Affordable Materials Grants, Round 20:

Continuous Improvement Grants

(Fall 2021-Fall 2022)

Proposal Form and Narrative

# Notes

* The proposal form and narrative .docx file is for offline drafting and for our review processes. Submitters must use the online Google Form for proposal submission, including uploading this document.
* The only way to submit the official proposal is through the Google Form. The link to the online application is on the [Round 20 RFP Page](https://www.affordablelearninggeorgia.org/about/rfp_r20).
* The italic text provided below is meant for clarifications and can be deleted.

The Round 20 Kickoff will include an asynchronous training module, required for all team members to complete, followed by the synchronous Kickoff Meeting on December 10, 2021 from 1pm-4pm. At least two team members from each awarded team (unless the award is for one individual) are required to attend the synchronous Kickoff Meeting.

# Applicant and Team Information

*The* ***applicant*** *is the proposed Project Lead for the grant project. The* ***submitter*** *is the person submitting the application (which may be a Grants Officer or Administrator). The submitter will often be the applicant—if so, just leave the submitter blank.*

|  |  |
| --- | --- |
| Requested information | Answer |
| Institution | Kennesaw State University |
| Applicant name | Hossain Shahriar |
| Applicant email | [hshahria@kennesaw.edu](mailto:hshahria@kennesaw.edu) |
| Applicant position/title | Associate Professor of Information Technology and BSIT/BASIT Co-ordinator |
| Submitter name | Hossain Shahriar |
| Submitter email | [hshahria@kennesaw.edu](mailto:hshahria@kennesaw.edu) |
| Submitter position/title | Associate Professor of Information Technology and BSIT/BASIT Co-ordinator |

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. Do not include prefixes or suffixes such as Ms., Dr., Ph.D., etc.

|  |  |  |
| --- | --- | --- |
| Team member | Name | Email address |
| Team member 1 | Donald Privitera | [dprivit2@kennesaw.edu](mailto:dprivit2@kennesaw.edu) |
| Team member 2 | William Forsyth | [wforsyt2@kennesaw.edu](mailto:wforsyt2@kennesaw.edu) |
| Team member 3 | Richard Halstead-Nussloch | [rhalstea@kennesaw.edu](mailto:rhalstea@kennesaw.edu) |
| Team member 4 | Jamie Jamison | [Jjamiso9@kennesaw.edu](mailto:Jjamiso9@kennesaw.edu) |
| Team member 5 |  |  |

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

|  |
| --- |
| Garima Banerjee; [gbanerje@kennesaw.edu](mailto:gbanerje@kennesaw.edu)  Michael Handlin; [mhandlin@students.kennesaw.edu](mailto:mhandlin@students.kennesaw.edu) |

# Project Information

| Requested information | Answer |
| --- | --- |
| Type of Project | * ***Revision of open educational resources (OER) used in existing courses*** * *Creation of ancillaries for existing OER courses* * *Replacement of current OER in courses with new/better OER* * *Other* |
| Requested Amount of Funding  *$10,000 maximum total award per grant* | *$10,000* |
| Course Titles and Course Numbers | IT 3203 – Introduction to Web Development  IT 4323 – Data Communications and Networking  IT 4843 – Ethical Hacking for Effective Defense  IT 4683 – Management of IT and HCI |
| Final Semester of Project | * *Fall 2022* |
| Currently Existing Resource(s) to be Revised/Ancillaries Created  *Please provide a title and web address (URL) to each of the currently existing resources that you are revising, creating new ancillary materials for, or replacing. If replacing, please include a title and web address (URL) to the new OER as well.* | IT 3203 – Introduction to Web Development; URL - not available, the prior developed materials are in D2L currently.  IT 4323 – Data Communications and Networking; URL- <http://ksuweb.kennesaw.edu/~mhan9/ALG/it4323/4323.html>  IT 4843 – Ethical Hacking for Effective Defense; URL - <http://ksuweb.kennesaw.edu/~hshahria/IT4843/IT4843.html>  IT 4683 – Management of IT and HCI; URL - <https://ksuweb.kennesaw.edu/~rhalstea/ALG/IT4683/index.html> |

# Project Goals

*In at least one paragraph, describe your project’s goals and what materials will be created or revised.*

The Department of Information Technology at Kennesaw State University (KSU) has taken department-wide efforts to adopt open educational resources (OER) in both undergraduate and graduate courses and housing both Z-Degrees since 2020. Many thanks to strong support from Affordable Learning Georgia (ALG), all of the courses from BSIT program now has replaced their textbooks with no-cost-to-student OER learning materials. Information technology is an ever-changing field; it is very important to keep our courses updated. The degree program periodically undergoes curriculum revision every three years. Out of this, we are planning to update 4 courses many of them have been updated more than 2 years ago and need to be aligned with current industry best practices and trends as follows:

