

Affordable Learning Georgia Affordable Materials Grants Continuous Improvement Grants Final Report

(or Mini-Grants, for R17 and earlier)

General Information

Date: May 20 2025

Grant Round: 25

Grant Number: M290

Institution Name(s): Georgia Gwinnett College

Team Members (Name, Title, Department, Institutions if different, and email address for each): Yaquan Xu, Associate Professor, ITEC, yxu@ggc.edu

Project Lead: Yi Ding

Course Name(s) and Course Numbers: Introduction to Information Systems, ITEC 2201

Final Semester of Project: Spring 2025

If applicable to your project:

Average Number of Students Per Course Section: 24

Number of Course Sections Affected by Implementation of Revised Resources: 4

Total Number of Students Affected by Implementation of Revised Resources: 96

1. 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.*

Project Purpose, Plan, and Timeline

The purpose of this project was to enhance student engagement and academic success in ITEC 2201: *Introduction to Information Systems* by integrating real-life teaching experiences using enterprise-level technologies. The project aimed to improve retention, performance, and interest in IT-related programs by embedding hands-on exercises that reflect real-world business operations and systems.

The plan involved revising all eight chapters of the course to include practical exercises, videos, and instructional materials. The timeline was as follows:

- **Spring 2024:** Finalized the outline of the revision work.
- **Summer 2024:** Revised Chapters 1–4.
- **Fall 2024:** Revised Chapters 5–8, developed assessment tools, and sought IRB approval.
- **Spring 2025:** Conducted assessments and compiled findings into this final report.

Original Works Revised

The course revisions were based on the following open and freely available resources:

- ITEC 2201 Course Materials on GGC Commons
- OpenSAP Learning Platform
- SAP Business Technology Platform
- ERPSim Simulation Platform

Narrative Description of Project Execution

Chapter 1: Introduction to Information Systems

Students registered for a free SAP trial account and explored the system interface. They examined account settings, company codes, and data elements to distinguish between data and information. The exercise concluded with a summary of SAP's role in enterprise systems. This activity helped students connect theoretical concepts with real-world applications early in the course.

Chapter 2: Organizational Strategy, Competitive Advantage, and IS

Two real-life exercises were introduced:

1. **Accounts Receivable Simulation:** Students used the “Post Incoming Payments” app to simulate the role of an Accounts Receivable clerk. They learned about journal entries, G/L accounts, and financial documentation.
2. **Sales Order Management Guided Tour:** Students followed a guided tour to investigate a blocked sales order and analyze the sales process using Porter's Value Chain model. This helped them understand how IS supports strategic business functions.

Chapter 3: IT Infrastructure

Students gained hands-on experience with **Platform as a Service (PaaS)** by creating a tenant environment in **SAP Business Technology Platform (BTP)** and launching **SAP Build**. This

exercise demonstrated how cloud infrastructure supports scalable business applications. Students explored concepts such as:

- Cloud computing models
- Networking and infrastructure
- Simplified security management (e.g., role-based access control)

Some students encountered technical issues such as delayed activation emails or platform glitches, which highlighted the need for robust support and flexible instructional pacing.

Chapter 4: Information Systems Security

The original plan was to have students run their own blockchain environment using SAP BTP. However, SAP discontinued support for its blockchain service during the project timeline. An alternative exercise was identified through the SAP Community, but it proved too complex and time-consuming for the course schedule. This component was deferred for future development, pending more stable and accessible support from SAP.

Chapter 5: System Development and Project Management

Students used **SAP Build** to develop a mobile app that simulates a barcode scanner used in warehouse operations. The app retrieved product information via an external API (Open Food Facts) and displayed it in real time. This exercise introduced students to:

- Low-code development
- REST API integration
- Real-world logistics and inventory management

A key challenge was the rapid evolution of SAP Build, which caused some instructional materials to become outdated mid-semester. This required real-time adjustments and emphasized the need for version-controlled teaching resources.

Chapters 6 & 7: Data and Knowledge Management & Data Analytics

Students worked with a fictional business scenario—**Lucky Tire**—to simulate the process of building a data warehouse and performing business intelligence analysis using **SAP Datasphere** and **SAP Analytics Cloud**. They:

- Imported sales and location data
- Built dimension and fact views
- Created analytical models
- Developed dashboards with bar charts, pie charts, geomaps, and time series predictions

This exercise helped students understand the full data pipeline from ingestion to visualization and decision-making.

