

## Table of Contents

---

|                             |    |
|-----------------------------|----|
| Ding, Yi - #2865 - 406..... | 1  |
| Letter of Support.....      | 10 |
| Proposal Narrative.....     | 11 |

# Application Summary

## Competition Details

---

|                             |  |
|-----------------------------|--|
| <b>Competition Title:</b>   | Textbook Transformation Grants, Round Thirteen (Spring 2019-Spring 2020) |
| <b>Category:</b>            | University System of Georgia   |
| <b>Award Cycle:</b>         | Round 13   |
| <b>Submission Deadline:</b> | 01/14/2019 at 11:59 PM   |

## Application Information

---

|                           |                       |
|---------------------------|-----------------------|
| <b>Submitted By:</b>      | Cathy Hakes           |
| <b>Application ID:</b>    | 2865                  |
| <b>Application Title:</b> | 406                   |
| <b>Date Submitted:</b>    | 01/15/2019 at 7:31 AM |

## Personal Details

---

|                                   |   |
|-----------------------------------|---|
| <b>Institution Name(s):</b>       | Georgia Gwinnett College                                      |
| <b>Applicant First Name:</b>      | Yi  |
| <b>Applicant Last Name:</b>       | Ding  |
| <b>Applicant Email Address:</b>   | yding1@ggc.edu  |
| <b>Applicant Phone Number:</b>    | 678-464-6931  |
| <b>Primary Appointment Title:</b> | Associate Professor of IT                                     |
| <b>Submitter First Name:</b>      | Cathy   |
| <b>Submitter Last Name:</b>       | Hakes   |
| <b>Submitter Email Address:</b>   | chakes@ggc.edu  |
| <b>Submitter Phone Number:</b>    | 678-407-5875  |
| <b>Submitter Title:</b>           | Executive Director, Office of Research and Sponsored Programs |

## Application Details

---

### Proposal Title

406

### Final Semester of Project

Spring 2020

### Requested Amount of Funding

\$10,800

### Type of Grant

No-or-Low-Cost-to-Students Learning Materials

**Course Title(s)**

Introduction to Information Systems; Management Information Systems

**Course Number(s)**

ITEC 2201, BUSA 3100

**Team Member 1 Name**

Yi Ding

**Team Member 1 Email**

yding1@ggc.edu

**Team Member 2 Name**

Yaquan Xu

**Team Member 2 Email**

yxu@ggc.edu

**Team Member 3 Name**

Madhurshri Banerjee

**Team Member 3 Email**

mbanerje@ggc.edu

**Team Member 4 Name**

**Team Member 4 Email**

**Additional Team Members (Name and email address for each)**

N/A

**Sponsor Name**

Thomas Mundie

**Sponsor Title**

Dean

**Sponsor Department**

School of Science & Technology

**Original Required Commercial Materials (title, author, price)**

Business Driven Technology by Paige Baltzan (Required for ITEC 2201), \$178.55

Principles of Information Systems by Stair (Required for BUSA 3100), \$250

**Average Number of Students per Course Section Affected by Project in One Academic Year**

20

**Average Number of Sections Affected by Project in One Academic Year**

18

**Total Number of Students Affected by Project in One Academic Year**

360

**Average Number of Students Affected per Summer Semester**

40

**Average Number of Students Affected per Fall Semester**

160

**Average Number of Students Affected per Spring Semester**

160

**Original Total Cost per Student**

\$178.55 for ITEC 2201 student; \$250.00 for BUSA 3100 student, Total \$428.55

**Post-Project Cost per Student**

\$0 for ITECH 2201 student; \$120.00 for BUSA 3100 student, Total \$120.00

**Post-Project Savings per Student**

Saving: \$178.55 for ITEC 2201 student, Saving: \$130 for BUSA 3100 student, Total: \$308.55

**Projected Total Annual Student Savings per Academic Year**

\$53,565 for ITEC 2201 student; \$7,800 for BUSA 3100 student, Total \$61,365

**Using OpenStax Textbook?**

No

**Project Goals**

The goals of the project are to:

A. Improve the textbook affordability for ITEC 2201 and BUSA 3100 by replacing the current expensive traditional textbooks used in those courses with low to zero-cost customized learning materials.

B. Improve student retention, performance, and preparation for the next ITEC level by providing customized learning material to meet student learning needs.

C. Improve learning engagement by training students in the usage of the library system such as MERLOT, Galileo, USG libraries, and the Lynda.com.

**Statement of Transformation**

## Overview of the Transformation

Since the 1970s, textbooks have progressively increased in cost. In fact, textbook prices have risen faster than costs in other sectors. For instance, textbook cost since the 1970s has increased 812% compared to medical services' increase of 575%, new home costs by 325%, and consumer price index by 250% (Zook, 2017). When comparing majors with the most expensive books, an article by Robert Tolmach (2016) listed Computer Science major as number 11 in the list out of 31 majors, while Business (Economics) is number 1. The sad news is that editions of computer textbooks can go out of date quite quickly, and books in these fields (science/social science books), which are usually most expensive new, "retain proportionally the least amount of their original price" according to a 2015 article by Kopf.

