Affordable Learning Georgia Affordable Materials Grants
Transformation Grants Final Report

(or Textbook Transformation Grants, if R17 or earlier)

Once you have completed this template, to submit your Final Report, go to the [Final Report submission form.](#)

The final report submission form allows you to submit the following:

- This completed narrative document (required)
- Syllabus or syllabi (required)
    - *If multiple files, compress into one .zip folder*
- Qualitative/Quantitative Measures data files (optional, as needed)
    - *If multiple files, compress into one .zip folder*
- Photo of your team or a class of your students for future ALG promotions (optional)
- Invoice for the second half of the grant's award amount (optional)

Follow the instructions on the webpage for uploading your documents. Based on receipt of this report, ALG will process the final payment for your grant. ALG will follow up in the future with post-project grantee surveys and may also request your participation in a publication, presentation, or other event.

General Information

Date: 1/15/2025

Grant Round: 24

Grant Number: 671

Institution Name(s): Georgia Southern University

Project Lead: Yue Zhang, Associate Professor, Department of Manufacturing Engineering, yzhang@georgiasouthern.edu

Team Members (Name, Title, Department, Institutions if different, and email address for each): Bishal Silwal, Associate Professor, Department of Mechanical Engineering, bsilwal@georgiasouthern.edu

Course Name(s) and Course Numbers: MFGE/MENG 3333 Materials Processing Studio

Semester Project Began: Spring 2024

Final Semester of Implementation: Fall 2024

Total Number of Students Affected During Project: 20

1. Narrative

A. *Describe the key outcomes, whether positive, negative, or interesting, of your project. Include:*

- *Summary of your transformation experience, including challenges and accomplishments*
- *Transformative impacts on your instruction*
- *Transformative impacts on your students and their performance*

Transformation Experience:

Accomplishments: The project successfully transitioned the course to entirely open educational resources (OER), reducing the financial burden on students and enhancing accessibility. New course materials, including lecture slides and lab manuals, were developed and shared under the CC BY 4.0 license. These resources aligned with course objectives and improved engagement by integrating interactive elements like videos and simulations.

Challenges: The materials were posted on a newly developed website for this project. Students and instructors needed to switch from the D2L Folio online learning platform, which they have been using, to the new website. This transition posed adoption challenges as both groups experienced difficulties adapting to the unfamiliar platform. Additionally, MFGE 3333, which was originally offered as MFGE 2433, underwent a course number change, shifting it from a sophomore to a junior-level course. This change resulted in the cancellation of the spring and fall sections due to low enrollment.

Transformative Impacts on Instruction:

The use of OER encouraged more flexible and innovative teaching methods. Faculty leveraged the modularity of the resources to tailor content delivery based on their observation of students' needs during classes. The project also polished instructors' skills in searching, selecting, and developing OER materials, enhancing their ability to create high-quality educational resources.

Transformative Impacts on Students:

Students expressed high satisfaction with the no-cost materials, reporting reduced stress and improved accessibility. Despite some challenges in adapting to new learning platform, students' overall engagement and retention in the course remained strong.

B. *Describe lessons learned, including any things you would do differently next time.*

The integration of interactive elements, such as videos and simulations, was particularly effective in enhancing student engagement. Collaborative development among team members ensured a cohesive and comprehensive set of materials. Transitioning to a new course website presented initial usability challenges for students and instructors, highlighting the need for additional orientation sessions to mitigate these issues in future implementations. To further enhance the implementation, a key improvement would involve integrating the course materials into the D2L Folio platform. This integration would provide a familiar interface for students and instructors, easing the transition and ensuring seamless access to resources.

C. *Describe any materials you created or revised/remixed that will be shared with the public. Include the open license your materials will be shared under—for most materials, this will be an Attribution 4.0 License (CC BY) as required in the Grants Request for Proposals.*

All materials have been shared under the CC BY 4.0 license and are publicly available through OpenALG and the project website. The project team created comprehensive lab manuals on cold casting, which provide detailed procedures and real-world applications to enhance student comprehension. In addition, we incorporated and remixed lecture slides and textbook chapters from Open Course Ware (OCW) and Google Books, and free technology training videos from various societies. These materials were adapted to align with course objectives and integrated seamlessly into the course structure.

2. Quotes

Provide three quotes from students evaluating their experience with the no-cost learning materials.

1) *"It is not as stressful having to pay for a textbook. The free materials are very helpful."*
2) *"Having free materials helps in so many ways, having less cost on school materials has been amazing."*
3) *"The free material is great. I have a full-time job, and this made studying more accessible and affordable."*

3. Quantitative and Qualitative Measures

A. Uniform Measurements Questions

The following are uniform questions asked to all grant teams. Please answer these to the best of your knowledge.

Student Opinion of Materials

Was the overall student opinion about the materials used in the course positive, neutral, or negative?

Total number of students affected in this project: ___20_____

- Positive: ___100____ % of ___12_____ number of respondents
- Neutral: _____ % of _____ number of respondents
- Negative: _____ % of _____ number of respondents

Student Learning Outcomes and Grades

Was the overall comparative impact on student performance in terms of learning outcomes and grades in the semester(s) of implementation over previous semesters positive, neutral, or negative?

Student outcomes should be described in detail in Section 3b.

Choose One:
- ___ Positive: Higher performance outcomes measured over previous semester(s)
- ___ Neutral: Same performance outcomes over previous semester(s)
- __x_ Negative: Lower performance outcomes over previous semester(s)

Student Drop/Fail/Withdraw (DFW) Rates

Was the overall comparative impact on Drop/Fail/Withdraw (DFW) rates in the semester(s) of implementation over previous semesters positive, neutral, or negative?