Chapter 8: Enterprise Systems

Students explored the **procurement business process** using SAP's Academic Training Environment, simulating operations for a fictional company, **Global Bike**. This gave students a realistic view of how enterprise systems support end-to-end business processes. Due to time constraints, we were unable to test this exercise on a free trial account with a different fictional business. This will be a focus for future development to ensure broader accessibility and scalability.

2. Materials Description

Describe all the materials you have created or revised as part of this project. These descriptions may be used in the [OpenALG](#) repository description field. 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.

As part of this Affordable Learning Georgia Continuous Improvement Grant, we created and revised a comprehensive set of instructional materials for the course **ITEC 2201: Introduction to Information Systems**. These materials were designed to integrate real-life learning experiences using SAP technologies and to align with the course's eight core chapters. All materials will be shared under the **Creative Commons Attribution 4.0 License (CC BY 4.0)**.

Created and Revised Materials

1. Real-Life Learning Exercises

We developed a series of hands-on exercises that immerse students in real-world enterprise system environments. These include:

- **SAP Trial Account Navigation (Chapter 1)**: Students explore system settings and distinguish between data and information.
- **Accounts Receivable Simulation & Sales Order Guided Tour (Chapter 2)**: Students simulate business roles and analyze value chain processes.
- **SAP BTP Environment Setup & SAP Build (Chapter 3)**: Students experience cloud infrastructure and PaaS concepts.
- **SAP Build App Development (Chapter 5)**: Students create a barcode scanner app using low-code tools and REST APIs.

- **SAP Datasphere & Analytics Cloud Project (Chapters 6 & 7):** Students build a data warehouse and develop dashboards for business intelligence.
- **SAP Procurement Process Walkthrough (Chapter 8):** Students simulate procurement operations using SAP's academic training environment.

2. Instructional Support Materials

- **Step-by-step guides** for SAP account setup, app development, and data modeling.
- **Annotated screenshots** and walkthroughs to support student navigation of evolving SAP interfaces.
- **Reference links** to SAP tutorials, videos, and community resources.
- **Assessment questions** embedded in each exercise to reinforce learning outcomes.

3. Accessibility and Hosting

- All materials were reviewed for accessibility using built-in tools and will be further evaluated with support from institutional accessibility staff.
- Materials will be hosted on:
 - GGC Commons

3. 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.

Real Life Learning Exercises are hosted at GGC Commons
<https://commons.ggc.edu/yding1/connect/>

4. 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.*

We anticipate several professional activities that will emerge from this project:

- **Conference Presentations:** We plan to present our work at regional and national conferences focused on teaching and learning with technology, such as the *USG Teaching and Learning Conference*, *EDUCAUSE*, or *SAP Academic Community Conference*. These presentations will highlight our integration of real-life enterprise system experiences into an undergraduate information systems course.

- **Scholarly Publications:** We aim to submit a paper to journals such as the *Journal of Information Systems Education (JISE)* or *Information Systems Education Journal (ISEDJ)*. The paper will focus on the pedagogical impact of using SAP tools to teach core IS concepts and the challenges of aligning evolving enterprise platforms with curriculum design.
- **Workshops and Faculty Development:** We plan to host internal workshops at Georgia Gwinnett College to share our approach and materials with colleagues interested in adopting similar experiential learning strategies in their courses.

2. Future Revisions and Additions

We have identified several areas for future development and improvement:

- **Chapter 4 (IS Security):** We plan to revisit the blockchain exercise once SAP provides a more stable and accessible blockchain service or an alternative security-focused hands-on tool. This will allow us to fully implement the originally envisioned real-life learning experience.
- **Chapter 8 (Enterprise Systems):** We intend to adapt the procurement process walkthrough for use with a free SAP trial account, using a different fictional business scenario. This will make the exercise more scalable and accessible for broader adoption.
- **Version-Controlled Instructional Materials:** Given the rapid evolution of SAP platforms like SAP Build, we plan to create version-controlled guides and update them regularly to ensure alignment with the latest interface and functionality.
- **Expanded Assessment Tools:** We will refine our assessment instruments to better measure the impact of real-life learning activities on student outcomes, including engagement, comprehension, and retention.
- **Open Repository Enhancements:** We will continue to update and expand the materials hosted on GGC Commons to include additional tutorials, troubleshooting guides, and student feedback summaries.