

Formal Evaluation and Subject Matter Expert Summary Report



Maine is IT!
INFORMATION TECHNOLOGY
A CONSORTIUM OF MAINE'S SEVEN COMMUNITY COLLEGES

BUS214

*Submitted to Maine is IT in fulfillment of the
TAACCCT grant requirements*

*By
Emporia State University*

EMPORIA STATE
UNIVERSITY
■ INFORMATION TECHNOLOGY

March 21, 2017

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Course Review for: Maine is IT
Course: KVCC: BUS214 - Information Systems Security
Reviewed by: Joseph Kern
Date: 3/21/16

This review is based on the Blackboard content of the BUS214 course, which includes the syllabus, session outlines, and class assignment/assessment materials.

Part 1: Course Review

A. Course Review & Introduction (16 points total)		
1.1 Instructions made clear how to get started and where to find various course components.	3	2
1.2 Learners are introduced to the purpose and structure of the course.	3	3
1.3 Etiquette expectations (sometimes called “netiquette”) for online discussions, email, and other forms of communication are clearly stated.	2	0
1.4 Course and or institutional policies with which the learner is expected to comply are clearly stated, or a link to current policies is provided.	2	1
1.5 Minimum technology requirements are clearly stated and instructions for use provided.	2	0
1.6 Prerequisite knowledge in the discipline and/or any required competencies are clearly stated.	1	0
1.7 Minimum technical skills expected of the learner are clearly stated.	1	0
1.8 The self-introduction by the instructor is appropriate and is available online.	1	1
1.9 Learners are asked to introduce themselves to the class.	1	0
	Total	7
Comments:		
<p>1.1: The syllabus includes a link to help students navigate to the Blackboard course. It would be helpful if the opening page began with an announcement or page that gave introductory information about what the Blackboard course contains, how to access it, and generally how to get started on the right path. The class outlines show that this will be demonstrated on the first day, but having a permanent guide is recommended.</p> <p>1.2: The purpose of the course is clearly and succinctly stated in the syllabus.</p> <p>1.3: Etiquette expectations (sometimes called “netiquette”) for online discussions, email, and other forms of communication should be covered. <i>Examples include:</i></p> <ul style="list-style-type: none"> • Be sensitive to the fact that there will be cultural and linguistic backgrounds, as well as different political and religious beliefs, plus other differences in general. • Use good taste when composing your responses in Discussion Forums. Swearing and profanity is also part of being sensitive to your classmates and should be avoided. Also consider that slang can be misunderstood or misinterpreted. • Don’t use all capital letters when composing your responses as this is considered “shouting” on the Internet and is regarded as impolite or aggressive. It can also be stressful on the eye when trying to read your message. • Be respectful of your others’ views and opinions. Avoid “flaming” (publicly attacking or insulting) them as this can cause hurt feelings and decrease the chances of getting all different types of points of view. • Be careful when using acronyms. If you use an acronym it is best to spell out its meaning first, 		

then put the acronym in parentheses afterward, for example: Frequently Asked Questions (FAQs). After that you can use the acronym freely throughout your message.

- Use good grammar and spelling, and avoid using text messaging shortcuts.

1.4: Course and institutional policies adequately cover attendance and late work, but important areas like academic dishonesty were not addressed. The KVCC Student Code of Conduct should be listed as a reference for students, and a hyperlink to it would support student navigation.

1.5: Required technology is not discussed in the syllabus. The description of the Assignment 3 and the final exam mention the TestOut software package, but no details are given to explain whether students will be purchasing this software.

1.6: Two prerequisite courses are indicated, but no knowledge vital to the success of incoming students is listed.

1.7: Minimal skills for students entering the course are not listed.

1.8: A link to an instructor bio is included on the course information page, and according to the class session outlines, an introduction is included in the first day of class.

1.9: Nothing in the syllabus or outlines indicates that students are asked to introduce themselves.

B. Learning Objectives & Competencies (15 points total)

2.1 The course learning objectives, or course/program competencies, describe outcomes that are measurable	3	3
2.2 The module/unit learning objectives or competencies describe outcomes that are measurable and consistent with the course-level objectives or competencies.	3	0
2.3 All learning objectives and competencies are stated clearly and written from the learner's perspective.	3	3
2.4 The relationship between learning objectives or competencies and course activities is clearly stated.	3	1
2.5 The learning objectives or competencies are suited to the level of the course.	3	3
Total		10

Comments:

2.1: The course learning objectives are measurable, using action verbs that indicate what actions of students will be assessed.