Depending on what you and your institution can measure, this may also be known as a drop/failure rate or a withdraw/failure rate.

___100____% of students, out of a total ___20____ students affected, dropped/failed/withdrew from the course in the final semester of implementation.

Choose One:

- ___ Positive: This is a lower percentage of students with D/F/W than previous semester(s)
- __x_ Neutral: This is the same percentage of students with D/F/W than previous semester(s)
- ___ Negative: This is a higher percentage of students with D/F/W than previous semester(s)

B. Measures Narrative

In this section, summarize the supporting impact data that you are submitting, including all quantitative and qualitative measures of impact on student success and experience. Include all measures as described in your proposal, along with any measures developed after the proposal submission.

[When submitting your final report, as noted above, you will also need to provide the separate file (or .zip with multiple files) of supporting data on the impact of your Textbook Transformation, such as surveys, analyzed data collected, etc.]

- *Include measures such as:*
  - *Drop, fail, withdraw (DFW) delta rates*
  - *Course retention and completion rates*
  - *Average GPA*
  - *Pre-and post-transformation DFW comparison*
  - *Student success in learning objectives*
  - *Surveys, interviews, and other qualitative measures*
- *Indicate any co-factors that might have influenced the outcomes.*

To assess the impact of implementing no-cost learning materials, the following quantitative and qualitative measures were analyzed:

1. Student Feedback Survey

Table 1. Students' Responses to "The free materials enhanced my learning experience in this course."

Note: in the survey, students are asked to express their opinion on a list of questions using a 10-point Likert scale where 1 is strongly disagree, 5 is neutral, and 10 is strongly agree.

Rating (1-10)	1	2	3	4	5	6	7	8	9	10
Percentage	0%	0%	0%	0%	0%	0%	0%	8%	8%	84%

Table 2. Students' Opinion on the OER course materials.

Note: in the survey, students are asked to express their opinion on a list of questions using a 10-point Likert scale where 1 is strongly disagree, 5 is neutral, and 10 is strongly agree.

Field	Min	Max	Mean	Standard Deviation	Variance	Responses	Sum
The free learning materials provided in this course were easy to understand and follow.	8	10	9.67	0.62	0.39	12	116
The free materials enhanced my learning experience in this course.	7	10	9.58	0.86	0.74	12	115
I prefer using free digital materials over purchasing a traditional textbook.	1	10	8.83	2.73	7.47	12	106
The free materials were accessible and easy to use across different devices (e.g., laptop, tablet, smartphone).	7	10	9.75	0.83	0.69	12	117
I would recommend using free learning materials in other courses.	9	10	9.92	0.28	0.08	12	119
I appreciated not having to purchase a textbook and using the provided free materials instead.	7	10	9.75	0.83	0.69	12	117
I prefer using the selected open-source/free learning materials over a paid textbook for this course.	9	10	9.83	0.37	0.14	12	118
I would be willing to enroll in another course that utilizes open/free learning materials.	9	10	9.92	0.28	0.08	12	119

Survey results revealed overwhelmingly positive feedback, with 100% of respondents agreeing that the free learning materials enhanced their learning experience. The high average ratings across all survey questions reflect students' appreciation for the financial relief, accessibility, and overall quality of the free materials. The implementation of no-cost learning materials has been a successful initiative, with significant benefits for students' learning and engagement.

2. GPA Comparison:

   o Spring 2023 (Pre-Implementation): 2.95

   o Spring 2024 (Pre-Implementation): 3.33

   o Fall 2024 (Post-Implementation): 2.65

The GPA decline in Fall 2024 suggests challenges during the transition to new course materials, likely due to students adjusting to new learning formats. The shift from the original learning platform, Folio, to a new course website required students to adapt to different layouts and navigation. This adjustment period may have impacted their ability to effectively use the materials. Instructors also needed time to adapt to the new platform, which could have affected the delivery of the course content.

3. DFW Rates:

   o Spring 2023 (Pre-Implementation): 0.0%

   o Spring 2024 (Pre-Implementation): 0.0%

   o Fall 2024 (Post-Implementation): 0.0%

The consistent 0.0% DFW rate across all semesters demonstrates strong course retention.

These results suggest that while the implementation of no-cost materials was well-received, ongoing adjustments are necessary to improve student performance outcomes.

4. Sustainability Plan

Describe how your project team or department will offer the materials in the course(s) in the future, including the maintenance and updating of course materials.

Our project team is committed to ensuring the sustainability and continuous improvement of course materials for MFGE/MENG 3333. Here are the key strategies we will implement:

The course materials will be reviewed and updated regularly to incorporate the latest advancements in materials processing and manufacturing technologies. We will continuously collect feedback from students through surveys and course evaluations. This feedback will be used to identify areas for improvement and make necessary adjustments to the materials.

5. Future Affordable Materials Plans

Describe any impacts or influences this project has had on your thinking about or selection of learning materials in this and other courses that you will teach in the future.

This project has reinforced the value of OER in enhancing student learning and reducing financial barriers. We now prioritize using OER and affordable materials in our courses, ensuring equitable access to education. Additionally, this project has polished our skills in selecting and developing OER materials, further supporting our commitment to providing high-quality, accessible resources for our students.

6. Future Scholarship Plans

Describe any planned or actual papers, presentations, publications, or other professional activities that you expect to produce that reflect your work on this project.

We plan to summarize the results from this textbook transformation project and share them through presentations at educational conferences, such as the SOLT Commons Conference, and/or journal publications.

7. Description of Photograph (optional)

This is where a team can list the names of the people shown in this separately uploaded photograph, along with their roles, if applicable.