

GFU Grand Challenges Scholars Program **Curricular Requirements & Deliverables**

What is the NAE Grand Challenge Scholars Program?

The National Academy of Engineering has identified 14 Grand Challenges for Engineering in the 21st century. The Grand Challenges (GC) are a call to action and serve as a focal point for society's attention to opportunities and challenges affecting our quality of life. (See [here](#) for a list of the challenges). George Fox Engineering has joined a select group of engineering schools who have taken on the mission to educate a new generation of engineers expressly equipped to tackle these pressing issues facing society in the 21st century.

Why Become a Grand Challenge Scholar?

As a GFU Engineering GC Scholar you will be part of a select cadre of students across the country uniquely prepared and motivated to address the most challenging problems facing our nation and the world. Industry is calling out for engineering graduates that are globally-minded and culturally aware systems thinkers - all skills learned and embodied by GC Scholars.

Upon successful completion, GC Scholars will receive:

- **National Academy of Engineering recognition**
 - Grand Challenge Scholar letter from the President of the National Academy of Engineering
 - Inclusion in the annual NAE Grand Challenge Scholar press release & web listing of all scholars.
- **GFU Transcript will denote your GCPS status upon graduation (TBD)**
- **Engineering Department graduation recognition**
 - Medallion to wear with your regalia at commencement.
 - Notation in the graduation program

What are the requirements to become a Grand Challenge Scholar?

In an effort to acquire and integrate the engineering and non-engineering expertise necessary to tackle a GC problem, students are required to complete the following six curricular components (within the context of their GFU coursework):

- **Research:** GC related research with GFU faculty advisor
- **Interdisciplinary curriculum:** Students' reflection on how their courses have had overlap and how the knowledge gained benefited their GC research
- **Entrepreneurship:** Students' understanding on the economic and societal implications of their work
- **Global Engagement:** Time and experience engaging with people from a different culture, ideally abroad
- **Service Learning:** Time and effort engaging in societal service related to selected challenge
- **Faith Integration:** A reflection on how students' faith (or belief system) integrated into and/or shifted because of GC research activities

Curricular Components & Deliverables:

At the completion of all activities required by the GC Program (and no later than the twelfth week of their final semester), each GC Scholar must:

- 1) Complete a **personal website (i.e., Google Sites)** that showcases their curricular portfolio addressing the **6 curricular requirements** (Table 1).
- 2) Complete a presentation (Spring semester of Senior year) to present and share information about their scholarship and project experiences. The presentations will be given at the annual Spring Engineering Expo which occurs in the final week of the spring semester.
- 3) **Upon successful completion of these activities, the GC Scholar Apprentice will be named a George Fox College of Engineering Grand Challenge Scholar!**

Table 1: Summary of GC Curricular Components and GFU Requirements

GC Curricular Components	GFU Requirements
Research Experience	GFU faculty-mentored research project related to a GC theme or problem (100 hours minimum engagement)
	500 –750 word post on their personal website with two or three images showing the research that was conducted and findings that resulted
Interdisciplinary Curriculum	1 credit Grand Challenges Colloquium (ENGR285, offered every Fall Semester)
	500 –750 word post with one or two images on personal Google Site discussing why you are choosing (said) GC and what you think it means to society
Entrepreneurship	GC-related entrepreneurial project in ENGR 381 and 382, or ENGR 481 and 482
	A 500 – 750 word post with one or two images on personal Google Site visioning how their GC could influence, and/or be influenced, by economic factors, business (for profit or not-for-profit) opportunities and/or commercial ventures
Global Dimension	A project or internship that requires foreign travel and/or interaction with foreign stakeholders (remote interaction is OK!) for data collection and analysis
	OR
	George Fox University Juniors Abroad or Int'l May Serve Program
	OR
	Approved International Study Program
	OR
	Other international travel experience/internship
	AND
	500 – 750 word post with pictures on personal Google Site reflecting on how said experience showed them the global significance of their GC
Service Learning	10–15 hours volunteering with an organization or company that does work related to the student’s GC
	500 – 750 word post describing the work that was done and what was learned
Faith Integration	500 – 750 word post with one or two pictures on personal Google Site where you reflect on how their faith (or belief system) informed your GC activities, and how their faith (or belief system) was influenced throughout your time in the GCSP