

INTERIM 2023
NON-CATALOG COURSE DESCRIPTIONS

BIOL 397A TOPICS: GENOMICS AND TRANSCRIPTOMICS

Understanding the genetic basis of phenotypes at the molecular level is fundamental for all areas of biology such as medicine, drug discovery, and agriculture. To this end, genomics is the study of information stored in the genome (the complete set of genes present in an organism), while transcriptomics studies the transcriptome (all RNA transcripts produced by the genome under specific conditions). This course will introduce students to statistical methodologies for designing and analyzing genome-wide association analysis (GWAS) and transcriptomics (RNA-seq) experiments that link genomic information to phenotype. During class time, students will learn how to effectively design GWAS and RNA-seq experiments, analyze data using bioinformatics tools such as UNIX, R programming language, and also utilize project-specific databases for candidate gene identification to correlate phenotypes to causal genes. Students will also learn how to effectively communicate novel findings from their projects through short reports and peer-reviewed publications.

BIOL 397B TOPICS: GLOBAL FOOD SECURITY

Attaining global food security requires an understanding of how economic, educational, and other inequalities impact the ways in which food is produced, consumed, processed and distributed. The course will increase students' knowledge base on how education systems and policies impact the welfare, decision making processes, and resiliency of a people. Issues such as biofuels, food aid, pest management, subsidies and climate change and food access as drivers of food insecurity will be discussed to give perspective to the complex interdependencies related to global food security. Plant diseases along the food security continuum, the losses they cause and the impact they have will also be addressed. These discussions will hopefully spark positive self-reflection on students' personal views and possible roles in addressing the issues.

CHEM 197A TOPICS: ENVIRONMENTAL CHEMISTRY

The lecture portion of this class is a survey course that describes basic atmospheric, water, and soil chemistry principles, and relates these principles to the current challenges to our air, water, and soil environments. This course focuses on understanding the linkages and interactions of the air, water, and soil to gain a qualitative understanding of how pollutants behave in the environment. Students will investigate specific historical environmental events and the associated socioeconomic, ethical, human and environmental health, and political ramifications associated after the occurrence of the event. The lab portion of the course will require students to perform basic environmental testing techniques that provide an overview of the chemical theory necessary to perform the analysis and use equipment required to properly administer environmental analysis.

CHEM 397A TOPICS: NATURAL PRODUCTS CHEMISTRY

Natural products chemistry is the chemistry of metabolite products from natural resources such as plants, animals and microorganisms. Students will be introduced to current theory and research in the field of natural product chemistry. This course is designed to introduce a number of selected classes of bioactive novel compounds isolated from natural resources. In the meanwhile, the students will also be exposed briefly to (1) the general isolation methods used to isolate natural products, (2) spectral methods used to identify new compounds, and (3) examples of structural modifications of lead compounds in new drug development. Course materials will be evaluated via three quarter exams and a final exam. It is expected that the students will also work in small groups or participate in cooperative group learning sessions to discuss on the importance of natural product chemistry and structure elucidation methods.

CIVT 202 PERTINANCE: GERMS GONE WILD: THE INFLUENCE OF DISEASE ON HISTORY

Designed as an introduction to biological principals, this course uses historical events to explore the role of germs in human history. Focusing on different types of pathogens and/or disease vectors, students are invited to explore—through laboratory work and field exploration— the impact various diseases on societal development. To accomplish this task, students will travel to Hawaii and explore how disease shaped the history of the Hawaiian kingdom, and set the stage for its annexation by America in 1898.

CIVT 203 JUSTICE: USE OF NUCLEAR ENERGY

In this course we explore the tension between the peaceful and not so peaceful uses of nuclear energy. We will review this history of the development of atomic weapons and their non-proliferation, the use of nuclear power, and

healing powers of nuclear medicine. Ultimately, students should come to their own reasoned conclusions about “How then shall we live in a world with our understanding of nuclear energy?”

COMM 197A TOPICS: PUBLIC HEALTH ADVOCACY

Effective advocacy is essential in contemporary society. When discussing social issues, critical thinking and speaking are needed to effect change. These statements are particularly true in public health. Whether it is COVID-19, cancer or the common cold, the health care system suffers from inadequate, inconsistent, and often incorrect communication. Consequently, students will critically analyze the current state of public health communication to develop compelling arguments. Students will also develop critical messaging skills to inform, persuade, and motivate people with better public health communication.

COMM 197B TOPICS: THE AVENGERS (C)

Popular culture plays an essential role in conveying cultural norms, roles, values and power. American popular culture celebrates heroes, especially superheroes. This course examines foundational elements of interpersonal communication. We will explore these foundational elements as they are represented by the world's mightiest heroes (The Avengers if you don't know). Specifically, we will examine perception, self-concept, language, non-verbal communication, listening, conflict and interpersonal relationships. As we look at the cultural norms presented, violated, and challenged in the films, we will also explore how those actions, values and power apply in our own lives. In short, this course is about The Avengers, but also mostly about culture and you.

EXSC 397 TOPICS: OUTDOOR ADVENTURE IN COSTA RICA

This course will provide a Costa Rican cultural experience related to human health in Costa Rica. Costa Rica offers diverse opportunities where students will have the opportunity to apply concepts of Exercise Science in a 3rd world country where organized health and wellness is viewed from a different perspective than South Dakota. Students will study Costa Rican health and wellness culture using concepts from kinesiology, biomechanics, and nutrition to physical activities such as swimming, soccer, surfing, hiking, ziplining, and mountain biking. Significant time will be spent with the local soccer (futbol) associations and other in-country sport organizations.