ITEC 2201, a required introductory level information system (IS) course for IT major students, has an expensive textbook that costs around \$178.55. BUSA 3100, an equivalent MIS course required for students in the School of Business, has a textbook that costs around \$250.00. Due to the high cost of the textbook materials, we have observed that students are having financial difficulties paying for textbooks materials and often delay their purchases of the materials until later in the semester, which can significantly affect the students progress in class. A 2017 survey conducted by Wakefield Research among "1000 students from four-year colleges" (McKenzie 2017) indicated that such delay of accessing the needed textbook materials severely hindered students' learning progress and performance in the class. In our case, about 30% to 40% of students received D, F, W was due to those students' delay in accessing the textbook materials. Our goal is to see a decrease from 30% to 40% of students receiving such grades, especially because ITEC 2201 is the sole prerequisite for upper-level courses such as Information Security, Introduction to Database, Introduction to Network, and System Analysis and Design. It is imperative that we, as instructors on record, remove all possible barriers to students' academic performance in order to ensure success in their IT career.

Another important reason for the need for the project is that 40% to 50% of chapter contents in a traditional textbook cannot be covered in class because they are either too much for students to learn in one semester, lack the depth that is needed to meet the course objectives, or irrelevant to the level of the courses that are taught. For example, in ITEC 2201, the textbook has gone through four rounds of revisions over the past five years. Still, 46% of the latest edition of the textbook contents are left unused for the course as of Spring 2019. The same case happens in BUSA 3100 as well. Among a total of 14 chapters, almost half of textbook contents are not covered by the end of a semester. For those chapters that are used in the course, there is often a lack of depth in coverage that is required and essential to prepare students for the upper level IT courses.

Overall, we need textbook and materials for our introduction to IS/MIS course that are customized, engaging, and inexpensive.

### Project's transformative impact on the course and department

Due to the availability of many free Introduction to IS/MIS learning resources, the investigators of this proposal feel those expensive traditional textbooks can be completely replaced by free online materials. Through the efforts of a team of committed experts, the existing required materials can be appropriately selected, organized, customized, and revised. The source of online materials will be chosen from MERLOT; Galileo; USG libraries; GGC's online subscriptions from an academic database such as ACM; IEEE; online education website such as Lynda.com; and digital libraries such as Books 24x7, to name a few. In addition, open source ERP software and freeware (some of those are free to our students due to the academic licenses offered by the vendors) will be used to support the students' hands-on and experiential-learning needs in those IS/MIS introduction courses. Ultimately, with the combination of those materials and software, we are confident that our project will help students get a much holistic learning experience.

The investigators of this proposal estimate that the transformation will affect over 300 students in ~15 sections of ITEC 2201 course and 60 students in 2 sections of BUSA 3100 courses by the end of the project. In addition, the team will make the revised textbook and accompanying materials available to 5 full-time and 1 part-time ITEC faculty, as well as USG faculty members who can access the transformed textbook through the ALG repository. Materials will also be made available to the faculty outside of USG through the GGC Wiki website. It is expected that the course materials provided by the team will be accessible by typing "ITEC 2201 or Introduction to Information System" through any internet search engine. The anticipated result is that students and faculty outside of GGC will be able to access such materials by typing these keywords in any search engine.

Students will not be required to purchase an expensive textbook; instead, they will be able to obtain high-quality reading and hands-on materials as well as applicable multimedia (video) learning contents to facilitate learning in ITEC 2201 at no cost to them. For BUSA 3100, after implementation of this project, we estimate a maximum \$120 fee could still remain for students to purchase a proprietary online Excel training software that is currently required in that specific course. Part of our plans will be to develop, evaluate, and disseminate the use of a free alternative training material/software to accompany the BUSA 3100 materials. We hope to submit a proposal for such a project

in ALG's next proposal round. The transformation will hopefully empower the participating faculty to create engaging, active learning activities that could lead to better problem-solving skills development, retention, and overall student success.

### **Project's transformative impact on the institution**

GGC as an open-access college that provides quality inexpensive higher education services to thousands of students and their families who cannot afford expensive tuition and fees. Offering free or reduced textbooks is critical to our students' success in light of the fact that 76% of our students receive some type of Financial Aid as of January 3, 2018, according to our financial aid office's report. However, the high textbook prices can still deter many students from accessing the quality education provided by GGC and achieving college success. This project removes students who want to major in IT completely from worries of paying the expensive textbook fee in order to take a crucial and mandatory IT course, ITEC 2201. It also minimizes the textbook financial burden for students who want to take BUSA 3100 for MIS major at the school of business. Finally, this project provides customized learning materials that not only meet the unique learning needs of our students but also help them better prepare for the upper level IT courses such as ITEC 3200 - Introduction to Database, ITEC 3350 - Digital Commerce, ITEC 3700 - Systems Analysis and Design.

