**Affordable Learning Georgia Textbook Transformation Grants**

**Final Report for Mini-Grants**

# General Information

Date:5/23/2020

Grant Round:15

Grant Number:M097

Institution Name(s): Kennesaw State University

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

Lei Li, Professor, MSIT Coordinator & Asst. Dept. Chair, Department of Information Technology, [lli13@kennesaw.edu](mailto:lli13@kennesaw.edu)

Meng Han, Assistant Professor, Department of Information Technology, [mhan9@kennesaw.edu](mailto:mhan9@kennesaw.edu)

Project Lead: Lei Li

Course Name(s) and Course Numbers: IT 6833 Wireless Security

Final Semester of Project: Summer 2020

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

Average Number of Students Per Course Section: 14

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

Total Number of Students Affected by Implementation of Revised Resources: 27

# Project Narrative

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

* *A summary of you*
* *r project’s purpose, plan, and timeline.*

IT 6833 Wireless Security was initially developed using the no-cost-learning material on 2017 as the part of ALG grant round 8 proposal #302. We have been conducting regular maintenance on the no-cost-to-student learning material in IT 6833 for the last two years such as fixing the broken web links. Given the advances in wireless network such as 5G cellular network and Wifi 6 (802.11ax), the content of IT 5433 should be systematically updated. We proposed to achieve following objectives in this project.

1. Update the contents of the learning material in the current learning modules. Given the broken web link issues we had in the past, we plan to cache the selected web content provide it to the students locally whenever is possible.
2. Update the quizzes, assignments, projects, slides, and the test bank based on changes made in the learning material. In addition, two hands-on labs are out of dates and needs to be replaced.
3. Modify existing modules to include 5G cellular network and security and Wifi 6 (802.11ax) its security implications.

The initial project timeline with milestones were listed as follows.

* Milestone 1 – complete the no-cost-to-student learning material update of IT 6833. Milestone date: 5/5/2020. Person responsible for the milestone: Dr. Lei Li.
* Milestone 2 – complete project progress report. Milestone date: 5/5/2020 or date specified by ALG. Person responsible for the milestone: Dr. Lei Li.
* Milestone 3 – teach the course using the newly developed learning material and collect student feedback. Milestone date: 7/15/2020. Person responsible for the milestone: Dr. Meng Han.
* Milestone 4 – complete project final report. Milestone date: 7/30/2020 or date specified by ALG. Person responsible for the milestone: Dr. Lei Li.
* *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.*

[*http://ksuweb.kennesaw.edu/~lli13/IT6833.html*](http://ksuweb.kennesaw.edu/~lli13/IT6833.html)

* *A narrative description of how the project’s plan was carried out.*

This project is carried out a little earlier than originally plan. The course material update was on January 1, 2020. The new no-cost learning material was taught in spring 2020. And student survey of learning material was conduct at the end of spring 2020.

* *Lessons learned, including anything you would do differently next time.*

We survey students at the end of the spring 2021 to collect their feedback on no-cost learning material. The students are generally hold a positive attitude towards the no-ocst learning material.

|  |  |
| --- | --- |
| **Statement** | **Value** |
| In general, the learning modules were organized | 3.42 |
| The content, links and other leaning module materials were sufficient to help me learn. | 3.29 |
| I liked not having to buy a textbook and instead used the materials that were provided and free. | 3.19 |
| I prefer using selected open source/free learning materials rather than a paid textbook for this course. | 3.43 |
| Overall, compared to a potential paid textbook, open resource learning materials provided the necessary assistance to learn the material. | 3.25 |
| I would take another course that uses open/free learning materials. | 3.33 |

Note: 1) the numbers in the table represent survey participants’ opinion on the statements: 5 - Strongly agree, 4-Agree,3-Niether agree nor disagree, 2- Disagree, 1-Strongly disagree

**Quotes**

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

***“****this is my first non-textbook course and the experience is great since the cost is reduced for my financial burden****”***

*“some of the content is complicated, thanks a lot for the explanation video, which helped a lot! I also like the examples about our cell phone security”.*

*“the faculty created materials helped me easier adapt to this course even without too much experience in this area, the non-textbook itself is also a great option for us to save the cost”*

**Lessons Learned**

|  |  |
| --- | --- |
| **What worked well** | **What could have done differently** |
| The videos associated with the course are well organized and developed. Students provide very good feedback on these videos. | The quizzes are based on the created materials, but the questions also need further polish to fit the background of the students. |
| Non-cost textbook reduces the burden of the students, and some of the students benefit from this option to reduce their cost. At the same time, student high valued our created materials in the context. | Updated content and materials also brought some challenges to the students, some of the concepts may need pay further attention to improve the theoretical explanations and provide more examples. |

# Materials Description

*Describe all the materials you have created or revised as part of this project. These descriptions may be used in the* [*GALILEO Open Learning Materials*](https://oer.galileo.usg.edu/) *repository in the official description field.*

In this project, we updated all the materials in this course. Cybersecurity has become an emerging topic of information technology domain. The wireless security as a major part of cybersecurity concentration in our program has a lot of updates due to the development of new wireless environment, 5G, autonomous vehicle, and many emerging applications. We revise the previous design of the course, includes additional examples, video explanation links, additional further references, and advanced topic discussions in the updated version. Besides, we also update the quizzes, test, exam and the labs to match the latest progress in this domain.

# Materials Links

*If you are hosting your materials in places other than GALILEO Open Learning Materials, please provide these links in this section. Otherwise, leave blank.*

<https://ksuweb.kennesaw.edu/~lli13/6833/IT6833.html>

# 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.*

We are planning to submit one security education research paper based on the practice of this course development to SIGITE 2021 next year to report the methodology we applied for the content development. Due to COVID-19, there is also an emerging demand on online education, we will further research the usability and our experience along with the education theory to improve the adaptiveness of our developed course in the online setting.

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

Security has become a more and more important topic in the current information technology setting. We will further polish our content and materials along with the new development of software and hardware in the real-life and maintain our content and course materials updated to new challenges in this area.