GENL 297 A TOPICS: DISUNITED KINGDOM: RECONCILIATION

This course explores the history of conflict and the contemporary processes of peace and reconciliation between England, Ireland, and Northern Ireland. We examine the historical, cultural, literary and social systemic forces that perpetuated 200+ years of conflict that coalesced in the late 1990s to bring an end to violence and a relative normalization of community life. Finally, we also explore the unsettled issues of the “dis-united kingdom” that continues to maintain fault-lines between communities in Northern Ireland. We will be based in Dublin, Belfast, Derry, and Galway.

GOVT 297 TOPICS: WHY LAWYERS? WHAT THEY DO FOR US, WHAT THEY CAN'T, AND WHAT THEY SHOULDN'T

Lawyers play important roles in almost every area of contemporary public life, and yet they are among society's most hated professionals. Why do we have lawyers? What is their purpose? This course explores the functions of lawyers in democratic republics and in adversarial systems of justice. Additionally, the course probes some of the ethical dilemmas lawyers face in their work, emphasizing the responsibilities that lawyers have to their clients, to courts, and to society at large. Course materials draw from works in political and legal theory as well as representations of lawyering in literature and film.

GOVT 297A TOPICS: SOCIAL HEALTH & JUSTICE

In Guatemala we will live humbly and simply with host families in a small village. Students will attend Spanish language school, studying one-on-one with native instructors. Our course is hosted by two non-profit NGOs that are working hard to reduce poverty and promote social justice in Guatemala. SharingtheDream.org works to provide fair-wage employment opportunities for indigenous artisans. We will do hands-on workshops in weaving and jewelry making and volunteer at their Elder center which provides food and medical care to over 60 Maya elders. BioItza.com teaches ancestral customs of indigenous Maya people and manages a tropical forest reserve. We will hike through the reserve learning about the forest that sustained the Maya civilization for millennia, and the challenges as the forests disappear. Other activities will include visits to schools, Tikal National Park, as well as discussions with civil war survivors, indigenous elders facing displacement, and state-sponsored policies regarding land rights. This course will immerse students in the cultural, political, economic, and ecological issues surrounding indigenous peoples in Guatemala. Our focus is on the ongoing work for social justice.

ENST 202/LALC 397 TOPICS: ARAB, CHRISTIAN & JEWISH LEGACIES IN SPAIN & MOROCCO

In this course, students will explore the many aspects of the history and culture of Spain affected by its contact and relationship with Christian, Islamic, and Judaic civilizations throughout the Medieval and Early Modern period in the Iberian Peninsula and the Maghreb (for example, art and architecture, language and literature, religion and law, music and dance, food and customs). Students will thus have many opportunities to gain insight and better understand the historical and ideological contexts relevant to contact between cultures and civilizations in the modern world.

LALC 297 TOPICS: SOCIAL HEALTH & JUSTICE

In Guatemala we will live humbly and simply with host families in a small village. Students will attend Spanish language school, studying one-on-one with native instructors. Our course is hosted by two non-profit NGOs that are working hard to reduce poverty and promote social justice in Guatemala. SharingtheDream.org works to provide fair-wage employment opportunities for indigenous artisans. We will do hands-on workshops in weaving and jewelry making and volunteer at their Elder center which provides food and medical care to over 60 Maya elders. BioItza.com teaches ancestral customs of indigenous Maya people and manages a tropical forest reserve. We will hike through the reserve learning about the forest that sustained the Maya civilization for millennia, and the challenges as the forests disappear. Other activities will include visits to schools, Tikal National Park, as well as discussions with civil war survivors, indigenous elders facing displacement, and state-sponsored policies regarding land rights. This course will immerse students in the cultural, political, economic, and ecological issues surrounding indigenous peoples in Guatemala. Our focus is on the ongoing work for social justice.

MDST 297 TOPIC: GENDER, RACE, AND CLASS IN THE MEDIA

This course critically examines the process in which stereotypes of gender, race, and class are produced, maintained, and challenged in the media. The course looks at the historic, economic, and political legacies that have created pervasive stereotypes that do change (or get remixed), but often continue to uphold the perspective and status of those with power. The course will also complicate traditional identity categories to reveal ways we individually and collectively resist, incorporate, and intermingle our various identities in relation to different media contexts.

PSYC 197 TOPICS: MINDFULNESS AND MEDITATION (WB)

This course provides an introduction to the psychological construct of “mindfulness” and an experiential training in becoming more mindful in everyday life, such as through the practice of meditation. Students will be exposed to diverse teachings on the subject in order to facilitate their own personal discovery of what it means to be “present” and will cultivate an understanding of why being present has been shown to improve well-being. It is the instructor’s hope that this course will help students increase their resilience to stress, understand themselves and others more effectively, focus more deeply, and enjoy life more fully. NOTE: THIS COURSE MEETS ONCE OR TWICE A WEEK IN PERSON. THE REST OF THE WORK WILL BE COMPLETED ONLINE ASYNCHRONOUSLY.

SAL 397 TOPICS: SPORTS AND SOCIETY

Students will examine the history of sports and its significance in economics and politics, and the role of race, Ethnicity, culture and gender in sport and society.