### **Transformation Action Plan**

The course includes the following major topics:

Chapter 1 - Introduction to Information Systems

Chapter 2 - Organizational Strategy, Competitive Advantage, and Information Systems

Chapter 3 - Information Security

Chapter 4 - Data and Knowledge Management (Big Data)

Chapter 5 - Business Intelligence and Data Analytics

Chapter 6 - Networks. Wireless and Cloud Computing

Chapter 7 - E-Business and Digital-Commerce

Chapter 8 - Enterprise Resource Planning (ERP), CRM, and SCM

Chapter 9 - Software Development Methodology and Project Management

Chapter 10 - Ethics and Privacy

Additional readings and other material dealing with hands-on, problem-solving learning materials (e.g., SAP, Excel, and Access exercises, simulation games) will be integrated into the course in order to increase student learning effectiveness. An outline of the activities and expectations for the students will be included in the Syllabi for ITEC 2201 and BUSA 3100. Each investigator is given a number of appropriate introduction to IS topics to search over online learning sources (e.g., MERLOT, Galileo, USG libraries, GGC's online subscriptions) to identify, review, and select relevant learning materials. Then, all those selected materials will be compiled together and go through a preliminary evaluation process to ensure their appropriateness to the course to be taught. The evaluation result would help the next step of updating the current instructional design, curriculum alignment, accessibility setup, etc.

**Course and Syllabus Redesign Phase.** The team will compile sources of materials, which will include e-books from MERLOT, GGC e-book library, etc.; relevant IS training videos (e.g., Excel, MySQL video training courses) from Lynda.com, YouTube, etc. and IS research articles from ACM, IEEE and the training ERP software from SAP online academic center. The GGC library will be asked to assist in creating a page of links and files that will be made available to the public on the Library's publicly-available page on the GGC website.

The compiled materials (revised textbook and supplemental materials) will be piloted to 5 sections of ITEC 2201 to be taught by Drs. Yi Ding, Yaqua Xu, and Madhushri Banerjee in fall 2019. The revised textbook will be piloted in the remaining 10 ITEC 2201 sections, taught by all three team members, in spring and summer 2020.

### **Team members' roles**

Dr. Yi Ding will coordinate the project development activities. He will work with Drs. Madhushri Banerjee and Yaquan Xu to select the materials and in cooperating with other colleagues and the library in the development of activities and the implementation of the assessment plan.

All three personnel will act as subject matter experts and instructors of record. Topics taught in ITEC 2201 will be assigned to each member, and each will obtain open source, no-cost materials for the different topics. The assignments are:

- Dr. Yi Ding (ITEC 2201 course coordinator) will lead the development of Chapter 2, 3, 6, 10.
- Dr. Yaquan Xu (BUSA 3100 instructor) will lead the work on Chapter 5, 7 and 8.
- Dr. Madhushri Banerjee will lead the work on Chapter 4 and 9.
- Chapter 1 will require the collaborative contributions of all members of the team. The team members are acquainted with the materials in all of these areas and will have the opportunity to substantively contribute to each subject matter. Materials will be collected from online sources discussed in previous sections.

### **Plan for providing access**

The team will work with the Library to link the materials to the suitable online sites. The team will publicize the availability of the materials to the School of Science and Technology faculty in fall 2019. Drs. Yi Ding, Yaqua Xu, and Madhushri Banerjee will be responsible for these activities.

During spring 2019, the team will begin collecting the materials and developing all of the hands-on activities. The materials will be posted on D2L and the GGC Wiki sites, which can be accessed by all ITEC faculty. Any new materials will also be accessible to the public through Galileo Open Learning Materials and the ALG repository.

## Quantitative & Qualitative Measures

**GOAL A: Improve the textbook affordability for ITEC 2201 and BUSA 3100 by replacing the current expensive traditional textbooks used in those courses with low to zero-cost customized learning material.**

### Qualitative Measure, Methods, and Tools

Use the Class Climate survey to collect students' feedback about the impact of no-cost materials on their course completion. We will ask such questions as, "How useful are the materials to the course completion?" "How important a role did the cost of the book play in your decision to enroll in the course?" A Likert scale (Strongly disagree to Strongly agree) will be used for such statements as: "Zero-cost of the textbook materials motivated me to better plan for the course taken", "Zero-cost of the textbook materials motivated me to complete the course goals on time."

### Quantitative Measure, Methods, and Tools

- Use D2L tools to track the frequency of access and use.
- Monitor the number of ITEC 2201 and BUSA 3100 sections taught by team members and the number of students enrolled and completing the course.

Track the price of the textbooks utilized for the courses, the number of students participating in the project, and the eventual savings resulting from the project.

**GOAL B: Improve student retention, performance, and preparation for the next ITEC level by providing customized learning material to meet student learning needs.**

### Qualitative Measure, Methods, and Tools

Require subject-based feedback on: (1) what can be improved; (2) what has worked well; and (3) highlight the most interesting topic or activities. Students will be asked to write a short report on addressing these questions. Dr. Ding already uses this journal format to successfully improve his student commitment to learning.

### Quantitative Measure, Methods, and Tools

- Collect data on dropout, fail, and withdrawal rates in the experimental group (the classes where the transformation is implemented) versus the control group. The data will help gauge their level of preparedness.
- Use a questionnaire to gauge the perceived level of preparedness and increase in confidence.

