Fundamentals of Sustainability is an interdisciplinary course designed to introduce undergraduate students to basic concepts and theories of sustainability at global, regional and local levels. The course is organized around four major thematic areas of sustainability: social systems, natural systems, managed systems (business and agriculture), and built systems (architecture and engineering) emphasizing academic strengths of the University of Arkansas.

The aim of this course is to increase the environmental literacy of students and pave the way for both the creative and persistent engagement of sustainability concerns into the students’ own disciplines.

**Social Systems**

Gives an overview concerning who, what, how, and why behind specific social behaviors and dynamics leading to the global environmental crisis. Theories of social justice and equity are reviewed with a focus on how to improve sustainability for future outcomes. This section will also look at the relationship between social inequality (resource allocation) and sustainability. This uneven distribution of resources impacts certain subgroups more than others; particular attention will be paid to discussing the effects of unequal resource distribution on the poor, indigenous, racial/ethnic minorities, women, and the place-bound in both urban and rural areas.

**Natural Systems**

Provides a modern contextual view of Earth as a closed system with respect to matter and development of concepts of material transfers among various components of the Earth System (atmosphere, hydrosphere, geosphere, biosphere). Emphasis is on developing fundamental understanding of systems science, material transfers and mass balance as a means of understanding complex Earth processes. Introduction to the importance of quantitative measures to document environmental change as well as progress toward or retreat from sustainability will be provided. Interconnectedness of Earth processes and implications of interactions among Earth systems will also be discussed.

**Built Systems**

Focuses on the adverse effect that design and construction of buildings, with related infrastructure, have on the preservation of natural resources and quality of the environment. In this part of the course, we address the sustainable theories and concepts in the context of the built world, with the promise that they hold in shaping a better environment, and in changing our views on human-nature relations. Three broad topics will be addressed in the following sequence: regional planning and land use considerations, site-landscape planning, and sustainable design principles for the production of buildings.

**Managed Systems**

Addresses foundations of life cycle analysis, agricultural production-distribution mechanisms, customer good production, business, law and policy. The evolution of agricultural systems and the foundations of agricultural practices for meeting sustainability objectives will be examined. Business foundations for sustainability will be covered, including ethics, the role of consumer preferences and the optimization of sustainability objectives throughout the supply chain.