Application Details

Manage Application: Textbook Transformation Grants: Round Eleven

Award Cycle:	Round 11
Internal Submission Deadline:	Tuesday, January 23, 2018

Application Title:	365
Application ID:	002092
Submitter First Name:	Lei
Submitter Last Name:	Li
Submitter Title:	Professor
Submitter Email Address:	lli13@kennesaw.edu
Submitter Phone Number:	470-578-3915
Submitter Campus Role:	Proposal Investigator (Primary or additional)
Applicant First Name:	Lei
Applicant Last Name:	Li
Applicant Email Address:	Lli13@kennesaw.edu
Applicant Phone Number:	(470)578-3915
Primary Appointment Title:	Professor of Information Technology
Institution Name(s):	Kennesaw State University
Co-Applicant(s):	Rebecca Rutherfoord, Svetlana Peltsverger, Richard Halstead-Nussloch, Guangzhi Zheng, Zhigang Li
Submission Date:	Tuesday, January 23, 2018

Proposal Title:	365
Proposal Category:	No-Cost-to-Students Learning Materials
Final Semester of Instruction:	Fall 2018
Are you using an OpenStax textbook?:	No

Team Members (Name, Email Address):

Lei Li, Professor of Information Technology, lli13@kennesaw.edu

Rebecca Rutherfoord, Interim Assistant Dean, College of Computing

and Software Engineering, Department Chair for Information Technology, and Professor of Information Technology, brutherf@kennesaw.edu.

Svetlana Peltsverger, Interim Associate Dean of the College of

Computing and Software Engineering and Professor of

Information Technology, speltsve@kennesaw.edu.

Richard Halstead-Nussloch, Professor of Information Technology, rhalstea@kennesaw.edu.

Guangzhi Zheng, Associate Professor of Information Technology, gzheng@kennesaw.edu.

Zhigang Li, Instructional Designer & Part-Time Assistant

Professor of Information Technology, zli8@kennesaw.edu

Sponsor, (Name, Title, Department, Institution):

Department of Information Technology, Kennesaw State University

Course Names, Course Numbers and Semesters Offered:

IT 6103 IT Policy and Law, spring, summer, and fall

IT 6413 IT Service Delivery, spring, summer, and fall

IT 6423 IT System Acquisition and Integration, spring, summer, and fall

IT 6863 Database Security & Auditing, fall

IT 7113 Data Visualization, spring and summer

List the original course materials for students (including title, whether optional or required, & cost for each item):	IT 6103 , Essentials of Business and Online Commerce Law, 1st edition, Henry R. Cheeseman, Prentice Hall, ISBN 13: 9780131440470, $224.05, Required. MSIT elective course.IT 6413, Brady Orand and Julie Villarreal, (2011) Foundations of IT Service Management with ITIL 2011, 2nd edition, ISBN 13: 9781466231320, $29, Required. MSIT required course.IT 6423 , Embedded, no-cost, but outdated course materials authored by original course designer covering both IT system acquisition/procurement and IT system integration, $100 Estimated value. Required. MSIT required course.IT 6863, 1). Securing SQL Server, 3rd Edition, Protecting Your Database from Attackers by Denny Cherry ISBN: 9780128012758, 2015, $49.95; 2). Oracle Privacy Security Auditing: by Arup Nanda & Donald K Burleson (Author) ISBN ISBN-13: 978-0991638697,2014, $59.95, total $110, Required. MSIT elective course.IT 7113, 1). Tableau 10 Business Intelligence Cookbook, ISBN 9781786465634, $50; 2). Information Dashboard Design: Displaying Data for At-a-Glance Monitoring 2nd Edition $40; 3). Show Me the Numbers: Designing Tables and Graphs to Enlighten Second Edition $45, total $135, Required. MSIT elective course.
Average Number of Students per Course Section:	19
Number of Course Sections Affected by Implementation in Academic Year:	19
Average Number of Students Per Summer Semester:	13
Average Number of Students Per Fall Semester:	26
Average Number of Students Per Spring Semester:	23

Total Number of Students Affected by Implementation in Academic Year:	397
Requested Amount of Funding:	30000
Original per Student Cost:	$285.35 Assuming a student take the two required courses and one elective. IT 6413-$29, IT 6423-$100, and the average cost of 3 electives is: 156.35. The total is $285.35 =$29+$100+$156.35.
Post-Proposal Projected Student Cost:	0
Projected Per Student Savings:	$285.35
Projected Total Annual Student Savings:	$39,332.50

Creation and Hosting Platforms Used ("n/a" if none):

Creation platform - D2L Brightspace

Hosting platform - Kennesaw State University faculty web page

Project Goals:

The Master of Science in Information Technology (MSIT) is the largest graduate program at Kennesaw State University and currently has over 260 students in the MSIT and affiliated graduate certificate programs. In this project, we propose to take a department-wide effort to replace the textbooks used in five MSIT courses with no-cost-to-students learning materials that offer equivalent or better educational effectiveness.