2.2: No unit-level objectives were located in the course materials. There are extensive topic outlines, and each assignment begins with an overview of what students will be answering, and why. These are more than many instructors include, but it would be beneficial to specify which course objectives are being met each day and with each assignment, as this sets up not only the day's content, but also the student activities.

2.3 : Objectives are written from student perspectives.

2.4: It is clear that the content covered each day aligns with the course objectives, but the connection between the two could be stronger if clear alignment statements are made with each activity, with references to specific course objectives.

2.5: Objectives are appropriate for the course level, as students will be prepared for application and a summative certification exam.

C. Assessment & Measurement (13 points total)

3.1 The assessments measure the stated learning objectives or competencies.	3	3
3.2 The course grading policy is stated clearly.	3	3
3.3 Specific and descriptive criteria are provided for the evaluation of learners' work and are tied to the course grading policy.	3	0
3.4 The assessment instruments selected are sequenced, varied, and suited to the learner work being assessed.	2	2
3.5 The course provides learners with multiple opportunities to track their learning progress.	2	2
	<i>Total</i>	10

Comments:

3.1: Assessments adequately measure the course objectives.

3.2: Course grading policy is clear and succinct.

3.3: No criteria are provided for the assignments and assessments. Many of the assignments could be graded on a right/wrong basis, but more complex assignments would benefit from a rubric to help students understand the points of emphasis that should be addressed in their work

3.4: Assignments and assessments are structured to align with the course content and help develop student abilities through the course, culminating in a final project and official certification exam.

3.5: The nature of the work provides many opportunities for students to be shown their progress and gauge whether they understand content.

D. Instructional Materials (13 points total)

4.1 The instructional materials contribute to the achievement of the stated course and module/unit learning objectives or competencies.	3	3
4.2 Both the purpose of instructional materials and how the materials are to be used for learning activities are clearly explained.	3	3
4.3 All instructional materials used in the course are appropriately cited.	2	2
4.4 The instructional materials are current.	2	2
4.5 A variety of instructional materials is used in the course.	2	2
4.6 The distinction between required and optional materials is clearly explained.	1	1
	Total	13

Comments:

4.1: The TestOut materials are referred to several times in the course outline and assignment/assessment pages, and the textbook is available as a resource for open-book tests and projects, so they are utilized to contribute to student achievement.

4.2: The uses of the TestOut materials are adequately described, and it is evident that the textbook will be a frequently-used reference for students. The Day 1 outline describes the use of lecture capture videos that will be posted.

4.3: Materials listed are properly cited.

4.4: The textbook prepares for a current certification exam, so it is adequately up to date.

4.5: The “Course Activities” section of the syllabus lists multiple forms of class materials that will be used to deliver content.

4.6: No materials are specified as being optional, but the nature of the course and the ability to utilize materials in assignments and exams makes the depth to which students use any resource a matter of student choice.

E. Course Activities and Learner Interaction (11 points total)

5.1 The learning activities promote the achievement of the stated learning objectives or competencies.	3	3
5.2 Learning activities provide opportunities for interaction that support active learning.	3	1
5.3 The instructor's plan for classroom response time and feedback on assignments is clearly stated.	3	0
5.4 The requirements for learner interaction are clearly stated.	2	1
<i>Total</i>		5

Comments:

5.1: Activities engage students in activities described in the objectives, so they designed to promote achievement.

5.2: Nothing in the syllabus or outline indicates that students will interact with each other, but activities allow students to interact with course content in a variety of ways.

5.3: No plan is provided for classroom response time or assignment feedback.

5.4: No requirements are listed for learner interaction in face-to-face sections, but online students are required to participate in discussions, although there are no guidelines for this participation.

