**Affordable Learning Georgia Affordable Materials Grants  
Continuous Improvement Grants Final Report**

*(or Mini-Grants, for R17 and earlier)*

# General Information

Date: 08/11/2025

Grant Round: 25

Grant Number: M270

Institution Name(s): Kennesaw State University

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

Project Lead: Zhigang Li

Course Name(s) and Course Numbers:

* IT4713 Business Intelligence Systems
* IT4833 Wireless Security
* IT4853 Computer Forensics
* IT4793 Applied Data Driven Solutions

Final Semester of Project: Spring 2025

***If applicable to your project:***

Average Number of Students Per Course Section: 26

Number of Course Sections Affected by Implementation of Revised Resources: 8

Total Number of Students Affected by Implementation of Revised Resources: 204

# Project Narrative

*Describe the course of your revision or ancillary creation project, including*

* *A summary of your project’s purpose, plan, and timeline.*
* *The original works which were revised or added to, with links. For example, if you revised an open textbook, give the title, author, and link.*
* *A narrative description of how the project’s plan was carried out.*
* *Lessons learned, including anything you would do differently next time.*

*Summary of Project’s Purpose and Plan*

The general purpose of the project is to update the existing OER materials in the following courses to accommodate the latest changes in technologies and subject areas, thereby improving teaching effectiveness and the student learning experience. This may include, but is not limited to:

* Develop new OER materials or update existing materials for courses to be part of the BSIT Z Degree
* Ensure all developed OER materials are compliant with accessibility requirements.
* Develop new ancillary material, such as assignments and lab materials.
* Ensure all course materials, including lectures, slides, and resources, comply with the specific accessibility requirements defined by ALG.

General Timeline

* Complete accessibility training and review of existing OER material – May 2024
* Complete the development of accessibility compliant OER learning materials – December 2024
* Complete course offerings with updated OER material –May 2025
* Publish the updated OER material in a public website and create a course package that can be imported into D2L – May 2025

How the Project was Carried Out and Lessons Learned

IT4713 Business Intelligence Systems

For study guides (reading list), all readings were reviewed to make sure URLs still work. For outdated or expired content, new resources were added and replaced the old ones. If better readings are identified, then they replace the older ones as well. For lecture slides, the content was made consistent with the most recent materials and optimized for presentation. All labs were renumbered and adjusted based on prior teaching experiences. Particularly, lab 6 was added to conclude all labs, where students went through the whole BI process.

IT4833 Wireless Security

The first step was to review each module. All materials were examined to identify areas where the information was not current or clear for online learners, including items related to ADA compliance. Outdated content was removed, and more current information was added. Additional slide material was incorporated, including matrix comparisons of wireless technologies and security applications. Images were also added to support definitions. For example, the Cellular learning module was updated to include 5G content, such as slides on wireless 5G architecture and a matrix comparing cellular network generations (3G, 4G, 5G, etc.). Drawing on over 22 years of experience in telecommunications and more than a decade in wireless communications, practical application examples were integrated into the slide material.

It is well known that technology evolves rapidly, particularly in the field of security. The learning modules may be reorganized differently in a future round of grants. In this round, the primary focus was on ensuring content currency and enhancing online learning capabilities, including improvements related to ADA compliance.

IT4853 Computer Forensics

The plan was to transition all labs from virtual machines to Netlabs. The corresponding material was created or updated to sync with Netlabs. All current Netlabs were updated to match the Netlabs update performed by the CCSE Lab Manager. By performing all labs on the Netlabs instead of virtual machines, the availability and reliability of the labs were increased. Students were also provided with step-by-step guided instructions for completing all hands-on labs.

Transitioning labs to Netlabs improved reliability, streamlined updates, and enhanced student success through clear, step-by-step guidance. The process underscored the importance of careful planning, coordinated updates, and standardized formats for a consistent learning experience.

IT4793 Applied Data Driven Solutions

The first step in the revision process was a comprehensive review of each module. All course materials were carefully examined to identify sections where the information was outdated, unclear, or not fully accessible for online learners, including elements related to ADA compliance.

Since this was a group project–based course, it was important to ensure that all instructions, resources, and expectations were both current and clear. Outdated content was removed and replaced with more relevant, up-to-date information aligned with current industry practices and academic standards.

Each module was further enriched with supplemental content directly related to its specific topic. These enhancements were designed to provide students with a clearer understanding of the learning objectives, deliverables, and tasks associated with each module.

These steps resulted in a more structured and transparent learning experience, ensuring students had a clear vision of what was expected and the resources needed to successfully complete their group projects.

The key takeaway was the positive impact of aligning content updates with industry practices. By replacing outdated materials with current examples, tools, and methodologies, students were able to better relate their learning to real-world applications. This not only improved engagement but also enhanced the practical value of the course.

Adding supplemental, topic-specific content for each module proved highly beneficial, as it gave students a clearer roadmap of expectations and deliverables. This clarity improved team coordination and enabled students to manage their time and resources more effectively during the group project phase.

# Materials Description

*Describe all the materials you have created or revised as part of this project. These descriptions may be used in the* [OpenALG](https://alg.manifoldapp.org/) *repository description field. 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.*

The materials developed or revised in this project primarily come in three categories: study guides, lecture materials, lab instructions. Depending on the courses and subject areas, they may come in a variety of formats, including but not limited to HTML, docx, pptx, and PDF.

# Materials Links

*If you are hosting your materials in places other than OpenALG, please provide these links in this section. Otherwise, leave blank. Note: we cannot access D2L or Canvas links.*

* IT4713 Business Intelligence Systems

<http://idi.kennesaw.edu/it4713/>

* IT4833 Wireless Security  
  <https://facultyweb.kennesaw.edu/dmorro21/docs/IT%204833%20Wireless%20Security%202025.zip>
* IT4853 Computer Forensics

<https://ksuweb.kennesaw.edu/~zli8/it4853/Table%20of%20Contents.html>

* IT4793 Applied Data Driven Solutions

<https://facultyweb.kennesaw.edu/spouriye/alg25/D2LExport_2775138_IT4793_swu10_202581015.zip>

# Future 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.*
* *Describe any plans to revise or add to these materials in the future.*

Future plans for the continuous improvement of the courses are as follows

IT4713 Business Intelligence Systems

Explore the use of cloud data warehouse systems so students do not need to install a heavy DBMS on their own computer.

IT4833 Wireless Security  
Restructure the learning modules based on the latest development and advancement in wireless security.

IT4853 Computer Forensics

Include ethical considerations, reporting, and case studies.

IT4793 Applied Data Driven Solutions

Separate the learning modules from the project management modules. The Learning Modules would focus specifically on advanced data analytics solutions, allowing students to first build a strong theoretical and technical foundation. This phase would include in-depth coverage of advanced analytics concepts, tools, and methodologies, supported by real-world examples and case studies. The goal would be to ensure that students gain a deep understanding of both the underlying theory and the practical applications before they begin their project work.

The Project Modules would then concentrate on a collaborative group project. This phase would provide students with an opportunity to apply the skills and knowledge acquired during the learning phase to solve a complex, real-world problem. Students would work in teams to design, develop, and present a complete data-driven solution, simulating a professional analytics environment.

By structuring the course in this way, students will benefit from a clear progression: first mastering advanced analytical concepts in a structured learning context, and then applying those concepts in a practical, project-based setting. This approach not only enhances comprehension but also reinforces learning through hands-on experience, ultimately improving both student engagement and learning outcomes.