* IT 3203 – Introduction to Web Development;
* IT 4323 – Data Communications and Networking;
* IT 4843 – Ethical Hacking for Effective Defense.
* IT 4683 – Management of IT and HCI;

As part of our department ALG strategic plan, we propose to create OER materials for these four courses to keep up the BSIT Z-Degree. Our assigned faculty to develop these courses have already identified the preliminary sources based on the learning objectives for developing OER materials. We are striving to make OER resources accessible to all students, as a result, further effort is needed to make developed slides, lectures, test questions compliant with accessibility criteria enforced by Digital Learning Innovation at KSU. The overall goals of our project are listed as follows. The specific plan about each individual course is illustrated in the action plan section.

* Develop new OER materials for courses to be part of BSIT Z Degree
* Ensure all developed OER materials are free from any accessibility issues;
* Develop new OER materials based on course learning outcomes;
* Develop new ancillary material such as assignments, lab material, and test banks;
* Use a department provided layout template to make sure OER material in each course has similar look and feel;
* Ensure all course materials including lectures, slides, resources comply with the specific accessibility standards defined by ALG ;

Create a course package that can be imported into D2L Brightspace, the course management system used by the University System of Georgia

# Action Plan

*Describe the tasks needed to complete the project in as much detail as possible. If this application has more than one team member, include the major roles for each person and which tasks this role is assigned. Estimate the amount of time (e.g. number of hours) each task will take. Include plans for open licensing and plans for making your materials accessible. Indicate if you are using other platforms in addition to the repository to host your created materials.*

Our project team is composed of five faculty developers, one instructional designer, and one student assistant. One of the faculty developers, Dr. Hossain Shahriar, assumes the role of the team lead. The detailed project plan is listed as follows.

1. *Project Coordination*. Dr. Hossain Shahriar, who has led several ALG grants from previous rounds, will coordinate the activities in this project to ensure its successful completion. The activities include making a project plan once funded, monitoring project progress, coordinating with university grant office on project budget and expense, facilitating coordination among faculty developers, instructional designer, and student, collecting students’ feedback on the updated OER material and writing semester status report and final report. Dr. Shahriar is estimated to work 30 hours as a project lead role.
2. *Accessibility Compliance*. Ms. Garima Banerjee, an instructional designer at KSU will take a lead role to ensure OER material in the proposed courses comply with the accessibility standards defined by ALG. The faculty developers, Professors Privitera, Forsyth, Jamison, and Dr. Halstead-Nussloch, have completed an Americans with Disabilities Act (ADA) compliance training workshop offered by KSU Digital Learning Innovation center. Ms. Paweena will perform the following activities:

* Research the ALG accessibility requirements specified by ALG (2 hours);
* Conduct accessibility training for faculty developers at the beginning of the project (3 hours);
* Work with faculty developers on accessibility-related issues during the project (15 hours).

The Digital Learning Innovations center of KSU provides manual captioning service for video lectures 15 minutes or less in length. All faculty developers are advised to consider available captioning service when recording their lectures. This will significantly reduce the time faculty or Ms. Garima spent on accessibility compliance issues. Ms. Garima is estimated to work 20 hours in this project.

1. *Student Assessment*. Mr. Michael Handlin’s role is to provide feedback on the selected OER material from a student perspective. Mr. Handlin graduated from BS in Computer Science (BSCS) program and currently is enrolled in the MS in Information Technology (MSIT) program at KSU. He has the technical background and experience to evaluate a student. A complete learning module from each proposed course will be given to Mr. Handlin. Mr. Handlin will study the assigned module as a student and provide feedback on the following perspectives:

* Is the OER material user friendly (presentation and structure)?
* Is the content material easy to follow (an appropriate level of difficulty)?
* Is the OER material sufficient for me to complete a quiz/discussion/assignment in this module?

By the estimate, Mr. Handlin will spend 4 hours per course. Total of 20 hours in this project.

1. *Publication of OER material*. All OER material for the proposed courses will be hosted on a public website with a Creative Commons Attribution license. A course package that can be imported into the D2L Brightspace course management system will be available for download for each proposed course.
2. *Action Plan for IT 3203 – Introduction to Web Development*

Faculty developer – Professor Jamie Jamison. Estimated time working on this course: 50 hours.

This course introduces the fundamental concept of website design using HTML, CSS, JavaScript and PHP languages. In this project, we would like to retain the no cost learning material by providing additional materials and resources that enhance the learning experience and update the latest progress in this domain to further benefit our students.

