conflicts, it has also been the subject of conflicting portrayals and understandings. To that extent, literary depictions of the West have also conflicted—beginning with the pioneer and memoir literature of the 19th century, continuing on the silver screen with John Wayne, and culminating in the backlash of the contemporary anti-Western. In this class, we will explore the shifting landscape of the literary American West in order to identify how such conflicts catalyze the evolving project of American national and cultural identity. In doing so, we will think through ways in which recent interpretations of the genre attempt to illuminate perspectives that have traditionally been suppressed or elided, and consider the role of textual interpretation in resolving contemporary issues stemming from the legacy of the symbolic American West.
Hercules. Achilles. Odysseus. Leonidas. We all know the names of these ancient heroes, and many of us know their stories. But, why thousands of years later and thousands of miles away from Greece, do we still talk about these men? This class will examine ancient writings about these men, consider them in the context of their time and culture, and then look at their modern film and literature adaptations. We will read about ancient gods, goddesses, and the trials of Hercules before considering Disney’s version. Excerpts from *The Iliad* will be discussed before we compare how the story appears in comic books and the film *Troy* starring Brad Pitt. After reading parts of *The Odyssey*, the class will then consider how this wily leader appears in other comic books and in the American South in the film *O Brother, Where Art Thou?* Finally, we will learn about the Spartan stand at Thermopylae from both ancient reporters and Frank Miller’s graphic novel and film, *300*. For all these texts and films, we will ask, what types of conflict are written about? Which ones are valued? How are heroes defined? Is there only one type? How have ideas about conflict and resolution changed (or not) from ancient Greece to today? What values, ideas, and beliefs lead to, exacerbate, and de-escalate these conflicts? What is the role of the individual and groups in relation to conflict and resolution? How can we analyze and write about these depictions? How can we articulate and evaluate different styles of leadership and service during conflict?

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<tr>
<th>TR 0930-1045 (14700)</th>
<th>HISS 302-01 “Nationalisms,” Dr. Giblin</th>
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<tr>
<td>TR 0800-0915 (14887)</td>
<td>HISS 302-02 &amp; 03 “China: Violence, War, and Peace,” Dr. Knapp</td>
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<td>TR 0930-1045 (14888)</td>
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<tr>
<td>MWF 1100-1150 (14686)</td>
<td>NTSS 302-01 “Chemistry of War,” Dr. Dorko</td>
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<td>MWF 1200-1250 (14687)</td>
<td>NTSS 302-02 “Forensic Science,” Dr. Zuraw</td>
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<tr>
<td>MWF 1100-1150 (14950)</td>
<td>NTSS 302-03 “Conflict &amp; Cooperation in Nature,” Dr. Donnell</td>
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Although China’s elites have frequently viewed warfare as wasteful and violence itself as unseemly, they understood that both were necessary to ensure the state’s welfare. Nevertheless, they sought to limit wars, constrain the power of warriors, and control public violence. This class will explore military campaigns and policies over the long arc of Chinese history, from the Bronze Age to modern times. We will also examine forms of public violence such as feuds, capital punishment and torture, sectarian rebellions, banditry, and piracy.

Forensic Science is designed to familiarize the non-science major with various aspects of crime scene investigation, specifically focusing on the scientific aspects of evidence such as DNA, serology, documents, hair, and fiber analysis. Discussion of historic and recent crimes will be used to illustrate the importance of the scientific techniques in forensics.
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<th>MWF 1200-1250 (15063)</th>
<th>SCSS 302-01 “Social Psychology,” Dr. Nida</th>
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<td>Social Psychology surveys our scientific knowledge of how the individual affects and is affected by other people. The student will examine current theories, research findings, and applications in a number of specific topic areas pertinent to social thinking and social behavior; these include attitudes, persuasion, conformity, group processes, interpersonal attraction, aggression, and helping. Four major topics addressed in the class – prejudice, conflict, conflict resolution, and aggression – are particularly reflective of this course’s place within the Conflict Strand. The course emphasizes the development and use of critical thinking and writing skills to facilitate the student's mastery of the course material.</td>
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| MWF 1000-1050 (15066) | SCSS 302-02 “Practical Applications of Learning and Behavior Change,” Dr. Dawes |

**Citizenship Strand**

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<tr>
<th>MWF 1200-1250 (14667)</th>
<th>ENGS 303-01 “The Deviant Citizen,” Dr. Hendriks</th>
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| TR 1330-1445 (14695)  |
| TR 1500-1615 (14881)  |
| TR 0930-1045 (14882)  |
| HISS 303-01, 03, & 04 “US Immigration History,” Dr. Aguirre |