The impact of this project will be profound. Having graduated more than 500 students since 2009, the MSIT program has been a big contributor to the much-needed IT workforce for the State of Georgia. More importantly, the MSIT program is also a great enabler for underrepresented students and people who want to change their job fields in the middle of their career: Approximately, 34% of students in the MSIT program are female, 60% are minority students, and around 40% of the students entered MSIT without background in computing. High quality curriculum and affordability are two key factors for the success of the MSIT program. We strive to make it more affordable to better support the career–changing students and further boost female and minority participation in our program. We have transformed six MSIT courses using no-cost learning material in previous ALG grants and the responses from our students are overwhelmingly positive. The proposed transformation efforts will not only greatly increase the affordability of our MSIT program, but also better prepare our students for the job market with free, up-to-date and well-designed learning material.

Statement of Transformation:

The traditional textbooks used in four of the five proposed MSIT courses are not only costly, but also not very effective in facilitating student learning. Information technology is a fast changing field and we have to constantly update our curriculum to stay on the cutting edge which involves creating new courses and revising existing courses.

The dynamic nature of the technology imposes several challenges to the traditional textbook model: 1). It's often difficult to find an appropriate textbook for an IT course. The textbooks used in four out of five proposed MSIT courses are professional books which aren't specifically written for higher education. Instructors usually have to create supplemental material such as PowerPoint slides themselves. 2) An IT course may include a wide range of topics that often requires more than one book which significantly increases the textbook costs for students. For example, IT 6863 Database Security and Auditing requires two books and IT 7113 Data Visualization uses three books. IT6423 covers both IT system acquisition and IT system integration, and thus will require at least two texts to replace the current materials. 3). Traditional textbook can't keep up with the fast-evolving pace of technology. For example, a new technology may come out right after a textbook get published and it will take a long time for a new version to reflect the change. Moreover, the new edition will not only cost more but also decrease the resale value of the older edition. 4). Other situations may make a textbook obsolete. For instance, IT6423 system acquisition and integration used to have a well fit textbook provided by the original course author. However, that course author has left the university and is not in a position to update the materials he embedded into the learning management system. Now, for the current round of MSIT course updating, the students in IT6423 probably will be required to purchase two external textbooks.

This project aims to replace the textbooks used in the proposed MSIT courses with no-cost-to-students learning materials that offer equal or higher educational effectiveness. We believe the proposed transformation is an economical and viable solution to address the challenges imposed by the traditional textbook model.

Firstly, the learning materials for the proposed MSIT courses are widely and readily available on the World Wide Web today and many of these resources are publicly accessible, free, or with an open license to use. These materials include open and free tutorials, books, videos, labs, software, and services. For example, IT 6413 covers Information Technology Infrastructure Library (ITIL) and there is a vast amount of information about ITIL available on the Web.

Secondly, Web content can better reflect the latest trends and industrial development than the traditional textbooks as technology is changing rapidly, so is the content of Web resources. We are already using contents from the Web as supplemental materials to the textbook. For example, currently in the IT6423 course, many of the student exercises have them search the

web for supplemental material covering the latest methods and materials on quickly changing aspects of IT systems acquisition and integration. These include sourcing strategies, e.g., make, buy, rent, subscribe, cloud, etc. and finding contemporary examples of IT Requests for Proposals (RFPs).

Thirdly, the materials from the Web are generally more interactive. The interactive content will not only engage the students, but also improve their learning experience. For example, IT 6863 Database Security & Auditing uses an interactive online Structured Query Language (SQL) editor (https://www.w3schools.com/sql/trysql.asp?filename=trysql_select_all) for student to review SQL concepts and complete a series of labs to create a project that can be added to their professional portfolio.

Fourthly, developing and assembling a set of learning materials ourselves allow us to better align the course contents not only with the outcomes of each course, but also with the outcomes of MSIT program. For example, in IT 7113, there is no one textbook covering all learning outcomes designed; thus, selected content from three textbooks are needed. Using the materials compiled by the instructor actually better serve the learning outcomes of the course.

Lastly, our project team is well prepared for the proposed transformation. The downsides of using Web resources are that they are often disorganized, may contain inaccurate information, may be changed or deleted without notices. However, our team members are not only subject matter experts in IT fields, but also are proficient educators who on average have more than 10 years teaching experience. We will select, organize and integrate resources from the Web and transform the information into instructionally sound learning materials for the proposed courses. We also created a sustainable plan to periodically review the developed no-cost-to-student learning materials. All courses in the department are reviewed every three years as part of the continuous improvement process. In addition, several team members have either successfully completed ALG grants or are involved in grants from round 1 (round 1, #42, #44, round 2, #119, round 8, #302, round 10, #334, M10). As the results, we have transformed six MSIT courses using no-cost-to-student learning material which is very well received by the students. Building on our previous success and lessons learned, we are well positioned to continue transformation efforts and further increase the cost-saving benefits to the students in our program.