**GOAL C. Improve learning engagement by training students in the usage of the library system such as MERLOT, Galileo, USG libraries, and Lynda.com.**

### Qualitative Measure, Methods, and Tools

- Use student journals to ask about the topics they have studied through the library system.

### Quantitative Measure, Methods, and Tools

Use the Class Climate survey to ask the frequency and duration of using the library system. The questionnaire will include questions such as: "How many times did you use the library system to prepare for class every week ... to prepare for a project?" "On average, how many hours per week did you use the library system for research ... for learning?"

## Timeline



For implementation in Spring 2019 Semester

### **Spring 2019**

3/31/2019

Complete a draft of the free text material with above listed 10 chapters and relevant complimentary study materials such as reading assignments, lecture notes, training video clips, hands-on labs, and homework assignments.

4/30/2019

Complete draft course level material development including newly designed syllabus, test banks, and the final exam.

5/20/2019

Develop a questionnaire to evaluate the impact of using the low to zero-cost text materials for ITEC 2201 and BUSA 3100.

### **Summer 2019**

8/10/2019

Complete one pilot study with proposed low to zero cost text material on 2 sections during the summer 2019 semester, reaching ~40 students. Complete the assessment data collection. Complete the revision of the draft low to zero cost textbook material.

### **Fall 2019**

12/15/2019

Complete the course offering in the fall semester in 8 sections, affecting 160 students. Complete the survey data collection. Complete student evaluation.

### **Spring 2020**

Administer the transformed textbook in the final 8 sections that will reach 160 students. The questionnaires will be administered, data collected, and data analyzed. The final report will also be prepared. Any remaining funds will be used to partially cover expenses for a presentation at the AMCIS 2019 conference. The presentation's objective is to disseminate the findings of the project and encourage others to transform their syllabus into a no-cost-to-student textbook.

### **Budget**

A. Type of Grant: Standard-Scale Transformation

B. Budget request: \$10,800

C. Budget Justification:

**(1) Personnel: \$10,000**

Funds are requested to compensate for the investigators' work and activities beyond normal teaching load in order to successfully complete the project. Each team member will receive ~\$3,333.33 each. The requested amount will cover each team member's pay and fringe benefits (FICA/SS, FICA Med, and Retirement). The team will be compensated for work related to their tasks:

- Dr. Yi Ding will coordinate the project and will serve as the lead in the development of Chapters 2, 3, 6, 10.
- Dr. Yaquan Xu will lead the work on Chapter 5, 7 and 8.
- Dr. Madhushri Banerjee will lead the work on Chapter 4 and 9.
- Chapter 1 will require the collaborative contributions of all members of the team.

**(2) Travel expense: \$800**

Funds are requested to cover the travel expenses of at least two team members' travel to the kick-off event. The fund will cover per diem, mileage, and hotel, and any other materials needed.

**(3) Grant Total: \$10,800**

### **Sustainability Plan**

The project team remains committed to the project by continuing to review and revise the materials even after the project is over to ensure that the materials are current and meet the requirements of a quality information systems course. The project team also plans to sustain the project by disseminating the availability of the vetted course materials/resources to other faculty teaching the upper-level ITEC courses and business faculty teaching the equivalent MIS course. We will accomplish this by conducting presentations during the SST and SBA faculty meetings, as well as conversations with colleagues in the field.

The letter of support provides continued institutional support for the ITEC 2201 and BUSA 3100 project since it helps eliminate or reduces the cost for our students and provides better preparation for higher level IT courses.

### **Acknowledgment**

---

#### **Grant Acceptance**

[Acknowledged] I understand and acknowledge that acceptance of Affordable Learning Georgia grant funding constitutes a commitment to comply with the required activities listed in the RFP and that my submitted proposal will serve as the statement of work that must be completed by my project team. I further understand and acknowledge that failure to complete the deliverables in the statement of work may result in termination of the agreement and funding.

January 3, 2019

1000 University Center Lane  
Lawrenceville, GA 30043  
Phone: 678-407-5602  
www.ggc.edu

To: Grant Review Committee  
Affordable Learning Georgia, University Systems of Georgia  
Re: Textbook Transformation Grant

Dear Committee,

As Dean of the School of Science and Technology at Georgia Gwinnett College (GGC), I would like to give my full support to Drs. Yi Ding, Yaquan Xu, and Madhushri Banerjee's **Affordable Learning Georgia (ALG)** Textbook Transformation grant application, which also involves joint effort from Dr. Nannette Napier at school of business.

This project will develop no-cost learning materials for introductory Information Systems course -ITEC2201, a required core ITEC course for ITEC major and minor students at School of Science and Technology, and Management Information Systems - BUSA 3100, an important elective course for business majors, such as those in Management Information Systems (MIS) at the school of business.

The no-cost-to-student ITEC 2201 and low cost-to-student BUSA 3100 project will benefit over three hundred sixty GGC students every year. The result of this project will be an improvement in our students' retention, completion, and progression. In addition, the free resources will help improve the course's enrollment among non-IT majors such as MIS majors, where cyber security education plays an important role.

