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](https://survey.zohopublic.com/zs/xTCCvG) 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: 12/22/2025**

**Grant Round: Round 26**

**Grant Number: 730**

**Institution Name(s): Georgia Southern University**

**Project Lead: Meenalosini Vimal Cruz**

**Team Members (Name, Title, Department, Institutions if different, and email address for each):**

* **Dr. Meenalosini Vimal Cruz, Department of Information Technology,** [**mvimalcruz@georgiasouthern.edu**](mailto:mvimalcruz@georgiasouthern.edu)
* **Dr. Atef Mohamed,**  **Department of Information Technology,** [**amohamed@georgiasouthern.edu**](mailto:amohamed@georgiasouthern.edu)
* **Neda Aslsabbaghpourhokmaba, Department of Information Technology,**

[**naslsabbaghpourhokma@georgiasouthern.edu**](mailto:naslsabbaghpourhokma@georgiasouthern.edu)

**Course Name(s) and Course Numbers: IT 2430, IT 2431, ITW 2430, ITW 2431**

**Semester Project Began: Spring 2025**

**Final Semester of Implementation: Fall 2025**

**Total Number of Students Affected During Project: 172**

# Narrative

* 1. *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*
  1. *Describe lessons learned, including any things you would do differently next time.*
  2. *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*](https://creativecommons.org/share-your-work/)*—for most materials, this will be an Attribution 4.0 License (CC BY) as required in the Grants Request for Proposals.*

### **A. Key Outcomes of the Project**

**Summary of the Transformation Experience (Challenges and Accomplishments)**

This project focused on the development and implementation of Open Educational Resources (OER) for Python programming courses within the IT department as part of a broader pedagogical transformation initiative. The primary goal was not only to eliminate textbook and subscription costs but also to modernize the curriculum, enhance instructional effectiveness, and improve student learning outcomes—particularly for underrepresented student populations.

A major accomplishment of this project was the successful creation of comprehensive OER study materials spanning **15 modules across four courses**: IT 2430, IT 2431, ITW 2430, and ITW 2431. Each module was carefully designed to include conceptual explanations, Python syntax, real-time coding examples, practice exercises, and fully worked solutions. This ensured a holistic learning experience that supports multiple learning styles.

One of the most significant challenges encountered was the **normalization of instructional materials** developed by multiple faculty members, each using different teaching approaches, formats, and levels of depth. Harmonizing these diverse materials into a single, consistent, and high-quality standard required extensive coordination, iterative revisions, and consensus-building. This challenge was ultimately addressed successfully, resulting in a unified and standardized set of modules that meet departmental and pedagogical benchmarks.

**Transformative Impacts on Instruction**

The introduction of these OER materials transformed instructional practices by shifting the focus from static textbook-based teaching to **active, problem-solving–oriented instruction**. Faculty were able to integrate real-time coding demonstrations, hands-on exercises, and contextual examples directly into classroom and online instruction. The modular structure also enabled greater flexibility in lesson planning and allowed instructors to adapt content more easily to different delivery modes (in-person, hybrid, or online).

Additionally, the standardized materials established a **baseline for course consistency and quality**, ensuring that students across sections receive comparable learning experiences while still allowing instructors the freedom to incorporate their own teaching styles.

**Transformative Impacts on Students and Their Performance**

For students, the project had a meaningful impact on accessibility, engagement, and learning outcomes. The elimination of textbook and subscription costs reduced financial barriers, which is particularly impactful for underrepresented and economically disadvantaged students. The 360-degree learning approach—combining theory, practice, and problem-solving—helped students build stronger foundational skills and increased confidence in programming.

Students benefited from immediate access to structured, clearly explained materials that supported independent learning and revision. Early observations indicate improved engagement, better preparedness for assignments, and stronger performance in coding-based assessments.

### **B. Lessons Learned and Future Improvements**

One key lesson learned is the importance of **early coordination and shared instructional standards** when multiple faculty members contribute to OER development. Establishing common templates and pedagogical guidelines at the outset would streamline the normalization process and reduce revision cycles.

Another lesson is the value of incorporating **continuous evaluation mechanisms** alongside content development. In future iterations, formative assessment data and student feedback will be integrated earlier to further refine the materials.

Moving forward, an important enhancement planned for the next phase is the development of an **automated plagiarism detection and academic integrity tool** tailored for programming assignments. This tool will support one-to-one code comparisons, generate similarity indices, and provide detailed integrity analyses, strengthening both assessment quality and academic honesty.

