

# Formal Evaluation and Subject Matter Expert Summary Report



**Maine is IT!**

INFORMATION TECHNOLOGY  
A CONSORTIUM OF MAINE'S SEVEN COMMUNITY COLLEGES

## CTT155

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

*By  
Emporia State University*

*July 2017*

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**Course Review for:** Maine is IT  
**Course:** CTT155 Advanced Computer Networking  
**Reviewed by:** Robert Gibson, EdD  
**Date:** June 25, 2017

**Part 1: Course Review**

<b>A. Course Review &amp; Introduction (16 points total)</b>		
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	2
1.3 Etiquette expectations (sometimes called “netiquette”) for online discussions, email, and other forms of communication are clearly stated.	2	1
1.4 Course and or institutional policies with which the learner are 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	1
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	0
1.9 Learners are asked to introduce themselves to the class.	1	0
<b>Total</b>		<b>8</b>
<b>Comments:</b>		
<p><b>1.1:</b> A live link to the Blackboard course was not provided for Reviewer verification; however, no specific instructions were identified within the syllabus. The Reviewer will assume some of this may be available online. Consider adding instructions for locating course components within the syllabus, including a direct link to the course site.</p> <p><b>1.2:</b> The purpose and structure for the course is explained in the syllabus; however, this is only a short paragraph. Consider strengthening this description.</p> <p><b>1.3:</b> Etiquette expectations (sometimes called “netiquette”) for any online discussions, email, and other forms of course communication were partially covered. Examples include:</p> <ul style="list-style-type: none"> <li>• Be sensitive to the fact that there will be cultural and linguistic backgrounds, as well as different political and religious beliefs, plus just differences in general.</li> <li>• 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.</li> <li>• Do not use all capital letters when composing your responses as this is considered “shouting” and is regarded as impolite or aggressive. It can also be stressful on the eye when trying to read.</li> <li>• Be respectful of 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.</li> <li>• Be careful when using acronyms. It is best to spell out its meaning first, and then put the acronym in parentheses afterward, for example: Frequently Asked Questions (FAQs). After that, you can use the acronym freely throughout your message.</li> <li>• Use good grammar and spelling, and avoid using text-messaging shortcuts.</li> </ul> <p><b>1.4:</b> Some course and institutional policies were covered in the syllabus: The attendance expectation were described. The Reviewer also located the Acceptable Use Policy. The Reviewer recommends adding a live link to these policies from the college web site/handbook.</p>		

**1.5:** Technology requirements are not indicated. Considering including that information.

**1.6:** A prerequisite/co-requisite course was not indicated. The Reviewer recommends adding a statement expressing those expectations or non-expectations.

**1.7:** Minimum technology skills were not indicated. The Reviewer recommends adding a statement expressing those expectations.

**1.8:** There is a placeholder for the faculty information. The Reviewer encourages adding a video introduction link or a short biographical sketch to the course as well – even if the course is F2F.

**1.9:** Access to the discussions in Blackboard were not available to the Reviewer. The Reviewer encourages use of asynchronous discussions outside of class. Student introductions and short bio builds a learning community.

**B. Learning Objectives & Competencies (15 points total)**

2.1 The course learning objectives, or course/program competencies, describe measurable outcomes.	3	1
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	2
2.5 The learning objectives or competencies are suited to the level of the course.	3	3
<b>Total</b>		<b>10</b>

**Comments:**

**2.1:** No discernable Objectives or Outcomes were located in the syllabus. Only a listing of topics to be covered. Consider adding Learning Objectives expressed in measurable language.

**2.2:** Specific competencies were implied through the course topics. These should map to course activities and assessments. This is referred to as “alignment” of the objectives to the outcomes and activities. In other words, associate the course outline to the learning objectives in specific wording. (eg, the activities should indicate which objective is to be met.) This can/should be added the activity schedule

**2.3:** See 2.2

**2.4:** See 2.2. A general overview of projects and activities were indicated in the topical outline/grid, but more detailed information and alignment relative to these course tasks would strengthen the course design. Course activities and assessments should be clearly aligned to specific Objectives/Outcomes. These can be indicated using a simple reference within the grid (eg, ‘Learning Objective 1.3’, etc.)

**2.5:** The course topics appear to be suited to the level of the course.

### C. Assessment & Measurement (13 points total)

3.1 The assessments measure the stated learning objectives or competencies.	3	1
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	2
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	1
<i>Total</i>		<b>9</b>

#### Comments:

**3.1:** The Reviewer recommends expressing a 'crosswalk' to course learning objectives. eg, map the activity/assessment to the course objectives more clearly. Obviously, this requires further development of the course objectives and the course activities/assessments. The assessments/activities were indicated in very broad terms using a topical outline. Consider developing/expressing these in more detail.