The detailed list of modules is as follows:

* Module 1: “An Introduction to World Wide Web and Web Development”
  + This module introduces the world wide web including a brief history, key terms and fundamentals of Web Development. Some of the identified resources will include [Introduction to world wide web,](https://ccm.net/contents/849-introduction-to-the-world-wide-web) [Introduction to Web development,](https://developer.mozilla.org/en-US/docs/Web/Guide/Introduction_to_Web_development) [Web development basic concepts](https://www.youtube.com/watch?v=FXqTHsPaY0A)
* Module 2: “Getting Started with HTML”
  + This module consists of the absolute basics of HTML and HTML snippets/examples and the foundation of web design. Some of the identified resources are [Getting started with HTML](https://developer.mozilla.org/en-US/docs/Learn/HTML/Introduction_to_HTML/Getting_started), [Fundamentals of HTML, XHTML, and CSS](https://www.agitraining.com/html/tutorials/fundamentals-of-html-xhtml-css), [Create and View a Web Page on Your Computer](https://www.codecademy.com/articles/local-web-page), [HTML Tutorial for Beginners Video](https://www.youtube.com/playlist?list=PLr6-GrHUlVf_ZNmuQSXdS197Oyr1L9sPB)
* Module 3: “Advanced Concepts of HTML”
  + This module consists of some advanced HTML concepts such as forms, lists and tables. Some of the identified resources are [Your first form](https://developer.mozilla.org/en-US/docs/Learn/Forms/Your_first_form), [HTML Web Forms Tutorial For Coding Beginners](https://html.com/forms/), [Basic Form input, label and button elements](https://www.youtube.com/watch?v=2JrGepWlUvg), [HTML Table Basics,](https://developer.mozilla.org/en-US/docs/Learn/HTML/Tables/Basics) [Lists Bring Order To Web Pages](https://html.com/lists/), [Ordered and Unordered lists](https://www.youtube.com/watch?v=09oErCBjVns)
* Module 4: “Cascading Style Sheets (CSS) and Web Images”
  + This module introduces CSS; the use of common selectors and web images. Several resources to be included are [CSS Introduction](https://www.w3schools.com/css/css_intro.asp), [How Do We Include CSS In Our HTML](https://www.youtube.com/watch?v=YNSnugnQYiI&list=PL0eyrZgxdwhwNC5ppZo_dYGVjerQY3xYU&index=7), [GIF, PNG, JPG or SVG. Which One To Use?](https://www.sitepoint.com/gif-png-jpg-which-one-to-use/) [Choosing the Right Image File Type for your Site](https://www.youtube.com/watch?v=RYZvdDh_JD0)
* Module 5: “HTML Scripting with JavaScript and jQuery”
  + This module consists of an introduction to JavaScript as well as a few more advanced concepts such as loops, DOM and in Introduction to jQuery. Some of the identified updated resources are [Writing Your First JavaScript Program](https://www.oreilly.com/library/view/javascript-jquery/9781491948583/ch01.html), [Introduction to JavaScript](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide/Introduction), [Introduction to the DOM](https://developer.mozilla.org/en-US/docs/Web/API/Document_Object_Model/Introduction), [Getting started with jQuery,](https://www.khanacademy.org/computing/computer-programming/html-js-jquery/jquery-intro/pt/getting-started-with-jquery) [jQuery Tutorial for Beginners Video](https://www.youtube.com/watch?v=hMxGhHNOkCU), [Learn DOM Manipulation In 18 Minutes](https://www.youtube.com/watch?v=y17RuWkWdn8), [Learn JavaScript in just 5 minutes Video](https://www.youtube.com/watch?v=c-I5S_zTwAc)

Professor Jamie Jamison will synthesize the content from those web resources and organize them into OER format. In addition, she will record lectures for each module and create ancillary material such as test bank, assignment, and lab. She will spend about 25 hours on this task. Also, the faculty developer will work closely with the Department librarian to develop an online Wiki with all the available resources of the course. Students will be able to use this Wiki to find free and open-source materials to develop a team project.

1. *Action Plan for IT 4323 – Data Communications and Networking*

Faculty developer – Professor Donald Privitera. Estimated time working on this course: 50 hours.

This course introduces fundamentals of data communication techniques and common protocols and management from IT perspectives.

* + *Creation of new OER material*. [specific plan showing which module(s), which source of information with hyperlink].

The current course needs additional materials added throughout to address learning style diversity. PowerPoint slides will be added to all modules to deliver information more graphically as the course materials are presently text intensive. Image files are searchable on <https://google.com> and other search engines and salient materials will be identified and integrated into course materials. This will help those students who learn best with visual aids. In addition, YouTube videos (<https://youtube.com>) will be added to all modules to supplement course content to better assist students who learn best with audio/visual learning styles.