Transformation Action Plan:

With a coordinated effort, our team of investigators plan the following activities to transform the proposed MSIT courses using no-cost-to-student learning materials.

Research and identify no cost readings for each of the learning modules in each course. The reading list includes both required readings and optional readings. All of these readings will be publicly accessible, free to use, or openly licensed.
Research and identify no cost materials that can be shared across the courses.
Develop study guides and lecture notes for students' use to review course content and key

learning points.
Adopt or develop all assignments, exercises and lab materials that are no cost to students to replace the ones in the textbooks.
Develop test banks to replace the ones in the textbooks if necessary.
Update the syllabus to include major resources and no cost materials.
Re-develop the proposed courses in our learning management system, D2L Brightspace.
The developed course material will be organized based on the template provided by ALG and will be made available to public for adoption

The responsibilities of each investigator are described in the table below.

Investigator Responsibilities

Primary Investigator	Course	Responsibilities
Dr. Lei Li	IT 6413	Project Lead. Subject Matter Expert and developer; instructor of record
Dr. Rebecca Rutherfoord	IT 6103	Subject Matter Expert and developer; instructor of record
Dr. Svetlana Peltsverger	IT 6863	Subject Matter Expert and developer; instructor of record
Dr. Richard Halstead-Nussloch	IT 6423	Subject Matter Expert and developer; instructor of record
Dr. Guangzhi Zheng	IT 7113	Subject Matter Expert and developer; instructor of record
Dr. Zhigang Li	All Courses	Provide Instructional Design and Hosting Support.

Quantitative & Qualitative Measures:	We plan to assess the effectiveness of our proposal in two ways: 1) qualitatively, we will design a survey and gather inputs from the students after they used the no-cost learning material; 2) quantitatively, we will compare students' performance data gathered from sections using traditional textbooks and sections using no-cost learning material. The investigators will collect student performance data such as pass rates from the five proposed courses in 2017. This data will be used as a baseline for comparison of student performance in courses with alternative no cost material. The detailed assessment plan is shown in the table below. For each of the measurement, the investigators are going to conduct two levels of analysis: Comparing them to the preset goals. 80% is the aimed passing rate as the courses involved are graduate courses. Comparing them to those from past offerings where costly textbooks were used. We will obtain the data from the sections last taught using the textbooks. Project Assessment Plan

Timeline:

The major milestones of the proposal are illustrated in the table below.

Project Major Milestone

Milestone dates	Milestone
03/01/2018	1). Complete baseline gathering of statistics.
05/05/2018	1). Complete course level materials redesign (mainly course syllabus) for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113. 2). Complete project progress report.
07/15/2018	1). Complete the module level development including reading, lecture notes, video, exams, labs, and assignments for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113.

07/30/2018	1). Update the D2L Brightspace course sites are updated using the developed no cost learning material for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113. 2). Complete project progress report.
08/12/2018	1). A survey instrument to collect students' feedback on the effectiveness of the no cost materials are created
12/02/2018	1). Complete the course offering for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113. 2). Complete the survey data collection for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113. 3). Complete student evaluation for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113.
12/15/2018	1). Complete data collection and analysis for the whole project. 2). Compile and submit project final report.

Budget:

The funding mainly compensates our team of investigators' work and activity beyond normal teaching load or other job responsibilities in order to successfully complete the project. The role each PI and the corresponding compensation are listed as follows. For each proposed course, course architects approximately will spend at least 80 hours in developing the no-cost learning material and instructor of records, will spend 20 hours in course assessment. Instructional support will devote at least about 30 hours in assisting course architects. Thus, we request the budget of this project as follows.

<p align="center">Budget for Investigators Compensation</p>

Team Member	Role	Investigators compensation
Dr. Lei Li	IT 6413 developer & instructor	$5000
Dr. Rebecca Rutherfoord	IT 6103 developer & instructor	$5000
Dr. Svetlana Peltsverger	IT 6863 developer & instructor	$5000
Dr. Richard Halstead-Nussloch	IT 6423 developer & instructor	$5000
Dr. Guangzhi Zheng	IT 7113 developer & instructor	$5000
Dr. Zhigang Li	All courses support	$1,000

Investigators compensation: $5000 *5 + 1,000 = $26,000

Travel & Other Expense: $2500. $800 is the expense for two team members attend the Kickoff Meeting at Middle Georgia State University in Macon, GA. $1700 is budgeted for attending another conference.

