

CHEMICAL AND BIOMOLECULAR ENGINEERING

Department Information

The USA Graduate School offers an interdisciplinary PhD program in Chemical and Biomolecular Engineering. The purpose of the PhD program is to produce graduates who can apply the fundamental principles of thermodynamics, mass transfer, and reaction kinetics to a variety of technical areas, such as drug discovery, industrial chemistry, biological systems, and environmental engineering. As an interdisciplinary program housed in the Graduate School, the PhD in Chemical and Biomolecular Engineering aligns with the mission of the University of South Alabama by delivering high quality graduates who will promote discovery, health, and learning to the citizens of Alabama and the Gulf Coast region.

Because the program is built upon the application of chemistry, the central science, and is interdisciplinary by design, graduates will find careers in diverse areas such as petrochemical, chemical processing, biotechnology, green technologies, pharmaceuticals, and private consulting. However, the program will also qualify graduates for academic appointments as professors, post-graduate researchers, and research scientists in university programs and laboratories. There is a growing demand for PhD graduates who possess the analytical skills to move from molecular design to process design using state-of-the-art, cutting-edge technologies, and this program will meet this need.

Succinctly list at least four (4) but no more than seven (7) of the most prominent student learning outcomes of the program. These outcomes should lend themselves to subsequent review and assessment of program accomplishments.

Graduates of the program will be able to:

1. integrate and apply advanced chemical and biomolecular analytical tools and techniques to solve problems in a specific science, technology, engineering, or math domains
2. formulate a significant research question and demonstrate the ability to carry out a research plan from inception to dissemination to answer such a question
3. obtain employment in chemical and biomolecular related positions in industry, academia, or government
4. work effectively on an interdisciplinary team in a variety of laboratory settings
5. present research findings in professional and academic journals

Admissions

The admission requirements required by the Graduate School of the USA as listed below.

- Statement of purpose
- Three letters of recommendation
- Curriculum vita
- Official transcripts from all previous institutions attended
- A baccalaureate or graduate degree in a closely related field. A graduate degree is not required for admission

- An undergraduate minimum GPA of 3.0 overall or a graduate minimum of 3.5 overall (4 point scale)
- Official scores for the Graduate Records Examination (GRE)
- A completed application for admission to the Graduate School
- For international students, an official TOEFL, IELTS, iTEP, or Pearson (PTE Academic) score, or an equivalent level of competence as exhibited by a bachelor or graduate degree from an accredited university in the United States is required. The minimum required test scores are: TOEFL – 525 on the paper version, 197 on the computer version, or 71 on the internet version; IELTS – 6.0; iTEP – 3.7; Pearson's (PTE Academic) - 4
- Some variances in these admissions requirements may be allowed as approved by the program coordinator.

Degrees, Programs, or Concentrations

- Chemical and Biomolecular Engineering (PhD) (<http://bulletin.southalabama.edu/programs-az/graduate/chemical-biomolecular-engineering/chemical-biomolecular-engineering-phd/>)