Professor Privitera will synthesize content from web resources and organize them into OER format. In addition, he will enhance course evaluation materials such as enhanced quiz and test banks leveraging more ordering and matching type questions, and he will develop enhanced hands-on lab assignments utilizing industry standard tools such as GNS3 (<https://gns3.com>) to help students with predilections for learning by doing. He will spend about 50 hours on this task. Also, the faculty developer will work closely with the Department librarian to develop an online Wiki with all the available resources of the course. Students will be able to use this Wiki to find free and open-source materials to supplement course assignments.

1. *Action Plan for IT 4843 – Ethical Hacking for Effective Defense*

Faculty developer – Professor William Forsyth. Estimated time working on this course: 50 hours.

Security is an ever present concern to modern businesses, especially in recent years as we have seen a dramatic increase in the number of successful cyber attacks. This course is an in depth study of the methods and applications used by both ethical and non-ethical hackers. The course covers terminology and methodology supported by several case studies and hands on activities.

*Creation of additional OER material.* Additional open-source materials will be added to the course, the detailed list of modules is as follows:

* Module 1: Introduction to Ethical Hacking
  + This module introduces ethical hacking. It explains the types of ethical hacking, what ethical hackers are allowed to do, and what laws are specifically applicable to ethical hackers. Some example resources are below.
  + <https://www.youtube.com/watch?v=7RT18TFJvpo>
  + [Cyber security bootcamp](https://www.simplilearn.com/introduction-to-cyber-security-course?referrer=product-category)
* Module 2: Protocol Attacks, finger printing and foot printing
  + This module consists of a brief IP review followed by a discussion of what to consider when planning for security. It then continues into a discussion of some examples of well-known protocol attacks. It then introduces the concepts of fingerprinting and foot printing and uses examples to show how they can be used to gain information about a target. Some of the example resources to be used are as below:
  + <https://www.youtube.com/watch?v=aDUWuoHdY14>
  + <https://www.youtube.com/watch?v=OU-A2EmVrKQ&list=PLW8bTPfXNGdC5Co0VnBK1yVzAwSSphzpJ>
  + <http://en.wikipedia.org/wiki/Stream_Control_Transmission_Protocol>
  + <https://www.utc.edu/sites/default/files/2021-04/course-paper-5620-attacktcpip.pdf>
  + <https://user.eng.umd.edu/~danadach/Security_Fall_19/16_TCP_Attack.pdf>
  + <https://www.vox.com/2014/6/19/18076318/heartbleed>
* Module 3: Malicious Logic, Introduction to encryption
  + This module covers many common types of malicious logic from different types of viruses to more modern malware such as ransomware. Several case studies are used to illustrate how these programs work. This module also contains an introduction to encryption algorithms. It covers the basic types and how to make them strong. Some of the example resources to be used are as below:
  + <https://www.youtube.com/watch?v=rtdrEwSBHKk>
  + <https://www.youtube.com/watch?v=Bn36zoApLm4>
  + <https://www.youtube.com/watch?v=7YRyFMv-tY8>
  + <https://www.youtube.com/watch?v=88jkB1V6N9w&ab_channel=Computerphile>
  + <https://commons.wikimedia.org/w/index.php?curid=51026079>
  + <https://cdn.securelist.com/files/2017/05/wannacry_05.png>
  + <https://securelist.com/blog/incidents/78351/wannacry-ransomware-used-in-widespread-attacks-all-over-the-world/>
  + <https://en.wikipedia.org/w/index.php?curid=54032765>
* Module 4: Denial of service, Web cookies
  + This module covers an overview of both DOS and DDOS attacks, how they work, and what, if anything, can be done to combat them. Additionally, web cookies and their respective vulnerabilities are also covered. Some of the example resources to be used are as below:
  + <https://www.trustwave.com/en-us/resources/blogs/spiderlabs-blog/hoic-ddos-analysis-and-detection/>
  + <https://www.youtube.com/watch?v=XiFkyR35v2Y&ab_channel=Computerphile>
  + <https://www.paloaltonetworks.com/cyberpedia/what-is-a-denial-of-service-attack-dos>
  + <https://us-cert.cisa.gov/ncas/tips/ST04-015>
  + [https://en.wikipedia.org/wiki/File:Tcp\_normal.svg#metadata](https://en.wikipedia.org/wiki/File:Tcp_normal.svg)
  + <https://en.wikipedia.org/wiki/File:Tcp_synflood.png>
  + <https://www.cloudflare.com/learning/ddos/http-flood-ddos-attack/>
  + <https://www.noction.com/blog/ddos-amplification-attacks>
  + <http://www.csl.mtu.edu/cs4411.ck/www/NOTES/process/fork/create.html>
  + <https://commons.wikimedia.org/w/index.php?curid=1577024>
  + <https://commons.wikimedia.org/w/index.php?curid=32263731>
* Module 5: Social engineering
  + This module introduces and explains social engineering attacks. It covers the mythologies and strategy of how social engineering attacks are carried out and potential ways they can be identified and combated. It covers phishing, spear phishing water holing, baiting, and tailgating. Some of the example resources to be used are as below:
  + <https://www.youtube.com/watch?v=8EzrvuatXC8>
  + <https://www.youtube.com/watch?v=IKIAP-3orDE#action=share>
  + <https://www.youtube.com/watch?v=zA50pSZcesc>
  + <https://www.scmagazine.com/home/security-news/vulnerabilities/pen-test-gone-awry-coalfire-staffers-arrested-for-burglary/>
* Module 6: Enumeration