Equipment (computers and tablets): $1500

Total Budget: $30,000

Only open source software or free software will be used in this project thus there is no additional spending on software.

Sustainability Plan:

The IT department implements a course architect system for all courses. Each course is assigned to a faculty as the course architect who is responsible for the content of the course and teaches the course regularly. All of our investigators except the instructional designer is a course architecture for the corresponding courses. Our team member will develop the no-cost-to-student learning material for the proposed courses and teach the courses for the first time using the new material. As a course architect, our team member will also make sure a course is continuously taught using developed no-cost learning material in the future semesters even the course might have a different instructor.

Moreover, the developed course content is not only available at learning management system, but also archived at department server. It's also our department policy that there are at least two faculty who regularly teach a course. This further ensures the developed learning material will be continuously used and updated even there is a personnel turnover.

The IT department also have well established course continual improvement plan. Each course is assessed each semester after being taught, and a course will be formally evaluated and updated every three years or earlier if the need arises. A course architect is in charge of those assessment efforts. Thus, we are committed to continuously update the no-cost learning material in the proposed courses based on research, assessment results and feedback from students and alumni. As shown in their support letters, our transformation efforts also have strong supports from our department chair and the dean of our colleges which further ensure the sustainability of our transformation efforts.

January 19, 2018

ALG Grant Committee
University System of GA

Dear Colleagues:

This letter is in support of the Proposal "Building an Affordable Masters of Science in Information Technology (MSIT) Program Using No-Cost-to-Student Learning Material" submitted from Kennesaw State University, Information Technology department faculty. As Department Chair for Information Technology, I clearly see the need for bringing down costs for our students. The ALG grants assist faculty to prepare no-cost courses that allow students to take courses without the monetary burden of expensive textbooks.

Several faculty in the Information Technology Department at Kennesaw State University have successfully carried out ALG grants for several of our graduate Information Technology courses. The current proposal addresses both required and elective courses in the IT MSIT curriculum. The savings already realized from the previous ALG grants encouraged our faculty to develop this new ALG grant proposal to help our students save even more money.

I strongly support this proposal. This is a very sustainable proposal as we have a large Information Technology graduate degree program-the largest on the Kennesaw State University campus. Many of our students take courses online as well as in-class. Creating the no-cost for textbook version of our MSIT courses will allow students for many years to realize savings from not buying textbooks. As Information Technology material is constantly changing, the concept of not relying on just textbooks for courses is extremely important to our field.

This is a very solid proposal. All faculty participating in the previous ALG grants completed their courses and offered them successfully. Papers for several conferences, and workshops about the previous grants have been created and presented. This concept has been well received in the information technology academic community. I believe that this new ALG proposal will have the same student satisfaction and success that the previous ALG grants did. This new proposal will have a unique impact as it addresses HIT courses. Thank you for your consideration for this proposal.

Sincerely,

Rebecca H. Rutherford

Rebecca H. Rutherfoord, Ed.D.
Interim Assistant Dean of the College of Computing & Software Engineering, Department Chair for Information Technology, Professor of Information Technology
brutherf@kennesaw.edu

KENNESAW STATE UNIVERSITY
College of Computing and
Software Engineering
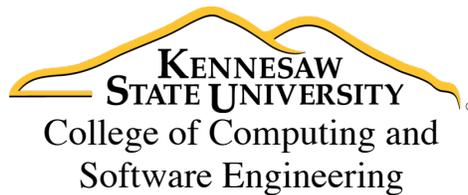
January 18, 2018

Dear Affordable Learning Georgia (ALG) Grant Reviewers,

It is my pleasure to write this letter in support of the proposal titled "Building an affordable Masters of Science in Information Technology (MSIT) Program Using No-Cost-to-Student Learning Material" submitted by Drs. Li, Rutherfoord, Peltsverger, Halstead-Nussloch, Zheng, and Li from our Information Technology (IT) Department at Kennesaw State University.

In this project, the primary investigators will work as a team to replace existing, costly textbooks in five graduate information technology related courses with no-cost-to-students learning materials. Their efforts will significantly lower the cost of education for students, saving nearly $37k per year at KSU alone and impacting nearly 400 students per year. Additionally, this will generate a positive impact on the retention, progression, and graduation for the College of Computing and Software Engineering, specifically helping us maintain excellence and throughput for the largest graduate program at KSU, the MSIT program. Additionally, given the rapid change of the IT field, having digital materials available to students will improve the ability to keep them updated with the latest advances in the field of information technology.

The proposers have past experience with a successful ALG projects, thus the quality and success of this project is highly likely. The investigators in this project are also designated course architects who are responsible for the development and the maintenance of the to-be-transformed courses.