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<tr>
<th>MWF 1000-1050 (14709)</th>
<th>HISS 303-02 “Rome and its Citizens,” Dr. Maddox</th>
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<td>This course surveys Roman history through Rome’s origins as a Latin village to its emergence as the head of an Empire. Emphasis will be placed on what it meant to be a Roman citizen, a citizen soldier, a wife/husband, a slave, and the roles of different social groups and genders within Roman society. Students will consider urban life in Roman cities, as well as the personalities and values of the Romans and how these led to Rome’s political, social, military, and economic successes and failures.</td>
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<th>TR 1330-1445 (14481)</th>
<th>NTSS 303-01 “Wild Injustice: Global Environmental Citizenship,” Dr. Balmer</th>
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<td>Since the mid-18th century the human population has grown 10-fold to more than 7 billion. Human infrastructure, agriculture, and industrialization have transformed more than half of the planet’s land surface, polluted the world’s oceans, altered the Earth’s atmosphere and climate, and sparked what some are calling Earth’s sixth mass extinction. Many scientists believe humans now rival, or in some cases,</td>
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exceed the forces of nature, and will push the planet beyond critical tipping points by the end of the century. In this interdisciplinary course exploring Earth’s future we’ll discuss the driving forces and impacts of global ecological changes from sociological and scientific perspectives, and our personal responsibility as ‘environmental citizens’ to prevent them. We’ll examine what constitutes responsible environmental action and develop skills for participating effectively, individually and collectively, as global citizens to protect our only home: planet Earth.

TR 1100-1215 (14952)
NTSS 303-02 “Biology, Environment, & Law,” Dr. Berry
This course will explore the ways that the legal system protects and regulates biological systems in the environment. We will examine the profound influence that environmental laws have on species, ecosystems, and landscapes, and the effects of the regulation of air, water, and land in maintaining biodiversity, sustainability, and ecosystem health.

**Wellness Strand**

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<tr>
<th>MW 1300-1415 (15071)</th>
<th>ELES 304-01 “Personal Finance,” Dr. W. Jones</th>
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<tr>
<td>MW 1430-1545 (14263)</td>
<td>ENGS 304-01 &amp; 02 “The Wellness Revolution,” Dr. Frame</td>
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<td>TR 1330-1445 (14720)</td>
<td>ENGS 304-01 &amp; 02 “The Wellness Revolution,” Dr. Frame</td>
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<tr>
<td>MWF 1300-1350 (14403)</td>
<td>HISS 304-01 “History of Pre-Modern Medicine,” Dr. Boughan</td>
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<td>TR 1330-1445 (14688)</td>
<td>NTSS 304-01 “Human Diseases,” Dr. Capers</td>
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<tr>
<td>MWF 1300-1350 (15077)</td>
<td>SCSS 304-01 “Sports Psychology,” Dr Nida</td>
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Notions of health and well-being vary over time, across cultures, and within cultures. This course examines medical knowledge and practice in the Latin West, 1000-1600. It also considers more broadly how people in that time and place conceived what it means to live well. A principal focus of this course will be conflicting or competing notions of health and well-being from folk culture, Christian tradition, and elite medical learning.

This course will examine a wide range of psychological factors relating to participation in sport and athletic performance, and to physical activity more generally. Particular emphasis will be given to social psychological variables affecting participation and performance and their relationship to the psychological well-being of the individual athlete, to include attention to sports fans and sports marketing. Two key topics addressed in the class – “exercise adherence” and “exercise
“and well-being” – are particularly reflective of this course’s place within the Wellness Strand.

Nature & Sustainability Strand

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Instructor</th>
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<tr>
<td>TR 1100-1215 (15108)</td>
<td>ELES 305-02 “CAD for 3D Printing,” Dr. Skenes</td>
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<td></td>
<td>In this course, students will be introduced to the Computer-Aided Design (CAD) software SolidWorks and will learn how to employ this software to create high-quality parts to be produced via additive manufacturing, or 3D printing. Students will learn how to create virtual 3D parts and build assemblies of multiple parts. The advantages and disadvantages of different methods of 3D printing will be discussed, and practical concerns related to consistently successful 3D printing projects will be explored. Students who complete the course will have a greater understanding of how they can use 3D printing to independently create products for an entrepreneurial venture as well as the sustainable benefits 3D printing offers as a manufacturing method.</td>
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<tr>
<td>TR 1100-1215 (14264) TR 1330-1445 (14751)</td>
<td>ENGS 305-01 &amp; 02 “Capitalism, Socialism, and Sustainability,” Dr. Horan</td>
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<td>While corporate capitalism is central to contemporary American culture, this course will examine how distinctly American conceptions of socialism challenge, inform, and alter our dominant socioeconomic paradigm. We will explore the portrayal of socialism in American speculative literature, including Edward Bellamy’s phenomenally popular Looking Backward (1888), Jack London’s quasi-Marxian The Iron Heel (1907), and B.F. Skinner’s Walden Two (1948), which delves into the controversial relationship between collectivism and behavioral engineering. We will consider Ayn Rand’s critique of socialism and endorsement of the free market in her dystopian novella Anthem (1938). We will also analyze criticisms of socialism from the left, such as Cedric J. Robinson’s Black Marxism (1983), which questions the European philosophical influence on contemporary leftwing thought. Through a series of activities and assignments, students will connect the concepts and concerns raised in this literature to contemporary questions of sociopolitical, economic, and environmental sustainability.</td>
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<tr>
<td>MWF 1000-1050 (14689)</td>
<td>NTSS 305-01 “Police, Politics, Pollution,” Dr. B. Adair</td>
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Students explore many aspects of chemical creation, distribution, and sources. The importance of natural elements like metals in creating everything from television screens to cars is discussed in terms of the policing needed and politics involved in acquiring, processing, and distributing chemicals throughout the world. Students will learn that implementing sustainable uses and disposal processes of chemicals has been a complex issue throughout history, especially when lives are impacted.