  + This module covers the topic of enumeration, and coverers several common protocols that can be used to potentially gain useful information about a system. It covers several well known applications along with strategy and tactics. Some of the example resources to be used are as below:
  + <https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2008-R2-and-2008/cc727740(v=ws.10)?redirectedfrom=MSDN>
  + [https://resources.infosecinstitute.com/what-is-enumeration/#gref](https://resources.infosecinstitute.com/what-is-enumeration/)
* Module 7: Buffer Overflow attacks and Operating System Security
  + This module covers in detail the method of attack knows as a buffer overflow. It then continues with a discussion of operating system security. It focuses on the planning, installation, configuration, update, and maintenance phases of operating system security. Some of the example resources to be used are as below:
  + <https://www.youtube.com/watch?v=ahUBv0Nvk1Y>
  + <https://www.youtube.com/watch?v=iZTilLGAcFQ>
  + <https://www.youtube.com/watch?v=8dcUkJYn-Mk>
  + <https://www.youtube.com/watch?v=1S0aBV-Waeo&ab_channel=Computerphile>
  + <https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-xp/bb490890(v=technet.10)?redirectedfrom=MSDN>
* Module 8: Encryption basics
  + This module carries on from module 3 to cover specific encryption algorithms in use today. The module covers in detail RSA public key/private key encryption and AES encryption and its modes. Some of the example resources to be used are as below:
  + <https://www.youtube.com/watch?v=cZ543_0bjbw>
  + <https://www.youtube.com/watch?v=Oq4oSe_Thpk>
  + <https://crypto.stackexchange.com/questions/5333/difference-between-stream-cipher-and-block-cipher>
  + <https://www.geeksforgeeks.org/difference-between-block-cipher-and-stream-cipher/>
  + <https://www.tutorialspoint.com/cryptography/advanced_encryption_standard.htm>
  + <https://www.highgo.ca/2019/08/08/the-difference-in-five-modes-in-the-aes-encryption-algorithm/>
* Module 9: Embedded operating systems
  + This module introduces and describes the embedded operating systems. It goes on to describe several well known examples and describes their primary purpose as well as any notable security features (or lack thereof). The module is split into two parts, embedded operating systems for industrial use, and embedded operating systems for home use. Some of the example resources to be used are as below:
  + <https://www.youtube.com/watch?v=Sbb1vUJKxZg&ab_channel=ProfessorMesser>
  + <https://www.wired.com/2015/07/hackers-remotely-kill-jeep-highway/>
  + <https://www.darkreading.com/vulnerabilities-threats/researcher-successfully-hacked-in-flight-airplanes---from-the-ground>
* Module 10: Web application security
  + This module is a follow on to module 4, where it continues to describe the methods of attack that can be used against a web application. It covers such attacks as SQL injection, cross site scripting, and cross site request forgery. Some of the example resources to be used are as below:
  + <https://www.youtube.com/watch?v=z7eXjBvB2B4&ab_channel=securityadvisors>
  + <https://www.youtube.com/watch?v=1Un65FvPDBg&ab_channel=BHCCFaculty>
  + <http://www.theregister.co.uk/2008/01/21/riaa_hacktivism/>
* Module 11: Wireless security
  + This module introduces the topic of wireless security. It covers an overview of wireless technology with a focus on WiFi and its associated protocols. It also covers the history and most common methods for wireless security including WEP, WPA, and WPA2 with in depth analysis of the potential flaws in each. Some of the example resources to be used are as below:
  + <https://www.youtube.com/watch?v=UgQM0rVDIQE&ab_channel=Computerphile>
  + <https://resources.infosecinstitute.com/topic/13-popular-wireless-hacking-tools/#gref>
  + <https://www.tutorialspoint.com/wireless_security/wireless_security_hacking_methodology.htm>
  + <https://www.youtube.com/watch?v=myRgxB91cNI&ab_channel=Smiley>
  + <http://www.netstumbler.com/2013/01/18/wi-fi-security-the-rise-and-fall-of-wps/>
  + <https://www.pentestpartners.com/security-blog/hack-demo-video/hacking-a-home-and-a-car-with-chromecast-and-alexa/>
* Module 12: Cryptography
  + This module is a follow on to module 8. It covers an in depth look of the history of several well known cryptographic algorithms along with their strengths and weaknesses. It also covers several well know hashing algorithms and compares and contrasts them. Some of the example resources to be used are as below:
  + <https://www.csoonline.com/article/3542630/hashcat-explained-why-you-might-need-this-password-cracker.html>
  + <https://hashcat.net/hashcat/>
  + <http://www.proftpd.org/>
  + <https://www.tutorialspoint.com/cryptography/attacks_on_cryptosystems.htm>
* Module 13: Intrusion Detection and prevention
  + This module covers the topics of intrusion detection and prevention. It covers the methodologies and design of intrusion detection and prevention systems such as sensor placement, honey pots and DMZs as well as introduces several well known applications. Some of the example resources to be used are as below:
  + <https://www.snort.org/resources>
  + <http://www.symantec.com/connect/articles/network-intrusion-detection-signatures-part-one>
  + <http://www.symantec.com/connect/articles/network-intrusion-detection-signatures-part-two>
  + <http://lifehacker.com/the-most-important-security-settings-to-change-on-your-1573958554>
  + <http://www.cisco.com/c/en/us/support/docs/ip/access-lists/13608-21.html#anc72>
  + <https://arstechnica.com/gadgets/2019/10/how-a-months-old-amd-microcode-bug-destroyed-my-weekend/>
  + <http://csrc.nist.gov/publications/nistpubs/800-94/SP800-94.pdf>