In conclusion, I wholeheartedly support this effort to improve access to our MSIT program. This proposal has the full support of the College of Computing and Software Engineering.

Sincerely,

Dr. Jon A. Preston
Interim Dean
College of Computing and Software Engineering
Kennesaw State University

Affordable Learning Georgia Textbook Transformation Grants
Round Eleven
For Implementations beginning Summer Semester 2018
Running Through Fall Semester 2018

Proposal Form and Narrative

- *The proposal form and narrative .docx file is for offline drafting and review. Submitters must use the InfoReady Review online form for proposal submission.*
- **Note: The only way to submit the proposal is through the online form in Georgia Tech's InfoReady Review at:** https://gatech.infoready4.com/#competitionDetail/1757803
- *Italicized text is provided for your assistance; please do not keep the italicized text in your submitted proposal. Proposals that do not follow the instructions may be returned.*

Submitter Name	Lei Li
Submitter Title	Professor of Information Technology
Submitter Email	Lli13@kennesaw.edu
Submitter Phone Number	(470)578-3915
Submitter Campus Role	*Proposal Investigator*
Applicant Name	*Lei Li, Primary Investigator*
Applicant Email	Lli13@kennesaw.edu
Applicant Phone Number	(470)578-3915
Primary Appointment Title	Professor of Information Technology
Institution Name(s)	Kennesaw State University

Team Members	Lei Li, Professor of Information Technology, lli13@kennesaw.edu Rebecca Rutherfoord, Interim Assistant Dean, College of Computing and Software Engineering, Department Chair for Information Technology, and Professor of Information Technology, brutherf@kennesaw.edu. Svetlana Peltsverger, Interim Associate Dean of the College of Computing and Software Engineering and Professor of Information Technology, speltsve@kennesaw.edu. Richard Halstead-Nussloch, Professor of Information Technology, rhalstea@kennesaw.edu. Guangzhi Zheng, Associate Professor of Information Technology, gzheng@kennesaw.edu. Zhigang Li, Instructional Designer & Part-Time Assistant Professor of Information Technology, zli8@kennesaw.edu
Sponsor, Title, Department, Institution	*Department of Information Technology, Kennesaw State University*
Proposal Title	Building an affordable Masters Science in Information Technology (MSIT) Program Using No-Cost-to-Student Learning Material
Course Names, Course Numbers and Semesters Offered	IT 6103 IT Policy and Law, spring, summer, and fall IT 6413 IT Service Delivery, spring, summer, and fall IT 6423 IT System Acquisition and Integration, spring, summer, and fall IT 6863 Database Security & Auditing, fall IT 7113 Data Visualization, spring and summer
Final Semester of Instruction	*Fall 2018*

Average Number of Students Per Course Section	19	Number of Course Sections Affected by Implementation in Academic Year	19	Total Number of Students Affected by Implementation in Academic Year	397
Average Number of Students Per Summer Semester	13				
Average Number of Students Per Fall Semester	26				
Average Number of Students Per Spring Semester	23				
Award Category (pick one)	☒ No-or-Low-Cost-to-Students Learning Materials ☐ Specific Core Curriculum Courses				
Are you planning on using an OpenStax textbook?	☐ Yes ☒ No				
List the original course materials for students (including title, whether optional or required, & cost for each item)	IT 6103, Essentials of Business and Online Commerce Law, 1st edition, Henry R. Cheeseman, Prentice Hall, ISBN 13: 9780131440470, $224.05, Required. MSIT elective course. IT 6413, Brady Orand and Julie Villarreal, (2011) Foundations of IT Service Management with ITIL 2011, 2nd edition, ISBN 13: 9781466231320, $29, Required. MSIT required course. IT 6423, Embedded, no-cost, but outdated course materials authored by original course designer covering both IT system acquisition/procurement and IT system integration, $100 Estimated value. Required. MSIT required course. IT 6863, 1). Securing SQL Server, 3rd Edition, Protecting Your Database from Attackers by Denny Cherry ISBN: 9780128012758,				

	2015, $49.95; 2). Oracle Privacy Security Auditing: by Arup Nanda & Donald K Burleson (Author) ISBN ISBN-13: 978-0991638697,2014, $59.95, total $110, Required. MSIT elective course. IT 7113, 1). Tableau 10 Business Intelligence Cookbook, ISBN 9781786465634, $50; 2). Information Dashboard Design: Displaying Data for At-a-Glance Monitoring 2nd Edition $40; 3). Show Me the Numbers: Designing Tables and Graphs to Enlighten Second Edition $45, total $135, Required. MSIT elective course.
Requested Amount of Funding	$30,000
Original Per Student Cost	$285.35 Assuming a student take the two required courses and one elective. IT 6413- $29, IT 6423-$100, and the average cost of 3 electives is: 156.35. The total is $285.35 =$29+$100+$156.35.
Post-Proposal Projected Per Student Cost	$0
Projected Per Student Savings	$285.35
Projected Total Annual Student Savings	$39,332.50