**3.2:** The grading policy/rubric is stated in the syllabus,

**3.3:** These criteria could be expressed with more detail using a descriptive rubric.

**3.4:** There was a good variety of assessment strategies for this course. The application of the technology is well considered. The application of the knowledge transfer is balanced between active learning and standardized assessment. The Reviewer commends this course design.

**3.5:** Reviewer was not able to locate any evidence of tracking learning progress. (e.g., Circle back activities, mastery learning pathways, etc.) However, course activities appear to build on one another - providing scaffolding.

**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	2
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
<b>Total</b>		<b>12</b>

**Comments:**

**4.1:** The instructional materials aligns with the course topics stated in the syllabus.

**4.2:** The Reviewer recommends further development of the purpose of the course materials relative to the stated learning objectives. (eg, what is the flash/pen drive to be used for? Presumably for homework/assignments, but that is not clear)

**4.3:** The instructional materials were properly cited.

**4.4:** The instructional materials are current.

**4.5:** Assumed. The nature of the course suggests a variety of materials will be utilized.

**4.6:** Notation of Required v. Recommended/Optional is indicated.

**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	2
5.2 Learning activities provide opportunities for interaction that support active learning.	3	3
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
<b>Total</b>		<b>6</b>

**Comments:**

**5.1:** Consider noting the primary course outcomes and sub (measurable) outcomes more descriptively, and then mapping the activities to these outcomes. For example: 'To gain a basic understanding of computer networking..' The subobjectives break this down further: 'students will be able to successfully install a router; students will be able to manage a small network of 10 computers, ....' And so forth. Those subobjectives are what are measured and the activities are built upon.

**5.2:** There are opportunities for interactive learning. The Reviewer applauds this variety.

**5.3:** A plan for feedback was not located in the syllabus. Even if this is a face-to-face course, the instructor's feedback and review policy should be expressed.

**5.4:** Participation expectations are not clearly stated, other than the Attendance Policy

## F. Course Technology (10 points total)

6.1 The tools used in the course support the learning objectives and competencies.	3	2
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	1
<i>Total</i>		<b>9</b>

### Comments:

**6.1:** The tools in the course appear to support the unit/weekly topics. Again, consider a crosswalk from the objectives to the course activities.

**6.2:** The tools promote engagement and active learning. The assignments promote active student engagement by requiring interaction with the technology to build content for assignments.

**6.3:** It is assumed the tools will primarily be provided by the college and through independent resources.

**6.4:** The course technologies are current and up-to-date for the required work.

**6.5:** The Acceptable Use Policy was clearly indicated. Consider adding a link to the Course Handbook for more information.



## 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
<b>Total</b>		<b>3</b>

### Comments:

**7.1:** Providing students access to technology support is very important. Do not assume that students know how to obtain support from the institution. Provide instructions/links for students to access the technology help services available to them.

**7.2:** The syllabus contains an excerpt from the institution website pertaining to accessibility. The Reviewer applauds the addition of that important information.

**7.3:** Access to the institutional academic support services is critical. Consider providing instructions/links to tutoring and other academic support services. These might include Tutoring Services, the Writing Center, Library Resources, etc.

**7.4:** As with academic support, student wellness and support is also critical. Consider providing instructions/links to the institutional student support services. These might include Career Services/Job Placement, Honors Programs, Health and Wellness, Advising, Curricular Organizations, Co-Curricular Resources, etc.

## 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	2
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
<b>Total</b>		<b>11</b>

### Comments:

**8.1:** The Blackboard course navigation was unavailable. It is presumed to meet expectations.

**8.2:** This could be strengthened to include information specific to students with physical or learning disabilities. Has the course been checked with an Accessibility Checker? Is it compatible with JAWS and/or NVDA (screen readers)? A sentence or two indicating compatibility and/or compliance would strengthen the course.

**8.3:** 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. The Reviewer assumes this has been considered. Certain software includes compliancy features. Certain Learning Management Systems also include accessibility checkers.

**8.4:** Implied. Consider processing this course through an ADA checker. Webaim is one such option.  
<http://wave.webaim.org>

**8.5:** Implied. Ensure content, such as videos, are easy accessed and include either 1) captioning and/or 2) a transcript. The Reviewer did not review any multimedia elements in this course, however.

## **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.

#### **Findings include:**

- See Subject Matter Expert review for specific feedback relative to this finding.

### **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:**

- This material is licensed under the Creative Commons Attribution 4.0 International License.
- Creative Commons graphic is included on the footer.