F. Course Technology (10 points total)

6.1 The tools used in the course support the learning objectives and competencies.	3	3
6.2 Course tools promote learner engagement and active learning.	3	3
6.3 Technologies required in the course are readily obtainable.	2	0
6.4 The course technologies are current.	1	1
6.5 Links are provided to privacy policies for all external tools required in the course.	1	0
Total		7

Comments:

6.1: TestOut software activities will support the learning objectives, as the objectives are aligned with TestOut content.

6.2: The TestOut software engages students in lab simulations, so this tool is adequately active.

6.3: The course materials do not explain how students will access the TestOut software.

6.4: Course technologies are current.

6.5: No links are provided in the syllabus. A review of the agreement for each application required in the course will insure that student data required for the use of the software is secure. Linking to the agreements will allow students to easily access the policies.

G. Learner Support (9 points total)

7.1 The course instructions articulate or link to a clear description of the technical support offered and how to obtain it.	3	0
7.2 Course instructions articulate or link to the institution's accessibility policies and services.	3	3
7.3 Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help learners succeed in the course and how learners can obtain them.	2	0
7.4 Course instructions articulate or link to an explanation of how the institution's student support services and resources can help learners succeed in the course and how learners can obtain them.	1	0
Total		3

Comments:

- 7.1:** No technical support information is provided in the syllabus. It is recommended that multiple channels of tech support communication be listed in the syllabus to ensure that no student is put behind due to technical difficulties.
- 7.2:** Specific steps are listed for students needing disability accommodations. Contact information for appropriate offices and a link to the KVCC ADA Policy are provided
- 7.3:** No academic resources are listed. If tutoring, advising, or other student services are available to support academic success, these should be listed along with links or contact information.
- 7.4:** Other than contact information to report and address discrimination, no student support services or resources are listed. If there are services to support student life resources, such as counseling or student wellness, these should be listed along with links or contact information.

H. Accessibility and Usability (12 points total)

8.1 Course navigation facilitates ease of use.	3	3
8.2 Information is provided about the accessibility of all technologies required in the course.	3	0
8.3 The course provides alternative means of access to course materials in formats that meet the needs of diverse learners.	2	2
8.4 The course design facilitates readability.	2	2
8.5 Course multimedia facilitate ease of use.	2	2
Total		9

Comments:

8.1: Course navigation is designed to minimize the number of clicks necessary to access information.

8.2: Information regarding the accessibility of technology used is not included. This would include instructions on how to obtain and install any programs used, as well as instructions to access captions for videos, or other accessible content.

8.3: The course will include videos of class lectures as they occur. The instructor should be aware that the Americans with Disabilities Act requires any videos to have captions or an accompanying transcript to meet the needs of students with hearing disabilities. Work closely with your institution's office for disability services to identify resources to assist in making your course ADA compliant.

8.4: Fonts, text color, and background color of the course falls within ADA compliance recommendations. Be aware that screen reader software will not recognize bold or italicized fonts. Check with your office of disability services before significantly changing the appearance of your course.

8.5: According to the syllabus, the multimedia used will be posted in the Blackboard course for students. When possible, embedding multimedia to play within the course LMS ensures ease of access and limits student issues that may arise when leaving the LMS to access outside resources, such as linking students to YouTube videos.

Part II: Employment Data

Stakeholder Involvement and Employment Opportunities

Items Reviewed include:

- Internships, Job Shadowing Opportunities that exist with the outcomes and objectives with this course.
- Employment opportunities for these skills.
- Outcomes/Objectives are current and relate to job market.

- See Subject Matter Expert review for specific feedback.

Part III: Creative Commons

Items Reviewed include:

- All course materials presented in Creative Commons?
- Creative Common license (including graphic) is represented on course materials.

Findings include:

The syllabus and all course materials are shared with a Creative Commons 4.0 Attribution license, including corresponding CC graphic.

Part IV: Subject Matter Expert (SME) Findings & Review

Course: KVCC: BUS214
Course Name: Information Systems Security
Reviewed by: Joseph Kern
Date: March 21, 2017

Background

Funded by a \$13 million grant from the U.S. Department of Labor, *Maine is IT!* is building new educational and career pathways in information technology at all seven of Maine's community colleges. The programs funded by the grant are designed to support Maine workers eligible for the Trade Adjustment Assistance (TAA) program, un/underemployed adults, and workforce needs in Maine's growing IT sector. They have been built to serve individuals with a range of experience, from those interested in gaining basic IT skills to IT professionals looking to advance their careers through new industry certifications.

