



Louisiana Tech College of Engineering & Science Grand Challenge Scholars Program

The National Academy of Engineering has outlined fourteen 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 all courses must be completed with a grade of "B" or higher in each course

1) **Research Experience**

participate in an approved team or independent senior capstone 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

BLAW 255 – Legal Environment of Business

HNRS 110 – Foundations of Sociological Thought

HNRS 114 – Foundations of Behavioral Thought

HNRS 212 – Foundations of American Political Thought

POLS 350 – International Relations.

3) **Entrepreneurship**

Either enter a Grand Challenge-related project in the Tech Entrepreneurs Top Dawg Business Plan Competition; or complete* ENTR 430 - Innovative Product Design, and 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, and one of the following courses*:

HIST 406 - Modern Eastern Europe

GEOG 470 - Urban Geography

POLS 465 - Asian Politics

POLS 350 - International Relations

POLS 355 - American Foreign Policy

HIST 441 - History of Latin America since 1824

HIST 436 - History of the Modern Near East

POLS 460 - Politics of Developing Nations

POLS 302 - Comparative Foreign Governments

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 sustained contribution for one or more years to: Engineers without Borders project, or Louisiana Tech Engineering and Science Association (LTESA) service project(s), or equivalent approved experience.

Applying to the Grand Challenge Scholars Program

To apply to become a GC Scholar Apprentice, a student must:

- 1) Be at least a sophomore** engineering or science major
- 2) Have a cumulative GPA of 3.5 or better on all attempts of all courses;
- 3) Submit a completed application form (including a personal essay, recommendations from two COES faculty, including a GC Faculty Mentor);
- 4) Submit a proposed GC Curricular Plan which encompasses the required five curricular components as outlined in the GCSP Program.

** defined as enrolled in sophomore-level or higher engineering or science courses as listed on the appropriate official curriculum sheet.

The GC Oversight Committee will review all applications/recommend students for admission. A maximum of 50 students can be enrolled in the program at any time.

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 maintain a 3.2 or better GPA on all attempts of all courses, meet once a quarter 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.

GCSP Recruitment

A college-wide GCSP Kick-Off Event is being held in September 2010 to recruit both GC Scholars and Faculty Mentors. Presentations are also being made to student organizations and to select K-12 audiences. A brochure, poster and plasma slide (for display in each building) have been developed to increase student awareness of the GCSP.

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

Check out the website at:

<http://www.latech.edu/coes/gcscholars>

or contact: Dr. Jenna Carpenter, Director, Grand Challenge Scholar Program, at:
jenna@latech.edu

