

Formal Evaluation and Subject Matter Expert Summary Report



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

CMIT240

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

*By
Emporia State University*

EMPORIA STATE
UNIVERSITY
■ INFORMATION TECHNOLOGY

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Course Review for: Maine is IT
Course: SMCC: CMIT240 - Advanced Virtualization
Reviewed by: Joseph Kern
Date: 6/6/17

This review is based on the contents of the course syllabus.

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	0
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	2
1.5 Minimum technology requirements are clearly stated and instructions for use provided.	2	2
1.6 Prerequisite knowledge in the discipline and/or any required competencies are clearly stated.	1	1
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	0
1.9 Learners are asked to introduce themselves to the class.	1	0
	Total	8
Comments:		
<p>1.1: The syllabus does not provide information about starting the course or where lessons and handouts will be located for student access. It would be helpful to provide a link to the Blackboard course (or include a place to insert this when it exists), along with instructions to help students access the course and its contents.</p> <p>1.2: The purpose of the course is clearly and succinctly stated. The course format is explained from the student perspective.</p> <p>1.3: General student expectations are listed, including the need for respect, civility, and good cooperation among classmates. Because Blackboard discussions and other electronic communication are a part of the course, a section of “netiquette” is recommended to provide helpful guidelines that prevent the miscommunication that frequently occurs with e-communication. <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: Many policies, including absences, academic dishonesty, and late work are covered. References are made to college-wide information about these, such as the Student Code of Conduct, but hyperlinks directly to these locations would be more helpful.

1.5: The only required technology listed is that students should have internet access to engage in online communication. It may be inferred from this that other technologies will be accessed in the lab classroom.

1.6: The syllabus lists two prerequisite courses and one co-requisite. No expectations of student knowledge are listed, although the course is described as a follow-up to CMIT140, which implies an expectation of mastery of those fundamentals. Students may appreciate a statement of the level of competency required for initial success.

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

1.8: No introduction for the instructor or link to an online introduction is given.

1.9: Nothing in the syllabus 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	2
2.2 The module/unit learning objectives or competencies describe outcomes that are measurable and consistent with the course-level objectives or competencies.	3	1
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: Most of the course learning objectives are measurable. Many begin with "Understand..." which is one step away from being measurable. What will students do to demonstrate that they understand the concepts? That is the verbiage that should replace "understand" objectives.

2.2: The weekly outline of course topics does not include clear objectives. The topics are almost all verb-based, which would lend itself easily to adding clear student objectives for each week, which is recommended. The topics do align with the course objectives.

2.3 : The course objectives are clearly stated from a student perspective.

2.4: While the topics included in the course outline are evidently connected to the course objectives, it would be helpful to include cross-referencing between these. Students who can look at course objectives to see what lessons address each one are more easily able to review material when necessary.

2.5: Objectives are suited to the level of this 200-level course.

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
Total		10

Comments:

3.1: No assessments are provided for review. Occasional chapter quizzes are listed in the course outline, and a final exam covering the textbook chapters is listed. Chapter topics align with objectives. Lab activities are included in the course description grading, which would align with the hands-on nature of the objectives.

3.2: Course grading policy is clear and succinct.

3.3: No criteria for grading are included in the syllabus.

3.4: Assignments are sequenced to follow the chapters of the course textbook. The topics cover a range of topics, providing adequate variety in the types of activities that students will be doing.

3.5: The frequent lab activities and quizzes every few chapters provide adequate frequent feedback for students.

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	0
4.6 The distinction between required and optional materials is clearly explained.	1	1
	<i>Total</i>	11

Comments:

- 4.1:** The textbook's materials will contribute to course objectives. Other handouts are mentioned in the course outline to supplement the book.
- 4.2:** The purpose and use of the instructional materials is not explained in the syllabus, but these are self-evident.
- 4.3:** The textbook is cited by title, author, and ISBN.
- 4.4:** The textbook was published in 2013, making it suitably current for the topic.
- 4.5:** The syllabus does not indicate that a variety of materials will be used. All seem to be text-based, from 2 sources.
- 4.6:** Nothing indicates that optional materials exist.

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	0
<i>Total</i>		4

Comments:

5.1: Activities apply a hands-on approach in labs to achieve the objectives.

5.2: Students will interact frequently with equipment/software/tools, but nothing in the syllabus indicates that students will learn interactively with their peers.

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

5.4: No requirements for student interaction are included. Expectations are only that they attend class and engage in the activities.

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	2
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		9

Comments:

- 6.1:** Activities based on the weekly topics of specific computer and network tools will support the objectives.
- 6.2:** Course tools promote learner engagement and active learning.
- 6.3:** The software used will be provided in the computer lab, so it is adequately obtainable for students within the scope of the course.
- 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	1
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
<i>Total</i>		4

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: An “ADA Syllabus Statement” is made, along with a statement directing any student with special needs to contact the correct SMCC office. Contact information is provided. A direct link to their webpage is recommended as well.

7.3: The only academic resource listed is a detailed explanation of the SMCC Pay-for-Print Policy. 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: 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. Courses usually include a statement made regarding how students can seek help if they feel discriminated against.

H. Accessibility and Usability (12 points total)

8.1 Course navigation facilitates ease of use.	3	0
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	0
8.4 The course design facilitates readability.	2	0
8.5 Course multimedia facilitate ease of use.	2	0
Total		0

Comments:

8.1: Unable to review this item, as no Blackboard LMS access to the course was provided. Course navigation should be 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 text-to-speech or other accessibility tools.

