

Assessment Plan

2021-22



IND - Engineering

University Mission: George Fox University, a Christ-centered community, prepares students spiritually, academically, and professionally to think with clarity, act with integrity, and serve with passion.

Program Mission: Prepare technically competent and broadly educated engineers for a life of responsible service emerging from a Christian worldview.

Alignment With GFU Mission: The Engineering Program mission aligns with the GFU mission in the following ways:

- Embraces the Christian mission
- Promotes academic excellence
- Emphasizes importance of practical knowledge, ethical behavior and critical thinking
- Prepares students for a life of responsible service

Degree Outcomes: George Fox engineering graduates will have:

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- An ability to communicate effectively with a range of audiences
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Assessment Lead: Mike Foster

Outcome: Outcome 1

an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Outcome Status: Active

Assessment Tools

Survey - Senior Survey (Active)

Target: 80% of responses are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Exam/Quiz - In Course - Rubric for 1a (instructor developed) (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Exam/Quiz - In Course - Rubric for 1b (instructor developed) (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

IND - Engineering

Exam/Quiz - In Course - Rubric for 1c (instructor developed) (Active)

Target: 80% of rubric results are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Related Documents:

[ENGM 211 Final Exam - Outcome \(a\) - Student 1.pdf](#)

[ENGM 211 Final Exam - Outcome \(a\) - Student 2.pdf](#)

[ENGM 211 Final Exam - Outcome \(a\) - Student 3.pdf](#)

[ENGM 211 Final Exam - Outcome \(a\) Results.xlsx](#)

[ENGM 320 Final Exam - Outcome \(a\) - Student 1.pdf](#)

[ENGM 320 Final Exam - Outcome \(a\) - Student 2.pdf](#)

[ENGM 320 Final Exam - Outcome \(a\) - Student 3.pdf](#)

[ENGM 320 Final Exam - Outcome \(a\) Results.xlsx](#)

Exam/Quiz - In Course - Rubric for 1d (instructor developed) (Active)

Target: 80% of rubric scores 3 or 4

Schedule for Data Analysis & Reporting: Annual

Related Goals

Mission Elements

Core Theme 2.1 - GFU students demonstrate competence in their respective fields of study by obtaining licensure or credentials needed to practice.

Core Theme 2.2 - GFU students apply professional competence by successfully obtaining entrance to graduate school, additional preparation, and/or successful employment in the field

Outcome: Outcome 2

an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

Outcome Status: Active

Assessment Tools

Survey - Senior Survey (Active)

Target: 80% of responses are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Capstone Assignment - Senior Design - Rubric for Outcome 2 (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Capstone Assignment - Servant Engineering - Rubric for Outcome 2 (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Related Goals

Mission Elements

IND - Engineering

Core Theme 2.1 - GFU students demonstrate competence in their respective fields of study by obtaining licensure or credentials needed to practice.

Core Theme 2.2 - GFU students apply professional competence by successfully obtaining entrance to graduate school, additional preparation, and/or successful employment in the field

Core Theme 4.1 - GFU students, faculty, and staff/administrators apply their leadership knowledge and skills in communities, both local and global

Core Theme 4.2 - GFU students, faculty, staff & administrators demonstrate engagement in improving the human condition by serving people both locally and globally

Outcome: Outcome 3

an ability to communicate effectively with a range of audiences

Outcome Status: Active

Assessment Tools

Survey - Senior Survey (Active)

Target: 80% of responses are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Laboratory Assignment - Rubric for 3a (Writing) (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Presentation/Performance - Rubric 3b (Present to group) - SD team presents to client (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Presentation/Performance - Rubric 3b (Present to group) - SE team year-end presentation (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Presentation/Performance - Rubric 3b (Present to group) - presentations in various courses (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Presentation/Performance - Rubric 3c (Comm. in meetings) - SD Students (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Presentation/Performance - Rubric 3c (Comm. in meetings) - SE Students (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Related Goals

IND - Engineering

Mission Elements

Core Theme 1.1 - General Education. Undergraduates complete a general education package that helps them develop foundational skills, acquire knowledge in a breadth of disciplinary domains, and interact productively across differences.

