

GEMS - GEMSTONE

GEMS100 Freshman Honors Colloquium: Introduction to Gemstone (1 Credit)

Orienting new Gemstone students to the university and to the program through a variety of team building activities, resources, and skill exploration exercises. Students will also examine and discuss areas such as liberal education, diversity, service, arts, current events, academic integrity, and leadership style.

Restriction: Must be in the Gemstone program.

GEMS101 Introduction to Team Research (3 Credits)

An introduction to the basic concepts and tools needed to evaluate and conduct research. It sets the stage for the research lifecycle and teaches students what they need to know and do before embarking on research endeavors. Students will engage in the early stages of the research process and navigate the consumption and analysis of primary literature while working on interdisciplinary teams. They will undergo the iterative process of identifying gaps in the literature and think creatively about how a team of undergraduates could contribute to solving the world's grand challenges while recognizing constraints such as feasibility, timelines, budgets, novelty, and more. Students will learn skills for collaboration and navigating interdisciplinary teams and together will author and communicate components of a preliminary research proposal.

Restriction: Must be in the Gemstone program.

GEMS102 Research Topic Exploration and Team Formation (1 Credit)

Under the guidance of staff and visiting speakers, students will develop research topics that they will pursue for the remainder of their participation in the Gemstone program, and form into interdisciplinary teams around these topics.

Restriction: Must be in the Gemstone program.

GEMS104 Topics in Science, Technology and Society (STS) (3 Credits)

An examination of how cultural, economic, political and social forces shape scientific and technological systems and, conversely, how scientific and technological systems have affected the culture, economies, organization and politics of societies. Students in the course will form small teams to carry out semester-long research on socio/technical topics related to the course theme chosen for that specific semester.

Prerequisite: GEMS100.

Restriction: Must be in the Gemstone program.

GEMS202 Team Dynamics and Research Methodology (2 Credits)

This experiential course is designed to foster an understanding of effective team dynamics and basic research methodology. It will teach skills applicable to Gemstone team research and the writing of a team thesis. Upperclass Gemstone students serve as discussion facilitators. Students participate in their Gemstone teams and develop a draft of their team thesis proposal.

Prerequisite: GEMS100, GEMS102, and GEMS104.

Corequisite: GEMS296.

Restriction: Must be in the Gemstone program; and sophomore standing or higher.

GEMS208 Special Topics in Leadership and Team Development (1-3 Credits)

Principles, methods and types of leadership and team development with an emphasis on group discussion and decision making. Reading, discussion and exploration of the basic team concept, communications for winning scenarios, goal setting, problem solving, conflict resolution and research methods.

Restriction: Must be in the Gemstone program.

GEMS296 Team Project Seminar I (1 Credit)

This is the first of six seminars during which Gemstone students carry out multidisciplinary research with the guidance of a faculty mentor. The teams develop their working relationship, start their literature search, define their research question, and set short & long term goals.

Prerequisite: GEMS100, GEMS102, and GEMS104.

Corequisite: GEMS202.

Restriction: Must be in the Gemstone program with sophomore standing in a research team.

GEMS297 Team Project Seminar II (2 Credits)

This is the second of six seminars during which Gemstone students carry out interdisciplinary research with the guidance of a faculty mentor. The team develops its website, prepares and presents its research proposal and begins its research project.

Restriction: Must be in the Gemstone program with sophomore standing in a research team.

GEMS396 Team Project Seminar III (2 Credits)

This is the third of six seminars during which Gemstone students carry out interdisciplinary research with the guidance of a faculty mentor. The team presents its progress at the Gemstone Colloquia.

Prerequisite: GEMS297.

Restriction: Must be in the Gemstone program with junior standing in a research team.

GEMS397 Team Project Seminar IV (2 Credits)

This is the fourth of six seminars during which Gemstone students carry out interdisciplinary research with the guidance of a faculty mentor. The team further develops its website. Also they will prepare and present the team project in the poster session of Undergraduate Research Day.

Prerequisite: GEMS396.

Restriction: Must be in the Gemstone program with junior standing in a research team.

GEMS496 Project Writing Seminar (2 Credits)

This is the fifth of six seminars during which Gemstone students carry out research with the guidance of a faculty mentor. The team finishes the analysis of their data and writes and edits its team thesis.

Prerequisite: GEMS397.

Restriction: Must be in the Gemstone program.

GEMS497 Team Thesis Defense (2 Credits)

Gemstone teams will complete the team research project and thesis. The team will formally present the thesis to experts in the area of interest at a Team Thesis Conference before final submission.

Prerequisite: GEMS396.

Restriction: Must be in the Gemstone program.