*Creating video tutorials, test banks, quizzes, assignments, projects and discussions for the course*. Professor Forsyth developer will synthesize the content from those web resources and record video lectures for each module to facilitate student learning. In addition, ancillary material such as test bank, quizzes, assignments, projects, and discussions will be developed based on the content in the learning modules. Professor William is estimated to spend 20 hours on this task.

1. *Action Plan for IT 4683 – Management of IT and HCI*- Faculty Developer, Dr. Richard Halstead-Nussloch, Estimated time: 50 Hours

This course provides a study of the information needs in a formal organization and the information technology (IT) systems required to meet those needs along with ensuring good human-computer interaction (HCI). In this continuous-improvement ALG project, we propose to update the no cost, OER learning material added to the course during the prior textbook-replacement ALG project, enhance accessibility, add a sixth learning module for a literature-review research annotated bibliography, and update the case study to be current. All these project tasks will be performed to improve accessibility, enhance the learning experience, and update the course to include the latest OERs to further benefit our students.

The following are trustworthy sources of OER and public-domain education resources pertaining to management of IT and HCI:

<https://cio-wiki.org/wiki/Main_Page> The CIO-Wiki material is available under a Creative Commons Share Alike License. It covers classical (e.g., IT operations) and contemporary (e.g., managing the cloud) topics in the management of IT. As of October 2021, it has over 4,750 topics. The CIO-Wiki covers all learning outcomes for IT4683. In reviewing its prior use in our IT curriculum, accuracy and scope are at least 85%.

<https://www.educause.edu/> The EDUCAUSE is the website and public repository for the largest IT community of practice devoted to IT in support of higher education. The site curates crowd-sourced and crowd-peer-reviewed materials across the full range of topics covering management of IT for higher education under a Creative Commons Attribution-Share Alike Public License. An additional advantage for using EDUCAUSE.edu for an academic course is that our students have direct experience of all issues discussed, as they are enrolled in our university. KSU is a member of EDUCAUSE, which means that faculty can be authenticated for early access (prior to official publication date), but once the publication date has been reached, the material is available on the public website. EDUCAUSE.edu covers all learning outcomes for IT4683. In reviewing its prior use in our IT curriculum, accuracy and scope are at least 90%.

<https://www.wikipedia.org/> The Wikipedia website has a wide range of mostly acceptable articles and sub-portals covering the management of IT and HCI available under a Creative Commons Attribution-Share Alike Unreported License. A distinct advantage is that technical language and IT jargon is reduced. Examples of clear communication with lay personnel is exceedingly important to success in managing IT. Wikipedia is most useful for the more general learning outcomes for IT4683. In reviewing its prior use in our IT curriculum, accuracy and scope for Wikipedia are at least 70% and average around 85%. Past group projects in this and similar IT classes have corrected and/or enhanced Wikipedia articles covering IT issues.

