



Louisiana Tech College of Engineering & Science Grand Challenge Scholars Program

The National Academy of Engineering has outlined 14 Grand Challenges that focus on some of the most complex and important issues of the 21st century. To solve them will require the best efforts of scientists and engineers integrating their knowledge and creativity and working with a variety of other experts in global and social issues. The Grand Challenge Scholars Program is designed to prepare students to help solve these challenges.

Curricular Plan

Each applicant must develop a Curricular Plan which addresses the five curricular components. The Curricular Plan must also demonstrate intellectual and thematic connectivity across the five curricular components and a Grand Challenge theme or problem.

* Note that the average of all final attempts of courses used to satisfy GCSP requirements must be a “B” or higher.

- 1) **Research Experience** participate in an approved team or independent research or design project and course(s)* relating to a Grand Challenge theme or specific Grand Challenge problem.
- 2) **Interdisciplinary Curriculum** complete either the Living With The Lab Freshman Engineering Curriculum* or integrated science curriculum * and one of the following*:

BISC 470 – Medical Ethics	HNRS 114 – Foundations of Behavioral Thought
BLAW 255 – Legal Environment of Business	POLS 350 – International Relations
HNRS 110 – Foundations of Sociological Thought	HNRS 212 – Foundations of American Political Thought
- 3) **Entrepreneurship** either enter a Grand Challenge-related project in the Tech Entrepreneurs Top Dawg Competition; or complete* ENTR 430 - Innovative Product Design or ENTR 460 – Innovative Venture Research.
- 4) **Global Dimension** complete* either:
 - a. Louisiana Tech University Study Abroad Program;
 - b. an approved international study program;
 - c. an internship with a significant global focus;
 - d. a research experience with a significant global focus; or
 - e. GEOG 205 - Cultural Geography or HNRS 114 – Foundations of Behavioral Thought, and one of the following courses*:

HIST 406 - Modern Eastern Europe	HIST 441 - History of Latin America since 1824
GEOG 470 - Urban Geography	HIST 436 - History of the Modern Near East
POLS 465 - Asian Politics	POLS 460 - Politics of Developing Nations
POLS 350 – International Relations	POLS 302 - Comparative Foreign Governments
POLS 355 - American Foreign Policy	SOC 360 - Sociology of Terrorism & Social Movements

Students must submit a justification for how their proposed experience will cultivate an enhanced global awareness in their field.

- 5) **Service Learning** participate one or more years as:
a Supplemental Instruction tutor, or a Bulldog Achievement Resource Center (BARC) Tutor, or a Freshman Engineering Help Desk Worker, or a sustained contribution for one or more years to: Bulldogs without Borders project, or Louisiana Tech Engineering and Science Association (LTESA) service project(s), E&S Magazine Staff, or equivalent approved experience.

At least one of the five components must be completed at “Level 3”:

- **Research Component:** *150 hours faculty supervised research or REU & poster/presentation/peer-reviewed publication*
- **Entrepreneurship:** *Top Dawg Final Round participation or completion of ENTR430 & ENTR460*
- **Global Dimension:** *A Louisiana Tech University Study Abroad Program with a GC theme OR an approved international study program with a GC theme OR a Bulldogs without Borders project (sustained contribution of a year or more)*
- **Service Learning:** *1+ years on BWB or ESA project, E&S Magazine Staff or equivalent*

At most one of the five components must be completed at “Level 1”:

- **Research Component:** *GC theme-related freshman design project*
- **Entrepreneurship:** *enter a GC-related idea into Top Dawg Idea Pitch and compete through the Investor Deck prep or complete one of ENTR 430/460*
- **Global Dimension:** *coursework only option*

Applying to the Grand Challenge Scholars Program: To apply to become a GC Scholar Apprentice, a student must:

- 1) Submit a completed application form (including a personal essay, recommendations from two COES faculty, including a GC Faculty Mentor);
- 2) Submit a proposed GC Curricular Plan which encompasses the required five curricular components as outlined in the GCSP Program.

GC Faculty Mentor

Each GC Scholar Apprentice must have a GC Faculty Mentor to counsel and direct the completion of their Curricular Plan. At the completion of the Plan, the Mentor must write a letter of recommendation to the GC Steering Committee, to accompany the Apprentice’s final report, in support of their application to be named a Louisiana Tech College of Engineering and Science Grand Challenge Scholar.

GC Progress Review

To remain in the program, a GC Scholar Apprentice must meet once a year with their GC Faculty Mentor/GCSP Director to review their progress and Curricular Plan and submit an annual progress report to their GC Faculty Mentor outlining their accomplishments for the past academic year and a detailed plan for the upcoming academic year. For GCSP Completion, the average of all final attempts of courses used to satisfy GCSP requirements must be a “B” or higher.

GCSP Recruitment

The program is introduced to incoming freshman each fall in University 100 and through promotion at student organizations and the College’s annual Gumbofest. Fall and a Spring Recruiting events are also held to sign up new students. A Showcase is held each Spring for graduates of the program to highlight their experiences.

Want more Info on the **Louisiana Tech College of Engineering and Science GSCP?**

Check out the website at: <http://coes.latech.edu/students/gcscholars.php>

or contact: Dr. Leland Weiss, Director, Grand Challenge Scholar Program, at:
lweiss@latech.edu