Table 1 Student Enrollment in 2018

Course	Spring 18	Summer 18	Fall 2018	Total sections	Total Number
IT 6103	15	15	20	3	50
IT 6413	40 (8,32)	25 (9,16)	60 (25,35)	6	125
IT 6423	44 (11,33)	25 (9,16)	55 (25,30)	6	124
IT 6863			45 (20,25)	2	45
IT 7113	38	15		2	53
Total	137	80	180	19	397

Note: 1). Spring 2018 number are enrollment number up to date. Summer and fall 2018 enrollment number are projected numbers based on past enrollment and growth of our program. 2) the number before the parenthesis the total number of semester in a semester. The numbers inside the parenthesis are the enrollment numbers of each section.

Table 2. Summary of Savings with No-Cost Learning Material

Course	Textbook Used	Cost per Student	Projected Enrollment	Projected Costs
IT 6103	Essentials of Business and Online Commerce Law, 1st edition, Henry R. Cheeseman, Prentice Hall, ISBN 13: 9780131440470	$224.05	50	$11,202.50
IT 6413	Brady Orand and Julie Villarreal, Foundations of IT Service Management with ITIL 2011, 2nd edition, ISBN 13: 9781466231320.	$29	125	$3,625.00
IT 6423	Note: These texts would replace existing embedded materials that are in need of update: IT Systems Acquisition/Procurement: Wilson, R. Mastering Risk and Procurement in Project Management. 2015 ISBN 978-0133837902 IT Systems Integration: Myerson, P.A.Supply Chain and Logistics Management Made Easy, 2015, ISBN 978-0133993349	$100 estimated value of the embedded textbook	124	$12,400.00
IT 6863	1. Securing SQL Server, 3rd Edition, Protecting Your Database from Attackers by Denny Cherry ISBN: 9780128012758, 2015, $49.95 2. Oracle Privacy Security Auditing: by Arup Nanda & Donald K Burleson (Author) ISBN ISBN-13: 978-0991638697,2014, $59.95	$110	45	$4,950.00
IT 7113	1. Tableau 10 Business Intelligence Cookbook, $50, ISBN 9781786465634 2. Information Dashboard Design: Displaying Data for At-a-Glance Monitoring 2nd Edition $40 3. Show Me the Numbers: Designing Tables and Graphs to Enlighten Second Edition $45	$135	53	$7,155.00

Total:			$39,332.50

NARRATIVE

1.1   PROJECT GOALS

The Master of Science in Information Technology (MSIT) is the largest graduate program at Kennesaw State University and currently has over 260 students in the MSIT and affiliated graduate certificate programs. In this project, we propose to take a department-wide effort to replace the textbooks used in five MSIT courses with no-cost-to-students learning materials that offer equivalent or better educational effectiveness.

The impact of this project will be profound. Having graduated more than 500 students since 2009, the MSIT program has been a big contributor to the much-needed IT workforce for the State of Georgia. More importantly, the MSIT program is also a great enabler for underrepresented students and people who want to change their job fields in the middle of their career: Approximately, 34% of students in the MSIT program are female, 60% are minority students, and around 40% of the students entered MSIT without background in computing. High quality curriculum and affordability are two key factors for the success of the MSIT program. We strive to make it more affordable to better support the career–changing students and further boost female and minority participation in our program. We have transformed six MSIT courses using no-cost learning material in previous ALG grants and the responses from our students are overwhelmingly positive. The proposed transformation efforts will not only greatly increase the affordability of our MSIT program, but also better prepare our students for the job market with free, up-to-date and well-designed learning material.

1.2   STATEMENT OF TRANSFORMATION

The traditional textbooks used in four of the five proposed MSIT courses are not only costly, but also not very effective in facilitating student learning. Information technology is a fast changing field and we have to constantly update our curriculum to stay on the cutting edge which involves creating new courses and revising existing courses.