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

**Course:** CTT155  
**Course Name:** Advanced Computer Networking  
**Date:** June 25, 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 CTT155 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 in Washington County for graduates from an AAS in Business or those completing a certificate program in computer technologies. It was also found by this Reviewer that the skills mastered in CTT155 relate to specific job openings.
2. Current job openings list specific duties that relate to CTT155
3. The current Advisory Board indicates CTT155 contributes to the labor market data.

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 CTT155 course learning outcomes and objectives align with the program mission and goals. This Reviewer found that the CTT155 course has listed measurable outcomes that can be stacked and latticed. The NAICS (Professional, Scientific, and Technical Services) industry sector for CTT140 has been categorized as: *541519: Other Computer Related Services*. (See: [https://www.census.gov/svsd/www/services/sas/sas\\_summary/54summary.htm#sectordescription](https://www.census.gov/svsd/www/services/sas/sas_summary/54summary.htm#sectordescription))

Those completing this course would enter the Bureau of Labor Statistics occupation classification of *OES: 15:1142 Network and Computer Systems Administrators*. (See: <https://www.bls.gov/oes/current/oes151142.htm>). Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. Monitor network to ensure network availability to all system users and may perform necessary maintenance to support network availability. May monitor and test Web site performance to ensure Web sites operate correctly and without interruption. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software. May supervise computer user support specialists and computer network support specialists. May administer network security measures. Excludes "Information Security Analysts"(15-1122), "Computer User Support Specialists" (15-1151), and "Computer Network Support Specialists" (15-1152).

The job outlook for this classification is considered "As fast as average" with a projected annual increase of 8%: <https://www.bls.gov/ooh/computer-and-information-technology/network-and-computer-systems-administrators.htm>

The NCES CIP (Classification of Instructional Programs) is referenced as: *11.0901: Computer Systems Networking and Telecommunications*. (See: <https://nces.ed.gov/ipeds/cipcode/cipdetail.aspx?y=55&cipid=87259> )

This is also an accurate classification.

This course was designed for 1<sup>st</sup> year community college level students or equivalent. This reviewer found that there is no prerequisite for this course.

Course objectives were articulated using a topical outline, but require modification using measurable language.

The reviewer finds a direct correlation to the Dynamic Skills Audit and Burning Glass baseline skills as listed in the labor market data.

**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 measurable outcomes.			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 – Outcomes/Learning Objectives should be written using measurable verbs, and using subjectives.

A.2 - The course prerequisites/co-requisites are indicated.

A.3 – See A1

A.4 – See A1

A.5 - Activities are scaffolded and appear to build on one another.



## 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 <sup>st</sup> year college students should possess.		X	
B.2 Core course competencies are relevant to <b>industry and employers.</b>		X	
B.3 Instruction, activities, and assignment in individual courses are relevant and engaging to <b>students.</b>		X	

B.1 - Yes. The specific course objectives clearly represent industry expectations and also are current and relevant. This course is critical in a number of fields.

B.2 - Yes. Core competencies are relevant to industry and employers and evidence of this was verified using the Burning Glass labor market data relative to STEM occupations (<http://burning-glass.com/research/stem/>) and the Dynamic Skills Audit Summary. This Reviewer took the interview summaries from Advisory Board members, current job openings and descriptions and matched them directly to all ten of the listed course objectives.

B.3 – Yes. Activities and instruction defined in the course outline offer real-world application in design and modeling that are required of any person 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:

Instructional materials being delivered achieve stated course objectives and learning outcomes. A formal course review was conducted that address more specifically course content and instructional design processes. However, in this SME report, specific findings in this section relate specifically to the overall instructional materials which contribute to the ten specific course outcomes.

**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		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		X	
C.4 The instructional materials are appropriately designed for the level of the course.		X	

C.1 - Yes. Instructional materials are directly relevant to the course outcomes.

C.2 - No. The purpose of the instructional materials was not clearly explained.

C.3 - Yes. A variety of projects were identified. The Reviewer recommends engaging small group projects to satisfy particular learning outcomes.

C.4 - Yes. The rigor matches 1<sup>st</sup> year college entry students. Reviewer also noted the rigor would be acceptable for all students from all demographics.

## 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

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	

### Findings include:

Assessment strategies use established ways to measure effective learning, evaluate student progress by reference to stated learning objectives, and are designed to be integral to the learning process.

### Table: Measurement of effective learning

- D.1 - Yes. Grading is broken into several components and provides opportunity for a variety of course activities. The Reviewer applauds this variety and balance in grading.
- D.2 - Yes. This is somewhat implied. The assessments and activities appear to align with stated course-level objectives. This can be strengthened through describing this alignment/crosswalk.
- D.3 – No. Supporting evidence was not provided that indicates the process for evaluating student work.
- D.4 – Yes. This Reviewer found sequenced and varied grading strategies, including assignments, participation, and assessments. This Reviewer encourages this variety.

