

Louisiana Tech College of Engineering & Science Grand Challenge Scholars Program



Application & Curricular Plan (2019+)

Note: Annual progress 'check-ins' with GCSP faculty mentors to help make adjustments to your plan as you go. Be sure to sit down with a GCSP mentor to help plan this initial application document before submitting online to Moodle.

5 GC Competencies:

Each GC Scholar Apprentice must develop a Curricular Plan which satisfactorily addresses each of the following competencies. Each GCSP Apprentice must complete at least one of the five competencies at a Level 3 and at most one at a Level 1.

1)	<u>Talent Competency</u> : mentored research / creative experience on a Grand Challenge-like <u>topic</u>			
	Your plan should include one of the following:			
	Level 1: GC theme-related freshman design project and course(s)			
	Level 2: GC theme-related senior design project and course(s) Level 3:150 hours faculty-supervised GC-related research* OR GC-related Internship Experience* OR GC-related REU Program*			
	*To complete this competency, students must also participate in one of the below, that summarizes their work: A poster/presentation at a scholarly meeting OR A peer-reviewed technical publication			
Additional information:				

2)	<u>Multidisciplinary Competency: understanding multidisciplinarity of engineering systems solutions developed through personal engagement</u>			
	Should include a satisfactory completion of either:			
	Living With The Lab or Living with Cyber Freshman Engineering Curriculum and corresponding integrated mathematics (MATH 240, 241, 242) and science (CHEM 100, CHEM101, PHYS 201) courses as required by the major			
	OR Integrated Science Curriculum (all math, chemistry, biology and physics courses, including labs, required by the major)			
	AND one of the following courses (or suggest one of your own):			
	BISC 470 – Bioethics POLS 350 – International Relations BLAW 255 – Legal Environment of HNRS 114 – Foundations of Business Geographic Thought HNRS 110 – Foundations of HNRS 212 – Foundations of Sociological Thought American Political Thought			
	Suggested alternative:			
3)	Viable Business/Entrepreneurship Competency: understanding, preferably developed though experience, of the necessity of a viable business model for solution implementation			
	Your plan should include one of the following:			
	Level 1: Enter the Top Dawg Idea Pitch and complete through Investor Deck preparation OR			
	Complete one of the following courses:			
	ENTR 430 - Innovative Product Design ENTR 460 - Innovative Venture Research			
	Level 2: Top Dawg up through Preliminary Round Participation			
	Level 3: Top Dawg Final Round Participation OR			
	ENTR 430 - Innovative Product Design AND ENTR 460 – Innovative Venture Research			
	Level: Your proposed idea, please include additional writeup (no more than ½ page) and proposed Level of completion. Level proposed can be 2 or 3			

4) <u>Multicultural Competency:</u> understanding different cultures, preferably through multicultural experiences, to ensure cultural acceptance of proposed engineering solutions

For any Level 2 or 3 activity, students must submit a justification of how their activity meets the goals of the Multicultural Competency. Activities may include:

Your plan should include one of the following (please specify the program and quarter pursued
Level 1: GEOG 205 - Cultural Geography OR HNRS 114 - Foundations of Geographic Thought
AND one of the following courses (for Level 1):
GEOG 470 - Urban Geography HIST 406 - Modern Eastern Europe HIST 436 - History of the Modern Near East HIST 441 - History of Latin America since 1824 SOC 360 - Sociology of Terrorism and Social Movements POLS 355 - American Foreign Polic POLS 350 - International Relations POLS 302 - Comparative Foreign Governments POLS 460 - Politics of Developing Nations POLS 465 - Asian Politics
Level 2: An internship with a significant global focus and GC theme OR A research experience with a significant global focus and GC theme
Level 3: 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)
Level: Your proposed idea, please include additional writeup (no more than ½ page) and proposed Level of completion. Level proposed can be 2 or 3

	ness Competency: understanding that the engineering solutions should ble and society reflecting social consciousness	
Activities may includ	le:	
A sustained contribution of one or more years as one of the following. You may suggest your own Level 1 activity working with faculty mentor for input.		
Level 2:	A Supplemental Instruction tutor OR A BARC tutor OR A Freshman Engineering Help Desk worker	
Level 3:	A Bulldogs without Borders project OR A Louisiana Tech Engineering and Science Association (LTESA) service project(s) OR E&S Magazine Staff OR	
	_: Your proposed idea, please include additional writeup (no more than sed Level of completion. Level proposed can be 1, 2 or 3	
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NOTES

- Please note that most courses and co-curricular activities cannot satisfy more than one competency. In some cases, a broad activity with significant engagement in different areas may be used to satisfy more than one. Please work with your mentor and / or the GCSP Steering Committee for guidance in these instances.
- 2) **Curricular Connectivity** When possible, the submitted plan should reflect one of the four themes of the Grand Challenges:
 - Sustainability
 - Health
 - Joy of Living
 - Security / Reducing vulnerability to human & natural threats

Questions about the Louisiana Tech College of Engineering and Science GCSP?

Check out the website at: https://sites.google.com/email.latech.edu/gcsp-latech/ or contact: Dr. Leland Weiss, Director GCSP at: BH 257, lweiss@latech.edu/gcsp-latech/