Once this project is completed, the no-cost learning materials will be maintained and made accessible to our students through our online course administration systems, such as GeorgiaVIEW Desire2Learn and GGC Wiki. Therefore, the efforts of this project will be sustained over the long term.

I sincerely hope that the ALG committee will consider the project for funding. If you have any questions, please do not hesitate to contact me.

Sincerely,



Dr. Thomas G. Mundie  
Dean, School of Science and Technology  
Georgia Gwinnett College



Textbook Transformation Grants, Round Thirteen  
(Spring 2019 –Spring 2020)  
Proposal Form and Narrative

**APPLICANT, TEAM, AND SPONSOR INFORMATION**

|                          |   |
|--------------------------|---|
| Institution(s)           | Georgia Gwinnett College                                      |
| Applicant Name           | Yi Ding   |
| Applicant Email          | yding1@ggc.edu  |
| Applicant Phone #        | 678-464-6931  |
| Applicant Position/Title | Associate Professor of IT                                     |
| Submitter Name           | Cathy Hakes   |
| Submitter Email          | chakes@ggc.edu  |
| Submitter Phone #        | 678-407-5875  |
| Submitter Position       | Executive Director, Office of Research and Sponsored Programs |

Please provide the first/last names and email addresses of all team members within the proposed project. Include the applicant (Project Lead) in this list.

|               | Name               | Email Address    |
|---------------|--------------------|------------------|
| Team Member 1 | Yi Ding            | yding1@ggc.edu   |
| Team Member 2 | Yaquan Xu          | yxu@ggc.edu      |
| Team Member 3 | Madhushri Banerjee | mbanerje@ggc.edu |

If you have any more team members to add, please enter their names and email addresses in the text box below.

Please provide the sponsor’s name, title, department, and institution. The sponsor is the provider of your Letter of Support.

Dr. Thomas Mundie, Dean, School of Science and Technology, Georgia Gwinnett College

**PROJECT INFORMATION AND IMPACT DATA**

|                               |   |
|-------------------------------|---|
| <b>Title of Grant Project</b> | Development of Affordable Textbook for Introduction to Information Systems Course |
| <b>Type of Grant</b>          | Standard-Scale Transformation / No-or-Low-Cost-to-Students Learning Materials     |

|  |   |
|--|---|
| <b>Requested Amount of Funding</b>   | \$10,800  |
| <b>Course Names and Course Numbers</b>                                     | Introduction to Information Systems, ITEC 2201<br>Management Information Systems, BUSA 3100   |
| <b>Final Semester of Project</b>   | Spring 2020   |
| <b>Average Number of Students Per Course Section Affected by Project</b>   | 20  |
| <b>Average Number of Sections Affected by Project in One Academic Year</b> | 18  |
| <b>Total Number of Students Affected by Project in One Academic Year</b>   | 360   |
| <b>Average Number of Students Affected per Summer Semester</b>             | 40  |
| <b>Average Number of Students Affected per Fall Semester</b>               | 160   |
| <b>Average Number of Students Affected per Spring Semester</b>             | 160   |
| <b>Title/Author of Original Required Materials</b>                         | Business Driven Technology by Paige Baltzan.<br>Required for ITEC 2201, \$178.55<br><br>Principles of Information Systems by Stair<br>Required for BUSA 3100, \$250 |
| <b>Original Total Cost Per Student</b>                                     | Cost: \$178.55 for ITEC 2201 student<br>Cost: \$250 for BUSA 3100 student<br>Total: \$428.55  |
| <b>Post-Project Cost Per Student</b>                                       | Cost: \$0 for ITEC 2201 student<br>Cost: \$120 for BUSA 3100 student<br>Total: \$120  |
| <b>Post-Project Savings Per Student</b>                                    | Saving: \$178.55 for ITEC 2201 student<br>Saving: \$130 for BUSA 3100 student<br>Total: \$308.55  |
| <b>Projected Total Annual Student Savings Per Academic Year</b>            | \$53,565 for ITEC 2201 student<br>\$7,800 for BUSA 3100 student<br>Total: \$61,365  |
| <b>Using OpenStax Textbook?</b>  | No  |

## NARRATIVE SECTION

### 1. PROJECT GOALS

The goals of the project are to:

- A. Improve the textbook affordability for ITEC 2201 and BUSA 3100 by replacing the current expensive traditional textbooks used in those courses with low to zero-cost customized learning materials.
- B. Improve student retention, performance, and preparation for the next ITEC level by providing customized learning material to meet student learning needs.
- C. Improve learning engagement by training students in the usage of the library system such as MERLOT, Galileo, USG libraries, and the Lynda.com.