Varied government websites including, e.g., NIST.gov, usability.gov, dau.edu, data.gov, code.gov, and <https://gta.georgia.gov/> have a wide range of public-domain materials covering the management of IT and HCI. A distinct advantage for many of our IT students is that they work for a branch of the Federal or State of Georgia, or county, or municipal government or an organization that does business with the Federal Government or State of Georgia. Material from government websites covers all learning outcomes for IT4683. In reviewing its prior use in our IT curriculum, accuracy and scope are at least 90%.

IT industry websites contain many reports, guides, tutorials, white papers, etc. that are pertinent and valuable to the management of IT. Terms, conditions, and licenses vary widely and if allowed, pertinent materials from industry sites (e.g., ibm.com) are linked to in the course materials. In reviewing its prior use in our IT curriculum, accuracy and scope are at least 80%.

Utilizing the above OER sources along with the existing course OERs and ancillary materials, we will update and improve IT4683 by performing the following tasks:

* + - Update all OER materials in the current learning modules to be current and contemporary.
    - Update the Team Case-Study Project in Learning Module 5 to include options for current management of IT and HCI situations, e.g., managing IT for pandemic response, HCI in virtual learning, etc.
    - Create a Literature-Review Research Learning Module 6 for the IT4683 course that will have each student produce an annotated bibliography (see, e.g., <https://guides.library.cornell.edu/annotatedbibliography>) with five or more entries covering extra readings they researched and read in the course. This module and the annotated bibliography will run throughout the course and student engagement (KSU Quality Enhancement Plan see <https://engagement.kennesaw.edu/>) by
      * Providing an undergraduate research experience by performing a focused literature review
      * Enhancing the individual’s personalized engagement with the research literature in IT
      * Providing a process and an asset (annotated bibliography) each student can use for life-long learning and professional development
      * Including reflective learning practices in terms of compiling recommendations and lessons learned during the literature-review process
    - Update all the materials and modules for accessibility.

Working closely with the Department Librarian and the Professional Instructional Designer, Dr. Halstead-Nussloch will synthesize the content from current and updated OER web resources and organize them into OER formatted notes to update the course and improve accessibility of the modules. In addition, he will develop reading overviews and notes for each module and create ancillary material as appropriate such as assignments, lab exercises, projects, and briefing slides. He will spend about 50 hours on these tasks. Students will be able to use these materials, along with additional materials they find in their literature-review research in their case-study team project.

# Timeline

*Provide a project timeline aligned with the action plan above. Include major milestones and deadlines, keeping in mind your selected Final Semester.*

In the section, we first describe the overall project timeline. The timeline for each proposed course is listed separately.

1. *Overall Project Timeline – Responsible personal: Dr. Hossain Shahriar*
   1. *12/1/2021*. Complete accessibility training and review of existing OER material.
   2. *5/15/2022*. a) Complete the development of accessibility compliant OER material; b) Complete the project progress report.
   3. *8/15/2022*. a). Complete the development of accessibility compliant OER ancillary material such as quizzes, test banks, assignment and/or labs; b) Complete student review of the OER material; c). Develop an online survey instrument for collecting students’ feedback after courses are taught using updated OER material; d) Complete the project progress report.
   4. *12/15/2022*. a). Complete course offerings with updated OER material. b). Complete the course survey on updated OER material; c). Publish the updated OER material in a public website and create a course package that can be imported into D2L. d). Compile and submit the final project report.
2. *Timeline for IT 3203– Introduction to Web Development- Responsible personal: Professor Jamie Jamison*
3. *4/15/2022*. Complete accessibility training. Complete modules.
4. *7/15/2022*. a). Complete the development of accessibility compliant OER material b). Complete expanding modules 10 – 13. c). Complete complying all OER materials and accessibility to ALG standards.
5. *8/15/2022*. a). Complete the development of accessibility compliant OER ancillary material such as quizzes, test banks, and assignment; b). Conduct student review of the OER material; c) Improve the course materials based on the received feedback.
6. *12/15/2022*. a). Complete course offerings with updated OER material. b). Collect students’ feedback on the course; c). Publish the updated OER material in a public website and create a course package that can be imported into D2L.
7. *Timeline for IT 4323 – Data Communications and Networking - Responsible personal: Professor Donald Privitera*
8. *4/15/2022*. a). Complete/review accessibility training and requirements. b). Review the content of OER material in existing modules. c). check for accessibility issues of existing modules.
9. *7/15/2022*. Complete the development of accessibility compliant OER material for six new learning modules. The existing OER material will be updated and comply with accessibility standards set by ALG.
10. *8/15/2022*. a). Complete the development of accessibility compliant OER ancillary material such as quizzes, tests, and labs; b) Perform the learning module student review by Michael Handlin. Improve the module and other modules based on the feedback received from Michael.
11. *12/15/2022*. a). Complete the first-time course offering with updated OER material. b). Collect students’ feedback on updated OER material; c). Publish all the OER material to the website and the D2L course management system.
12. *Timeline for IT 4843 – Ethical Hacking for Effective Defense – Responsible personal: Professor William Forsyth*
    1. *4/15/2022*. Complete/review accessibility training and requirements. Review the existing course, collect necessary materials and resources, and prepare a detailed task list for the update/redevelopment.
    2. *7/15/2022*. a). Complete updating the instructions in the course to the current release of the MEAN stack. Learning materials for new topics such as DevOps will also be developed.
    3. *8/15/2022*. a). Complete the redevelopment of accessibility compliant course materials in HTML format, along with the video lectures.
    4. *12/15/2022*. a). Complete course offerings with updated OER material. b). Collect students’ feedback on the course; c). Publish the updated OER material in a public website and create a course package that can be imported into D2L.
13. *Timeline for IT 4683 – Management of IT and HCI - Responsible personnel: Dr. Richard Halstead-Nussloch*
14. *4/15/2022*. a). Complete/review accessibility training and requirements b). Collecting necessary materials and creating the course plan. C) Syllabus development
15. *7/15/2022*. Complete the development of accessibility compliant OER material for learning modules.
16. *8/15/2022*. a). Complete the development of accessibility compliant OER ancillary material such as labs, exercises, literature searches and projects for modules 1-6; b) Send one learning module to Michael Handlin for student review. Revise the module and other modules based on the feedback received. C) Continue to develop modules.
17. *12/15/2022*. a). Complete course offering with update OER material. b). Collect students’ feedback on updated OER material; c). Host the OER material in a publicly available website and create a course package that can be imported into D2L.