Overall Remarks and Reviewer Summary

In reviewing BUS214 several processes and data collections tools were noted and identified. This reviewer took in account the Dynamic Skills Audit conducted in 2014-2015. Both qualitative and quantitative data was identified in the report that provides the key elements:

1. Career opportunities do exist within 30 miles of KVCC for graduates from an AAS in Applied Electronics & Computer Technology.
2. Current job openings list specific duties that relate the Information Systems Security course, BUS214.
3. The current Advisory Board indicates that BUS214 contributes to the labor market data.

There are current job openings available within 30 miles of KVCC for computer network security, which would utilize the knowledge gained in BUS214 (as of 3/21/17). A Junior Penetration Tester position at the VTech Solution IT services company in Augusta, ME, has no listed degree requirements but would prefer 2-3 years of IT security experience.

The Dynamic Skills Audit outlined the following process, which this reviewer took into consideration when compiling this the formal SME report:

1. Local industry needs were assessed through the program Advisory Board. Minutes from those Advisory Board meetings were reviewed and suggestions from the partnerships were adopted into this summary.
2. Burning Glass data was reviewed to identify themes and trends in the current job market. The Burning Glass report helped identify skills demanded by employers to curriculum outcomes and learning objectives.

A formal SME was conducted with the above reports and compiled in the next section of this report.

A. Program and Course Overview and Objectives

Items Reviewed include:

- Dynamic Skills Audit Summary Report (Academic Years 2014-2015)
- Burning Glass Labor Market Data reports (Compilation)
- Advisory Board Minutes

Findings include:

The BUS214 course learning outcomes and objectives align with the program mission and goals. This reviewer found that the BUS214 course has listed measurable outcomes which can be stacked and latticed with other coursework. The industry sector for BUS214 has been categorized as: *541519 Other computer related services*. (See: https://www.census.gov/svsd/www/services/sas/sas_summary/54summary.htm#sectordescription) The reviewer finds that this classification is correct.

Those completing this course would enter the Bureau of Labor Statistics occupation classification of *SOC: 15-1122 Information Security Analysts*. (See: <https://www.bls.gov/soc/2010/soc150000.htm#15-1100>)

The NCES CIP (Classification of Instructional Programs) is referenced as: *11: Computer and Information Sciences and Support Services*. (See: <http://nces.ed.gov/ipeds/cipcode/cipdetail.aspx?y=55&cip=11>)

This is also an accurate classification.

This course was designed for 2nd-year community college students or equivalent. Two prerequisites are specified.

Listed course objectives include competencies dealing with the functions of:

1. implement security configuration parameters on network devices and other technologies
2. given a scenario, use secure network administration principles
3. explain network design elements and components
4. given a scenario, implement common protocols and services
5. given a scenario, troubleshoot security issues related to wireless networking
6. explain the importance of risk related concepts
7. summarize the security implications of integrating systems and data with third parties
8. compare and contrast physical security and environmental controls
9. given a scenario, select the appropriate control to meet the goals of security
10. explain types of malware
11. analyze a scenario and select the appropriate type of mitigation and deterrent techniques
12. explain the proper use of penetration testing versus vulnerability scanning
13. given a scenario, select the appropriate authentication, authorization or access control
14. given a scenario, utilize general cryptography concepts

The content of these course objectives aligns with the topics listed in the course syllabus and TestOut Security Pro Certification exam. This alignment also correlates to items found within the Dynamic Skills Audit and Burning Glass baseline skills as listed in the labor market data.

Specific review standards are listed in the table referenced below:

Table: Standard Reviewed Standards for Course Outcomes

Standard Reviewed	N/A	Satisfactory	Not Satisfactory
A.1 The learning outcomes are clearly stated and mapped to specific objectives and/or assignments.			X
A.2 Prerequisites and/or any required competencies are clearly stated.			X
A.3 Learning objectives for each course describe outcomes that are measurable.		X	
A.4 Learning objectives are appropriately designed for the level of each of the course.		X	
A.5 Instruction, activities, and assignments in courses are scaffolded from course to course, and throughout the program.		X	

A.1 - BUS214 articulates specific learning outcomes for the course. For many of these, the link between the outcome and activity is self-explanatory, but most are not explicitly tied to specific assignments or course activities.