### **C. Materials Created and Plans for Public Sharing**

As part of this project, a complete set of OER study materials was created for 15 modules across four Python-related IT courses. The materials have saved in Google drive and access is shared to the faculty. These materials include lecture notes, coding examples, exercises, and solutions, all designed for reuse and adaptation.

The materials will be made publicly available through a dedicated website to ensure easy access for both faculty and students. This open dissemination will contribute to the growing repository of OER resources, benefiting institutions across Georgia, the nation, and beyond.

All materials developed under this project will be shared under the **Creative Commons Attribution 4.0 International License (CC BY 4.0)**, in compliance with the Grants Request for Proposals. This license allows others to use, adapt, and redistribute the materials with appropriate attribution, supporting broader educational equity and collaboration.

Quotes

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

* *They provided different materials according to whatever that applies for the students*

*Lab activities, Homework assignments, and reading Assignments*

* *Having multiple references and resources provided offered the best chance at learning the material. It was good to know exactly what we were learning, and the various different ways it could be applied, all while encouraging experimentation and problem-solving skills. The content was mostly well organized and there was a plethora of information provided that didn't leave me feeling as if I had to teach myself everything. I didn't feel 'alone' in learning the information!*
* *Reading materials, lectures, papers, demonstrations, online activities, independent or group work, quizzes, and exams.*

# Quantitative and Qualitative Measures

## 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: 172

* Positive: \_\_90\_\_\_\_\_ % of \_\_\_\_\_\_\_\_ number of respondents
* Neutral: \_5\_\_\_\_\_\_ % of \_\_\_\_\_\_\_\_ number of respondents
* Negative: \_\_5\_\_\_\_\_ % 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)**
* \_\_\_ 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.*

\_\_\_\_\_\_\_% of students, out of a total \_\_\_\_\_\_\_ 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)
* \_\_\_ **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)

## 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.]*

*The data on the supporting impact provided regarding the course textbook transformation and OER implementation in the Python course consist of both quantitative measurements of student success and qualitative evidence of student experience, which are provided in the two attached graphs and the section reports. Quantitatively, in the sections that were fully reported, the transformation was serving 172 students with a general DFW rate of approximately 34.3% and completion rate of approximately 67.4% who have completed the course; these numbers are shown in the Impact Metrics of Python Course graph. The comparison of the pre and after transformation DFW was reported as directional change and not numerical delta. There were mixed results in sections, with the majority of the sections reporting that DFW was not any different than it used to be in prior semesters, and one section had higher results than those of the past semesters. These results are condensed to the pre/ post DFW comparison graph shown above in which the results are categorized as, same or lower than previous, versus higher than previous.*

*In qualitative analysis, feedback on course evaluation and narrative reflections indicate that students tended to have a positive experience with the materials that were transformed, and instructors remarked that the materials made accessibility and flexibility and increased support of practice-based learning possible through the use of examples and resources. Concrete areas of improvement were also identified in student feedback and developed during and after the implementation process. Some possible co-factors which could have affected results are that there were differences in cohort preparedness, pacing and modality and structure of assessment or assignment in sections*.

A graph of a course

AI-generated content may be incorrect.

A blue rectangular object with black text

AI-generated content may be incorrect.

# 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 has shared the course materials through a centralized Google Drive folder accessible to all faculty members who will be teaching this course. Moving forward, we plan to develop an open-access website where these materials will be publicly available for broader use. The department will maintain the repository collaboratively, with faculty reviewing content each semester and updating resources as needed to reflect instructional feedback, new research, and curriculum changes. This approach ensures that the materials remain current, sustainable, and easily accessible for both instructors and students.*

# 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.*

*Working on this project has encouraged me to be more intentional about selecting learning materials that are accessible, adaptable, and reusable across courses. As I prepare to publish both the Introduction to Web Design materials and the Python content on an open-access website, I am increasingly focused on choosing resources that support openness, transparency, and collaboration. This experience has reinforced the value of materials that can be continuously refined, shared across disciplines, and tailored to diverse student needs, and it will guide my decisions in developing and curating content for future courses.*

# 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.*

As an extension of this project, I am developing a plagiarism-detection tool capable of analyzing student submissions — including programming assignments — through one-to-one comparisons, similarity indexing, and detailed integrity reporting. We plan to disseminate the outcomes of this work through peer-reviewed conference presentations and journal publications, with submissions anticipated for Summer 2025 or Fall 2025. These scholarly activities will highlight both the development process and the impact of the tool on academic integrity and instructional practice.

# 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.*