### 2. STATEMENT OF TRANSFORMATION

#### *Overview of the Transformation*

Since the 1970s, textbooks have progressively increased in cost. In fact, textbook prices have risen faster than costs in other sectors. For instance, textbook cost since the 1970s has increased 812% compared to medical services' increase of 575%, new home costs by 325%, and consumer price index by 250% (Zook, 2017). When comparing majors with the most expensive books, an article by Robert Tolmach (2016) listed Computer Science major as number 11 in the list out of 31 majors, while Business (Economics) is number 1. The sad news is that editions of computer textbooks can go out of date quite quickly, and books in these fields (science/social science books), which are usually most expensive new, “retain proportionally the **least amount of their original price**” according to a 2015 article by Kopf.

ITEC 2201, a required introductory level information system (IS) course for IT major students, has an expensive textbook that costs around \$178.55. BUSA 3100, an equivalent MIS course required for students in the School of Business, has a textbook that costs around \$250.00. Due to the high cost of the textbook materials, we have observed that students are having financial difficulties paying for textbooks materials and often delay their purchases of the materials until later in the semester, which can significantly affect the students' progress in class. A 2017 survey conducted by Wakefield Research among “1000 students from four-year colleges” (McKenzie 2017) indicated that such delay of accessing the needed textbook materials severely hindered students' learning progress and performance in the class. In our case, about 30% to 40% of students received D, F, W was due to those students' delay in accessing the textbook materials. Our goal is to see a decrease from 30% to 40% of students receiving such grades, especially because ITEC 2201 is the sole prerequisite for upper-level courses such as Information Security, Introduction to Database, Introduction to Network, and System Analysis and Design. It is imperative that we, as instructors on record, remove all possible barriers to students' academic performance in order to ensure success in their IT career.

Another important reason for the need for the project is that 40% to 50% of chapter contents in a traditional textbook cannot be covered in class because they are either too much for students to learn in one semester, lack the depth that is needed to meet the course objectives, or irrelevant to

the level of the courses that are taught. For example, in ITEC 2201, the textbook has gone through four rounds of revisions over the past five years. Still, 46% of the latest edition of the textbook contents are left unused for the course as of Spring 2019. The same case happens in BUSA 3100 as well. Among a total of 14 chapters, almost half of textbook contents are not covered by the end of a semester. For those chapters that are used in the course, there is often a lack of depth in coverage that is required and essential to prepare students for the upper level IT courses.

Overall, we need textbook and materials for our introduction to IS/MIS course that are customized, engaging, and inexpensive.

### ***Project's transformative impact on the course and department***

Due to the availability of many free Introduction to IS/MIS learning resources, the investigators of this proposal feel those expensive traditional textbooks can be completely replaced by free online materials. Through the efforts of a team of committed experts, the existing required materials can be appropriately selected, organized, customized, and revised. The source of online materials will be chosen from MERLOT; Galileo; USG libraries; GGC's online subscriptions from an academic database such as ACM; IEEE; online education website such as Lynda.com; and digital libraries such as Books 24x7, to name a few. In addition, open source ERP software and freeware (some of those are free to our students due to the academic licenses offered by the vendors) will be used to support the students' hands-on and experiential-learning needs in those IS/MIS introduction courses. Ultimately, with the combination of those materials and software, we are confident that our project will help students get a much holistic learning experience.

The investigators of this proposal estimate that the transformation will affect over 300 students in ~15 sections of ITEC 2201 course and 60 students in 2 sections of BUSA 3100 courses by the end of the project. In addition, the team will make the revised textbook and accompanying materials available to 5 full-time and 1 part-time ITEC faculty, as well as USG faculty members who can access the transformed textbook through the ALG repository. Materials will also be made available to the faculty outside of USG through the GGC Wiki website. It is expected that the course materials provided by the team will be accessible by typing "ITEC 2201 or Introduction to Information System" through any internet search engine. The anticipated result is that students and faculty outside of GGC will be able to access such materials by typing these keywords in any search engine.

Students will not be required to purchase an expensive textbook; instead, they will be able to obtain high-quality reading and hands-on materials as well as applicable multimedia (video) learning contents to facilitate learning in ITEC 2201 at no cost to them. For BUSA 3100, after implementation of this project, we estimate a maximum \$120 fee could still remain for students to purchase a proprietary online Excel training software that is currently required in that specific course. Part of our plans will be to develop, evaluate, and disseminate the use of a free alternative training material/software to accompany the BUSA 3100 materials. We hope to submit a proposal for such a project in ALG's next proposal round. The transformation will hopefully empower the participating faculty to create engaging, active learning activities that could lead to better problem-solving skills development, retention, and overall student success.

### ***Project's transformative impact on the institution***

GGC as an open-access college that provides quality inexpensive higher education services to thousands of students and their families who cannot afford expensive tuition and fees. Offering free or reduced textbooks is critical to our students' success in light of the fact that 76% of our students receive some type of Financial Aid as of January 3, 2018, according to our financial aid office's report. However, the high textbook prices can still deter many students from accessing the quality education provided by GGC and achieving college success. This project removes students who want to major in IT completely from worries of paying the expensive textbook fee in order to take a crucial and mandatory IT course, ITEC 2201. It also minimizes the textbook financial burden for students who want to take BUSA 3100 for MIS major at the school of business. Finally, this project provides customized learning materials that not only meet the unique learning needs of our students but also help them better prepare for the upper level IT courses such as ITEC 3200 - Introduction to Database, ITEC 3350 - Digital Commerce, ITEC 3700 - Systems Analysis and Design.

