

Affordable Learning Georgia Affordable Materials Grants
Continuous Improvement Grants Final Report

(or Mini-Grants, for R17 and earlier)

General Information

Date: 5/16/2021

Grant Round:

Grant Number: M119

Institution Name(s): Kennesaw State University

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

Meng Han, Assistant Professor, mhan9@kennesaw.edu

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Project Lead: Meng Han

Course Name(s) and Course Numbers: IT 4323

Final Semester of Project: Spring 2021

If applicable to your project:

Average Number of Students Per Course Section: 61

Number of Course Sections Affected by Implementation of Revised Resources: 2

Total Number of Students Affected by Implementation of Revised Resources: 122

1. Project Narrative

In this project, we propose to take a sustained effort to improve the data communication and networking courses using no-cost-to-students learning material to adapt to the up-to-date content. This project not only aims to keep the low financial burden imposed by high cost of textbooks, but also strives to develop free open-access, and updated learning materials that offer equivalent or better educational effectiveness than previous offering.

Timeline:

- 5/01/2020
 - o Complete baseline gathering of statistics
- 7/31/2020
 - o Complete course level materials redesign, which includes syllabus and schedule for both courses.
 - o Complete project progress report for IT 4323.
- 12/01/2021
 - o Complete the development of no-cost materials include all reading, lecture notes, video clips, exercises, labs, and assignments materials for IT 4323.
- 5/05/2021
 - o Complete the course offering for IT 4323.
 - o Complete the survey data collection for the offered courses.
 - o Complete student evaluation for all offered courses.
- 5/15/2021
 - o Complete assessment data collection and analysis for the whole project.
 - o Deliver the final status report.
 - o Complete the final report.

The original work is located at:

<http://ksuweb.kennesaw.edu/~mhan9/ALG/it4323/4323.html>

Our transformation effort is a great success. We have improved and implemented no-cost-to-student learning material for the proposed courses. The URLs of the learning material is located at:

<http://ksuweb.kennesaw.edu/~mhan9/ALG/it4323/index.html>

In our updated materials, we redesign the whole framework of the course not only includes the objects, outcome, overall measurement but also the detailed component in each of the module. Compared to the existed version, we included the latest change in the field about the communication and networking.

We collected the student's opinion as regular project to further study the performance of the project:

Table 1. Students' Opinion on No-Cost Learning Material

Statement	IT 4323
In general, the learning modules were organized	3.27
The content, links and other leaning module materials were sufficient to help me learn.	3.19
I liked not having to buy a textbook and instead used the materials that were provided and free.	3.25
I prefer using selected open source/free learning materials rather than a paid textbook for this course.	3.16
Overall, compared to a potential paid textbook, open resource learning materials provided the necessary assistance to learn the material.	3.59
I would take another course that uses open/free learning materials.	3.24
I would have preferred having a textbook for the course	3.12

Overall, the student presents a better result on our course deliveries based on the feedback we collected. Compared to previous offerings, the improved version gets overall higher satisfaction from students. This might because our improved materials, but also could because of more non-materials courses offering in our department to allow students adapted their study into the new manner.

2. Materials Description

We reorganized the whole course and the content for data communication and networking by including the latest progress of the networking knowledge and the more interactive learning style compared to previous "down to top" manner. The network is more presented in as a whole manner but not very layer specific in this updated version.

3. Materials Links

<http://ksuweb.kennesaw.edu/~mhan9/ALG/it4323/index.html>

4. Future Plans

The IT department at KSU implemented a course architect system for all courses. A course architect updates course content based on research, publications and feedback from students and alumni. Each instructor of record is a course architect for the corresponding courses. A course architect develops and maintains the course materials and teaching plans. He/she also teaches the course at least once a year to make sure all resources are valid and make necessary changes. This makes sure all no-cost materials and resources are highly sustainable in the future offerings of this course.

Information technology is a dynamic field where existing technology frequently get updated and new technology constantly comes out. Due to this reason, the no-cost learning material model naturally fits better for IT curriculum than the traditional textbook model. The faculty in the IT department already completed several individual and transform-at-scale grants. The positive feedback from the students and our own development and implementation process inspire more faculty in the IT to get involved with developing no cost learning material for their courses. Our future plan is to make the whole MSIT program textbook free.

A PI of this grant, Dr. Han submitted a paper on sourcing cost-free and open educational resources in SIGITE 2021, one of the premier conferences in IT education.