

# CHEMISTRY CERTIFICATE

---

## Science, Society, and Sustainability

Undergraduate certificate programs are intended to provide additional opportunities to benefit TWU students. Certificate programs are distinct from regular degree programs. Each program is an integrated group of courses that meet a clearly defined need, such as:

1. meeting specific workforce needs with skills and knowledge,
2. providing continuing education or accreditation for a particular profession, or
3. providing basic competency in an emerging area of interdisciplinary study.

### Program Description

Sustainability can be defined as using resources to meet the needs of today without jeopardizing future generations from being able to do the same. However, different disciplines have different perceptions with regard to sustainable practices. The goal of the Certificate in Science, Society, and Sustainability is to integrate the principles and values of sustainable practices into all aspects of education and learning in order to enable our students to address the social, economic, cultural, and environmental problems facing the new millennium.

### Program Requirements

The certificate requires 15 credits of upper-division courses (i.e., 3000 and 4000 level) in an organized and integrated course of study. Students will be responsible for any prerequisites for courses required for the certificate. A capstone course requiring a civic engagement component addressing a local sustainability issue is also required.

### Coursework

The first course serves as a foundation for the certificate. All students pursuing the certificate will be required to take this course. *Community Conversations in Sustainability (SCI 3013)* is a multidisciplinary, team-taught course discussing all aspects of sustainability from scientific, sociological, and economic points of view. Topics include the impacts of energy production, food production, industry, and our modern lifestyle on our local and global community with an emphasis on systems and possible solutions. The course is formatted as a three-credit seminar.

The building block courses will examine sustainability within specific disciplines in the College of Arts and Sciences. Students would be required to take at least one 3000 or 4000 level course (3 credits each) in the three areas of focus (Natural Sciences and Mathematics; Arts, Humanities and Social Sciences; Government and Business) from a list provided by appropriate departments. This would total a minimum of 9 credits.

The synthesis course is a capstone course where students take everything they have learned and put it all together within a civic engagement project. All students pursuing the certificate will also be required to take this course. *SCI 4913* is a three-credit independent study course that requires completion of a civic engagement project with a public presentation of sustainable solutions for a selected complex civic issue.

### Benefits to Students

Upon completion of the certificate, students will be able to understand the nature of sustainability from different disciplinary points of view

enabling them to make smart decisions about their careers and lifestyles.

More importantly, it will give them critical thinking and communication skills that will benefit them in their chosen careers.