### **3. TRANSFORMATION ACTION PLAN**

The course includes the following major topics:

- Chapter 1 - Introduction to Information Systems
- Chapter 2 - Organizational Strategy, Competitive Advantage, and Information Systems
- Chapter 3 - Information Security
- Chapter 4 - Data and Knowledge Management (Big Data)
- Chapter 5 - Business Intelligence and Data Analytics
- Chapter 6 - Networks. Wireless and Cloud Computing
- Chapter 7 - E-Business and Digital-Commerce
- Chapter 8 - Enterprise Resource Planning (ERP), CRM, and SCM
- Chapter 9 - Software Development Methodology and Project Management
- Chapter 10 - Ethics and Privacy

Additional readings and other material dealing with hands-on, problem-solving learning materials (e.g., SAP, Excel, and Access exercises, simulation games) will be integrated into the course in order to increase student learning effectiveness. An outline of the activities and expectations for the students will be included in the Syllabi for ITEC 2201 and BUSA 3100. Each investigator is given a number of appropriate introduction to IS topics to search over online learning sources (e.g., MERLOT, Galileo, USG libraries, GGC's online subscriptions) to identify, review, and select relevant learning materials. Then, all those selected materials will be compiled together and go through a preliminary evaluation process to ensure their appropriateness to the course to be taught. The evaluation result would help the next step of updating the current instructional design, curriculum alignment, accessibility setup, etc.

**Course and Syllabus Redesign Phase.** The team will compile sources of materials, which will include e-books from MERLOT, GGC e-book library, etc.; relevant IS training videos (e.g., Excel, MySQL video training courses) from Lynda.com, YouTube, etc. and IS research articles



from ACM, IEEE and the training ERP software from SAP online academic center. The GGC library will be asked to assist in creating a page of links and files that will be made available to the public on the Library's publicly-available page on the GGC website.

The compiled materials (revised textbook and supplemental materials) will be piloted to 5 sections of ITEC 2201 to be taught by Drs. Yi Ding, Yaqua Xu, and Madhushri Banerjee in fall 2019. The revised textbook will be piloted in the remaining 10 ITEC 2201 sections, taught by all three team members, in spring and summer 2020.

### ***Team members' roles***

Dr. Yi Ding will coordinate the project development activities. He will work with Drs. Madhushri Banerjee and Yaquan Xu to select the materials and in cooperating with other colleagues and the library in the development of activities and the implementation of the assessment plan.

All three personnel will act as subject matter experts and instructors of record. Topics taught in ITEC 2201 will be assigned to each member, and each will obtain open source, no-cost materials for the different topics. The assignments are:

- Dr. Yi Ding (ITEC 2201 course coordinator) will lead the development of Chapter 2, 3, 6, 10.
- Dr. Yaquan Xu (BUSA 3100 instructor) will lead the work on Chapter 5, 7 and 8.
- Dr. Madhushri Banerjee will lead the work on Chapter 4 and 9.
- Chapter 1 will require the collaborative contributions of all members of the team.

The team members are acquainted with the materials in all of these areas and will have the opportunity to substantively contribute to each subject matter. Materials will be collected from online sources discussed in previous sections.

### ***Plan for providing access***

The team will work with the Library to link the materials to the suitable online sites. The team will publicize the availability of the materials to the School of Science and Technology faculty in fall 2019. Drs. Yi Ding, Yaqua Xu, and Madhushri Banerjee will be responsible for these activities.

During spring 2019, the team will begin collecting the materials and developing all of the hands-on activities. The materials will be posted on D2L and the GGC Wiki sites, which can be accessed by all ITEC faculty. Any new materials will also be accessible to the public through Galileo Open Learning Materials and the ALG repository

#### 4. QUANTITATIVE AND QUALITATIVE MEASURES

**GOAL A: Improve the textbook affordability for ITEC 2201 and BUSA 3100 by replacing the current expensive traditional textbooks used in those courses with low to zero-cost customized learning material.**

##### **Qualitative Measure, Methods, and Tools**

Use the Class Climate survey to collect students' feedback about the impact of no-cost materials on their course completion. We will ask such questions as, "How useful are the materials to the course completion?" "How important a role did the cost of the book play in your decision to enroll in the course?" A Likert scale (Strongly disagree to Strongly agree) will be used for such statements as: "Zero-cost of the textbook materials motivated me to better plan for the course taken", "Zero-cost of the textbook materials motivated me to complete the course goals on time."

##### **Quantitative Measure, Methods, and Tools**

- Use D2L tools to track the frequency of access and use.
- Monitor the number of ITEC 2201 and BUSA 3100 sections taught by team members and the number of students enrolled and completing the course.
- Track the price of the textbooks utilized for the courses, the number of students participating in the project, and the eventual savings resulting from the project.