8.3: Unable to review this item. In addition to varying the modality of content through text, audio, and video instruction, the Americans with Disabilities Act requires institutions to make accommodations for student who identify as having a disability. Work closely with your institution’s office for disability services to identify resources to assist in making your course ADA compliant. For videos, a transcript or videos that are captioned are required as an effective means of communication.

8.4: Unable to review this item. Pay special attention to fonts, text color, and background color. Most learning management systems have a default appearance that is ADA compliant. Also, be aware that screen reader software will not recognize bold or italicized fonts. Check with your office of disability services before changing the appearance of your course.

8.5: Unable to review this item. When possible, embedding multimedia within the course LMS ensures ease of access and limits student issues that may arise when leaving the LMS to access outside resources.

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 includes Creative Commons license information and the corresponding CC graphic.

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

Course: SMCC: CMIT240
Course Name: Advanced Virtualization
Reviewed by: Joseph Kern
Date: June 6, 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 CMIT240 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 were found within 20 miles of SMCC for graduates from an AAS in Electrical Engineering Technologies.
2. Current job openings list specific duties that relate the Advanced Virtualization course, CMIT240.

There are several current job openings available for network technicians, engineers, and administrators (as of 6/6/17) within a 20-mile radius of SMCC. Most positions require several years of work experience. An entry-level Network Engineer is being sought in Windham, ME. The position requirements include VMWare competency, which is a major focus of CMIT240.

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 CMIT240 course learning outcomes and objectives align with the program mission and goals. This reviewer found that the CMIT240 course has listed measurable outcomes which can be stacked with other coursework. The industry sector for CMIT240 has been categorized as: *541512 Computer Systems Design Services*. (See: <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=541512&search=2017%20NAICS%20Search>) The reviewer finds that this classification is correct.

Those completing this course would enter the Bureau of Labor Statistics occupation classification of *SOC:15-1140 Database and Systems Administrators and Network Architects*. (See: <http://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.

Listed course objectives include:

1. Identify the role of each product in the vSphere product suite
2. Recognize the interaction and dependencies between the products in the vSphere suite
3. Understand how vSphere differs from other virtualization products
4. Understand ESXi compatibility requirements
5. Plan an ESXi deployment
6. Deploy ESXi
7. Perform post-installation configuration of ESXi
8. Understand the components and role of vCenter Server
9. Plan a vCenter Server deployment
10. Install and configure a vCenter Server database
11. Install vSphere Update Manager and integrate it with the vSphere Client
12. Determine which hosts or VMs need to be patched or upgraded
13. Use vSphere Update Manager to upgrade virtual machine hardware or VMware Tools
14. Apply patches to ESXi hosts
15. Upgrade hosts and coordinate large-scale datacenter upgrades
16. Identify the components of virtual networking
17. Create virtual switches and distributed virtual switches
18. Create and manage NIC teaming, VLANs, and private VLANs
19. Examine the options for third-party virtual switches in your environment
20. Configure virtual switch security policies

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– CMIT240 lists specific learning outcomes for the course. An outline of course topics is listed, but no strong connection is made between each week’s activities and the course outcomes they will meet. The syllabus would be improved by providing cross-references between course objectives and the semester’s units/topics shown in a course outline or timeline.

A.2 – Previous skills and knowledge are alluded to in the syllabus, as it is explained that this course is a follow-up to CMIT140.

A.3 – Most course objectives are measurable, but many are based on the verb “understand” which is too vague to suggest a specific measurement.

A.4 - Learning objectives are appropriate for a 200-level course.

A.5 – Activities appear to be scaffolded through the course. The skills mastered in previous courses will serve students in CMIT240. 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 1 st 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, based on employee responsibilities found in current job postings and inclusion of ACM Learning Outcomes in the syllabus.

B.2- Core competencies are relevant to industry and employers, as verified using the Burning Glass labor market data <http://burning-glass.com/five-careers-where-coding-skills-will-help-you-get-ahead/>) and the Dynamic Skills Audit Summary. Student learning objectives align with the competencies expected of employees in network support fields and those listed by the Advisory Board.

B.3 - Activities and instruction defined in the course outline offer real-world application in computer network design that are beneficial to students seeking employment in this field.

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:

Textbook contents were not available in course materials, and no additional handouts or other materials were shared for review.

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 topics covered with the textbook clearly align with course learning objectives.

C.2 – The syllabus makes it clear how the textbook will be used by students.

C.3 – The textbook likely provides just one perspective on the content, but the instructor does include additional handouts in some sections. Hands-on computer activities also provide content. These sources and methods present an adequate variety of materials and approaches.

C.4 – Materials are appropriate for the course level and its complex 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:

The syllabus indicates that frequent lab activities, occasional quizzes, and a final exam are used to assess student learning.

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, but no criteria are provided for specific activities.

D.2 – The assessments provided for review adequately assess the learning objectives at multiple cognitive levels and are consistent with course activities.

D.3 – Assessments are tied to the course grading policy. Participation criteria are provided, not no other activity criteria are.

D.4 – The sequence of the assignments is clear, as they follow the progression of the course to build toward its outcomes. The variety of assessments is adequate, as assignments provided for review cover a range of content-focused activities, each in unique ways appropriate for the knowledge and skills being assessed.