Core Theme 2.1 - GFU students demonstrate competence in their respective fields of study by obtaining licensure or credentials needed to practice.

Core Theme 2.2 - GFU students apply professional competence by successfully obtaining entrance to graduate school, additional preparation, and/or successful employment in the field

Outcome: Outcome 4

an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Outcome Status: Active

Assessment Tools

Survey - Senior Survey (Active)

Target: 80% of responses are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Survey - EERI (Active)

Target: Cumulative average N2_100 = 53 (or higher) for Seniors
(the target is the average N2_100 score for EPICS at Purdue as reported by Carla Z.)

Schedule for Data Collection: Annual

Schedule for Data Analysis & Reporting: Annual

Survey - EVA (Active)

Target: 80% of responses are 3 or 4

Schedule for Data Collection: Annual

Schedule for Data Analysis & Reporting: Annual

Capstone Assignment - Rubric 4c in SD (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Capstone Assignment - Rubric 4c in SE (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Capstone Assignment - Rubric 4d in SD (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Capstone Assignment - Rubric 4d in SE (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

IND - Engineering

Related Goals

Mission Elements	
Core Theme 2.1	- GFU students demonstrate competence in their respective fields of study by obtaining licensure or credentials needed to practice.
Core Theme 2.2	- GFU students apply professional competence by successfully obtaining entrance to graduate school, additional preparation, and/or successful employment in the field
Core Theme 2.3	- GFU students demonstrate an ethical orientation, shaped by Christian values, in their professional practice

Outcome: Outcome 5

an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives

Outcome Status: Active

Assessment Tools

Survey - Senior Survey (Active)
Target: 80% of responses are 3 or 4 Schedule for Data Analysis & Reporting: Annual
Survey - CATME in Servant Engineering (Active)
Target: 80% of responses are 3 or 4 Schedule for Data Analysis & Reporting: Annual
Survey - CATME in Senior Design (Active)
Target: 80% of responses are 3 or 4 Schedule for Data Analysis & Reporting: Annual

Related Goals

Mission Elements	
Core Theme 2.2	- GFU students apply professional competence by successfully obtaining entrance to graduate school, additional preparation, and/or successful employment in the field

Outcome: Outcome 6

an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Outcome Status: Active

Assessment Tools

Survey - Senior Survey (Active)
Target: 80% of responses are 3 or 4 Schedule for Data Analysis & Reporting: Annual

IND - Engineering

Laboratory Assignment - Rubric for 6a "Design an Experiment" (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Laboratory Assignment - Rubric for 6b "Conduct an Experiment" (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Laboratory Assignment - Rubric for 6c "Analyze and Interpret Data" (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Related Goals

Mission Elements

Core Theme 2.1 - GFU students demonstrate competence in their respective fields of study by obtaining licensure or credentials needed to practice.

Core Theme 2.2 - GFU students apply professional competence by successfully obtaining entrance to graduate school, additional preparation, and/or successful employment in the field

Outcome: Outcome 7

an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Outcome Status: Active

Assessment Tools

Survey - Senior Survey (Active)

Target: 80% of responses are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Student Self Assessment - 3 questions on EVA using a Likert-like scale (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Capstone Assignment - Rubric 7b in SD (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Capstone Assignment - Rubric 7b in SE (Active)

Target: 80% of rubric scores are 3 or 4

Schedule for Data Analysis & Reporting: Annual

Presentation/Performance - Rubric 7b in various classes (Active)

Target: 80% of rubric scores 3 or 4

Schedule for Data Analysis & Reporting: Annual

IND - Engineering

Related Goals

Mission Elements
Core Theme 1.1 - General Education. Undergraduates complete a general education package that helps them develop foundational skills, acquire knowledge in a breadth of disciplinary domains, and interact productively across differences.
Core Theme 2.1 - GFU students demonstrate competence in their respective fields of study by obtaining licensure or credentials needed to practice.
Core Theme 2.2 - GFU students apply professional competence by successfully obtaining entrance to graduate school, additional preparation, and/or successful employment in the field