The dynamic nature of the technology imposes several challenges to the traditional textbook model: 1). It's often difficult to find an appropriate textbook for an IT course. The textbooks used in four out of five proposed MSIT courses are professional books which aren't specifically written for higher education. Instructors usually have to create supplemental material such as PowerPoint slides themselves. 2) An IT course may include a wide range of topics that often requires more than one book which significantly increases the textbook costs for students. For example, IT 6863 Database Security and Auditing requires two books and IT 7113 Data Visualization uses three books. IT6423 covers both IT system acquisition and IT system integration, and thus will require at least two texts to replace the current materials. 3). Traditional textbook can't keep up with the fast-evolving pace of technology. For example, a new technology may come out right after a textbook get published and it will take a long time for a new version to reflect the change. Moreover, the new edition will not only cost more but also decrease the resale value of the older edition. 4). Other situations may make a textbook obsolete. For instance, IT6423 system acquisition and integration used to have a well fit textbook provided by the original course author. However, that course author has left the university and is not in a position to update the materials he embedded into the learning management system. Now, for the current round of MSIT course updating, the students in IT6423 probably will be required to purchase two external textbooks.

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Secondly, Web content can better reflect the latest trends and industrial development than the traditional textbooks as technology is changing rapidly, so is the content of Web resources. We are already using contents from the Web as supplemental materials to the textbook. For example, currently in the IT6423 course, many of the student exercises have them search the web for supplemental material covering the latest methods and materials on quickly changing aspects of IT systems acquisition and integration. These

include sourcing strategies, e.g., make, buy, rent, subscribe, cloud, etc. and finding contemporary examples of IT Requests for Proposals (RFPs).

Thirdly, the materials from the Web are generally more interactive. The interactive content will not only engage the students, but also improve their learning experience. For example, IT 6863 Database Security & Auditing uses an interactive online Structured Query Language (SQL) editor (https://www.w3schools.com/sql/trysql.asp?filename=trysql_select_all) for student to review SQL concepts and complete a series of labs to create a project that can be added to their professional portfolio.

Fourthly, developing and assembling a set of learning materials ourselves allow us to better align the course contents not only with the outcomes of each course, but also with the outcomes of MSIT program. For example, in IT 7113, there is no one textbook covering all learning outcomes designed; thus, selected content from three textbooks are needed. Using the materials compiled by the instructor actually better serve the learning outcomes of the course.

Lastly, our project team is well prepared for the proposed transformation. The downsides of using Web resources are that they are often disorganized, may contain inaccurate information, may be changed or deleted without notices. However, our team members are not only subject matter experts in IT fields, but also are proficient educators who on average have more than 10 years teaching experience. We will select, organize and integrate resources from the Web and transform the information into instructionally sound learning materials for the proposed courses. We also created a sustainable plan to periodically review the developed no-cost-to-student learning materials. All courses in the department are reviewed every three years as part of the continuous improvement process. In addition, several team members have either successfully completed ALG grants or are involved in grants from round 1 (round 1, #42, #44, round 2, #119, round 8, #302, round 10, #334, M10). As the results, we have transformed six MSIT courses using no-cost-to-student learning material which is very well received by the students. Building on our previous success and lessons learned, we are well positioned to continue transformation efforts and further increase the cost-saving benefits to the students in our program.

1.3   TRANSFORMATION ACTION PLAN

With a coordinated effort, our team of investigators plan the following activities to transform the proposed MSIT courses using no-cost-to-student learning materials.

- Research and identify no cost readings for each of the learning modules in each course. The reading list includes both required readings and optional readings. All of these readings will be publicly accessible, free to use, or openly licensed.
- Research and identify no cost materials that can be shared across the courses.
- Develop study guides and lecture notes for students' use to review course content and key learning points.
- Adopt or develop all assignments, exercises and lab materials that are no cost to students to replace the ones in the textbooks.
- Develop test banks to replace the ones in the textbooks if necessary.
- Update the syllabus to include major resources and no cost materials.
- Re-develop the proposed courses in our learning management system, D2L Brightspace.
- The developed course material will be organized based on the template provided by ALG and will be made available to public for adoption

The responsibilities of each investigator are described in the table below.

Investigator Responsibilities

Primary Investigator	Course	Responsibilities
Dr. Lei Li	IT 6413	Project Lead. Subject Matter Expert and developer; instructor of record
Dr. Rebecca Rutherfoord	IT 6103	Subject Matter Expert and developer; instructor of record
Dr. Svetlana Peltsverger	IT 6863	Subject Matter Expert and developer; instructor of record
Dr. Richard Halstead-Nussloch	IT 6423	Subject Matter Expert and developer; instructor of record
Dr. Guangzhi Zheng	IT 7113	Subject Matter Expert and developer; instructor of record
Dr. Zhigang Li	All Courses	Provide Instructional Design and Hosting Support.

1.4   QUANTITATIVE AND QUALITATIVE MEASURES

We plan to assess the effectiveness of our proposal in two ways: 1) qualitatively, we will design a survey and gather inputs from the students after they used the no-cost learning material; 2) quantitatively, we will compare students' performance data gathered from sections using traditional textbooks and sections using no-cost learning material.

The investigators will collect student performance data such as pass rates from the five proposed courses in 2017. This data will be used as a baseline for comparison of student performance in courses with alternative no cost material. The detailed assessment plan is shown in the table below.