**GOAL B: Improve student retention, performance, and preparation for the next ITEC level by providing customized learning material to meet student learning needs.**

##### **Qualitative Measure, Methods, and Tools**

Require subject-based feedback on: (1) what can be improved; (2) what has worked well; and (3) highlight the most interesting topic or activities. Students will be asked to write a short report on addressing these questions. Dr. Ding already uses this journal format to successfully improve his student commitment to learning.

##### **Quantitative Measure, Methods, and Tools**

- Collect data on dropout, fail, and withdrawal rates in the experimental group (the classes where the transformation is implemented) versus the control group. The data will help gauge their level of preparedness.
- Use a questionnaire to gauge the perceived level of preparedness and increase in confidence.

**GOAL C. Improve learning engagement by training students in the usage of the library system such as MERLOT, Galileo, USG libraries, and Lynda.com.**

**Qualitative Measure, Methods, and Tools**

Use student journals to ask about the topics they have studied through the library system.

**Quantitative Measure, Methods, and Tools**

Use the Class Climate survey to ask the frequency and duration of using the library system. The questionnaire will include questions such as: "How many times did you use the library system to prepare for class every week ... to prepare for a project?" "On average, how many hours per week did you use the library system for research ... for learning?"

**5. TIMELINE**

For implementation in Spring 2019 Semester

**Spring 2019**

*3/31/2019*

Complete a draft of the free text material with above listed 10 chapters and relevant complimentary study materials such as reading assignments, lecture notes, training video clips, hands-on labs, and homework assignments.

*4/30/2019*

Complete draft course level material development including newly designed syllabus, test banks, and the final exam.

*5/20/2019*

Develop a questionnaire to evaluate the impact of using the low to zero-cost text materials for ITEC 2201 and BUSA 3100.

**Summer 2019**

*8/10/2019*

Complete one pilot study with proposed low to zero cost text material on 2 sections during the summer 2019 semester, reaching ~40 students. Complete the assessment data collection. Complete the revision of the draft low to zero cost textbook material.

**Fall 2019**

*12/15/2019*

Complete the course offering in the fall semester in 8 sections, affecting 160 students. Complete the survey data collection. Complete student evaluation.

## **Spring 2020**

Administer the transformed textbook in the final 8 sections that will reach 160 students. The questionnaires will be administered, data collected, and data analyzed. The final report will also be prepared. Any remaining funds will be used to partially cover expenses for a presentation at the AMCIS 2019 conference. The presentation's objective is to disseminate the findings of the project and encourage others to transform their syllabus into a no-cost-to-student textbook.

## **6. BUDGET**

A. Type of Grant:  Standard-Scale Transformation

B. Budget request: \$10,800

C. Budget Justification:

### **(1) Personnel: \$10,000**

Funds are requested to compensate for the investigators' work and activities beyond normal teaching load in order to successfully complete the project. Each team member will receive ~\$3,333.33 each. The requested amount will cover each team member's pay and fringe benefits (FICA/SS, FICA Med, and Retirement). The team will be compensated for work related to their tasks:

- Dr. Yi Ding will coordinate the project and will serve as the lead in the development of Chapters 2, 3, 6, 10.
- Dr. Yaquan Xu will lead the work on Chapter 5, 7 and 8.
- Dr. Madhushri Banerjee will lead the work on Chapter 4 and 9.
- Chapter 1 will require the collaborative contributions of all members of the team.

### **(2) Travel expense: \$800**

Funds are requested to cover the travel expenses of at least two team members' travel to the kick-off event. The fund will cover per diem, mileage, and hotel, and any other materials needed.

### **(3) Grant Total: \$10,800**

## **7. SUSTAINABILITY PLAN**

The project team remains committed to the project by continuing to review and revise the materials even after the project is over to ensure that the materials are current and meet the requirements of a quality information systems course. The project team also plans to sustain the project by disseminating the availability of the vetted course materials/resources to other faculty teaching the upper-level ITEC courses and business faculty teaching the equivalent MIS course. We will accomplish this by conducting presentations during the SST and SBA faculty meetings, as well as conversations with colleagues in the field.

The letter of support provides continued institutional support for the ITEC 2201 and BUSA 3100 project since it helps eliminate or reduces the cost for our students and provides better preparation for higher level IT courses.

## **8. REFERENCES**

Kopf, Dan. (August 24, 2015). "Which Major Has the Most Expensive Textbooks?" Retrieved from <https://priceonomics.com/which-major-has-the-most-expensive-textbooks/>

McKenzie, Lindsay. (2017). Study: High Textbook Prices Lead to Poor Grades. Retrieved from <https://www.insidehighered.com/quicktakes/2017/09/20/study-high-textbook-prices-lead-poor-grades>

Tolmach, Robert. (September 8, 2016). "Which College Major Has the Most Expensive Textbooks?" Retrieved from <https://freethetextbooks.org/blogs/news/which-college-major-has-the-most-expensive-textbooks>,

Zook, Chris. (September 7, 2017). "Infographic: Textbook Costs Skyrocket 812% in 35 years." Retrieved from <https://www.aeseducation.com/blog/infographic-the-skyrocketing-cost-of-textbooks-for-schools-students>.