# Budget

*Please enter your project’s budget below. Include personnel and projected expenses, keeping in mind that this grant funds the estimated time in your Action Plan. The maximum amounts for the award are as follows:*

* *$2,000 maximum per team member for salary, course release, travel, etc.*
* *Additional project expenses allowed, but must be adequately justified in this section*
* *$10,000 maximum total award per grant*

The budget of this proposal is listed as follows.

* Dr. Hossain Shahriar, project lead, $1600 for summer salary.
* Professor Jamie Jamison, developer and instructor of record for IT 3203, $1800 for summer salary.
* Professor Donald Privitera, developer and instructor of record for IT 4323, $1800 for summer salary.
* Professor William Forsyth, developer and instructor of record for IT 4843, $1800 for summer salary.
* Dr. Richard Halstead-Nussloch, developer and instructor of record for IT 4683, $1800 for summer salary.
* Garima Banerjee, instructional designer, $900 for summer salary.
* Michael Handlin, student reviewer, $300.

# Creative Commons Terms

*I understand that any new materials or revisions created with Affordable Learning Georgia funding will, by default, be made available to the public under a Creative Commons Attribution License (CC-BY), with exceptions for modifications of pre-existing resources with a more restrictive license.*

# Accessibility Terms

*I understand that any new materials or revisions created with Affordable Learning Georgia funding must be developed in compliance with the specific accessibility standards defined in the Request for Proposals.*

# Letter of Support

*The Department Chair from the corresponding project, or the Department Chair’s direct report such as the Dean or Provost, must provide a signed Letter of Support for the project. This letter should acknowledge the following:*

* *The department will provide support for fund disbursement in correspondence with the Grants/Business Office.*
* *The department approves of the work on the proposal by the applicant(s).*
* *The department acknowledges the sustainability of these affordable resources after the grant work is complete.*

*In the case of multi-institutional affiliations, all participants’ institutions must provide a letter of support.*

*Please provide the name and title of the department chair (or other administrator) who provided you with the Letter of Support.*

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| *Dr. Rebecca Rutherfoord, Professor of IT, Chair of Department of Information Technology* |

# Grants or Business Office Acknowledgment Form

*Institutional Grants/Business Offices will be responsible for fund disbursement, often in correspondence with the Department Chair, including expense and travel reimbursement. All applicants will need to provide a signed Acknowledgement Form, the template for which is linked on the RFP page, stating that the Grants/Business Office knows about the applicant’s intent to apply for an Affordable Materials Grant. Either the Department Chair or the Project Lead can work with the Grants/Business Office to get this signed form.*

*In the case of multi-institutional affiliations, all participants’ institutions must provide this form.*

*Please provide the name and title of the grants or business office representative who provided you with the acknowledgement form.*

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| Kimberley Hunt, Grants and Contract Manager Office of Research, Kennesaw State University |