For each of the measurement, the investigators are going to conduct two levels of analysis:

1. Comparing them to the preset goals. 80% is the aimed passing rate as the courses involved are graduate courses.

2. Comparing them to those from past offerings where costly textbooks were used. We will obtain the data from the sections last taught using the textbooks.

Project Assessment Plan

Source	Description
Student performance measures	This data is from the overall class performance based on the grading of student works. Metrics include: • Class average, grades distribution, pass rate for each grading item. • Overall letter grades distribution, pass rate, withdraw rate, and fail rate. • Percentage of students meeting or exceeding learning outcomes
Specific survey on no-cost learning materials.	The survey will be distributed at the end of the semester to collect student feedback. It consists of a mixture of quantitative and qualitative measures including: • Student perception and attitude toward no cost materials • Quantitative ratings of the no cost materials used in this course • Qualitative comments and suggestions
Student evaluation of the instructor	Formal student evaluation of the instructor can also provide information about teaching effectiveness using no cost materials. This evaluation is based on standardized forms for every course.

1.5 TIMELINE

The major milestones of the proposal are illustrated in the table below.

Project Major Milestone

Milestone dates	Milestone
03/01/2018	1). Complete baseline gathering of statistics.
05/05/2018	1). Complete course level materials redesign (mainly course syllabus) for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113. 2). Complete project progress report.
07/15/2018	1). Complete the module level development including reading, lecture notes, video, exams, labs, and assignments for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113.
07/30/2018	1). Update the D2L Brightspace course sites are updated using the developed no cost learning material for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113. 2). Complete project progress report.
08/12/2018	1). A survey instrument to collect students' feedback on the effectiveness of the no cost materials are created
12/02/2018	1). Complete the course offering for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113. 2). Complete the survey data collection for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113. 3). Complete student evaluation for IT 6103, IT 6413, IT 6423, IT 6863, and IT 7113.
12/15/2018	1). Complete data collection and analysis for the whole project. 2). Compile and submit project final report.

1.6 BUDGET

The funding mainly compensates our team of investigators' work and activity beyond normal teaching load or other job responsibilities in order to successfully complete the project. The role each PI and the corresponding compensation are listed as follows. For each proposed course, course architects approximately will spend at least 80 hours in developing the no-cost learning material and instructor of records, will spend 20 hours in course assessment. Instructional support will devote at least about 30 hours in assisting course architects. Thus, we request the budget of this project as follows.

Budget for Investigators Compensation

Team Member	Role	Investigators compensation
Dr. Lei Li	IT 6413 developer & instructor	$5000
Dr. Rebecca Rutherfoord	IT 6103 developer & instructor	$5000
Dr. Svetlana Peltsverger	IT 6863 developer & instructor	$5000
Dr. Richard Halstead-Nussloch	IT 6423 developer & instructor	$5000
Dr. Guangzhi Zheng	IT 7113 developer & instructor	$5000
Dr. Zhigang Li	All courses support	$1,000

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Investigators compensation: $5000 *5 + 1,000 = $26,000

Travel & Other Expense: $2500. $800 is the expense for two team members attend the Kickoff Meeting at Middle Georgia State University in Macon, GA. $1700 is budgeted for attending another conference.

Equipment (computers and tablets): $1500

Total Budget: $30,000

Only open source software or free software will be used in this project thus there is no additional spending on software.

1.7   SUSTAINABILITY PLAN

The IT department implements a course architect system for all courses. Each course is assigned to a faculty as the course architect who is responsible for the content of the course and teaches the course regularly. All of our investigators except the instructional designer is a course architecture for the corresponding courses. Our team member will develop the no-cost-to-student learning material for the proposed courses and teach the courses for the first time using the new material. As a course architect, our team member will also make sure a course is continuously taught using developed no-cost learning material in the future semesters even the course might have a different instructor.

Moreover, the developed course content is not only available at learning management system, but also archived at department server. It's also our department policy that there are at least two faculty who regularly teach a course. This further ensures the developed learning material will be continuously used and updated even there is a personnel turnover.

The IT department also have well established course continual improvement plan. Each course is assessed each semester after being taught, and a course will be formally evaluated and updated every three years or earlier if the need arises. A course architect is in charge of those assessment efforts. Thus, we are committed to continuously update the no-cost learning material in the proposed courses based on research, assessment results and feedback from students and alumni. As shown in their support letters, our transformation efforts also have strong supports from our department chair and the dean of our colleges which further ensure the sustainability of our transformation efforts.

1.8   REFERENCES & ATTACHMENTS

Two letters of support from the Dean of College of Computing and Software Engineering and the chair of Information Technology Department are attached.