A.2 – Two prerequisites courses are listed, but previous skills and knowledge are not stated.

A.3 - Course objectives are measurable.

A.4 - Learning objectives are appropriate for a 2nd-year course.

A.5 – Activities appear to be scaffolded through the course, building in complexity throughout the course, ending in a self-determined, independent student project. The course’s objectives fill an industry need within the program.

B. Relevancy

Items Reviewed include:

- Dynamic Skills Audit Summary Report (Academic Years 2014-2015)
- Burning Glass Labor Market Data reports (Compilation)
- Advisory Board Minutes

Findings include:

Course competencies are relevant to students, industry, and employers. Strong evidence was found in the Dynamic Skills Audit Summary Report. Direct ties were found through interviews with stakeholders and in Advisory Board minutes.

The table that follows is a clear matrix of how the course outcomes are relevant to students, industry, and employers:

Table: Matrix of evidence-based skills mapped to students, industry, and employers

Standard Reviewed	N/A	Satisfactory	Not Satisfactory
B.1 Course competencies represent industry's expectation of the overarching knowledge, skills, and abilities that 2 nd year college students should possess.		X	
B.2 Core course competencies are relevant to industry and employers .		X	
B.3 Instruction, activities, and assignment in individual courses are relevant and engaging to students .		X	

B.1 - Course objectives align with industry expectations at the appropriate skill level, as they are based on a current industry certification program.

B.2 - Core competencies are relevant to industry and employers, as verified using the Burning Glass labor market data (<http://burning-glass.com/research/coding-skills/>) and the Dynamic Skills Audit Summary. Student learning objectives align with the competencies expected of new hires in the IT security field and those listed by the Advisory Board.

B.3 – The activities provided engage students in simulations of realistic scenarios.

C. Resources & Materials

Items Reviewed include:

- Dynamic Skills Audit Summary Report (Academic Years 2014-2015)
- Burning Glass Labor Market Data reports (Compilation)
- Advisory Board Minutes

Findings include:

Table: Instructional materials and their direct link to course outcomes

Standard Reviewed	N/A	Satisfactory	Not Satisfactory
C.1 The instructional materials contribute to the achievement of the stated course learning objectives.		X	
C.2 The purpose of the instructional materials is clearly explained.		X	
C.3 The instructional materials present a variety of perspectives and approaches on the course content.		X	
C.4 The instructional materials are appropriately designed for the level of the course.		X	

C.1 – The course’s textbook and its software activities are used as guides throughout the course, and lecture materials and videos will be available for students to utilize.

C.2 – Multiple assessments refer to the TestOut materials, making it clear that they will be used as a reference tool to complete activities.

C.3 – Students work through a variety of security analysis activities that cover a range of aspects of IT security.

C.4 – The materials align with a certification program and engage students in critical applications of content.

D. Assessment & Measurement

Items Reviewed include:

- Dynamic Skills Audit Summary Report (Academic Years 2014-2015)
- Burning Glass Labor Market Data reports (Compilation)
- Advisory Board Minutes

Findings include:

Table: Measurement of effective learning

Standard Reviewed	N/A	Satisfactory	Not Satisfactory
D.1 The course evaluation/criteria/course grading policy is stated clearly on each syllabus.		X	
D.2 Course-level assessments (those that can be delivered) measure the stated learning objectives and are consistent with course activities and resources.		X	
D.3 Specific and descriptive criteria are provided for the evaluation of students' work and participation and are tied to the course grading policy.			X
D.4 The assessment instruments (that can be delivered) are sequenced, varied, and appropriate to the content being assessed.		X	

D.1 – The grading policy is clearly stated.

D.2 – Assessments align with objectives, activities, and available resources.

D.3 – Few specific details are provided to explain how assessments are graded. This is especially important when open-ended student projects are used to assess student learning. Participation guidelines are provided, but participation is not a part of the calculated grade.

D.4 –The progression of assignments creates an appropriate sequence that builds skills throughout the course. Variety comes from the different topics, as well as the opportunity for students to create their own projects.