

# Formal Evaluation and Subject Matter Expert Summary Report



## Maine is IT!

INFORMATION TECHNOLOGY  
A CONSORTIUM OF MAINE'S SEVEN COMMUNITY COLLEGES

### CTT150

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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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This workforce solution was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The solution was

**Course Review for:** Maine is IT  
**Course:** CTT150: Introduction to Microcomputer Hardware II  
**Reviewed by:** Anna J. Catterson, Ph.D.  
**Date:** June 27, 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	<b>3</b>
1.2 Learners are introduced to the purpose and structure of the course.	3	<b>2</b>
1.3 Etiquette expectations (sometimes called “netiquette”) for online discussions, email, and other forms of communication are clearly stated.	2	<b>1</b>
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	<b>2</b>
1.5 Minimum technology requirements are clearly stated and instructions for use provided.	2	<b>1</b>
1.6 Prerequisite knowledge in the discipline and/or any required competencies are clearly stated.	1	<b>1</b>
1.7 Minimum technical skills expected of the learner are clearly stated.	1	<b>0</b>
1.8 The self-introduction by the instructor is appropriate and is available online.	1	<b>0</b>
1.9 Learners are asked to introduce themselves to the class.	1	<b>0</b>
<b>Total</b>		<b>9</b>

**Comments:**

**1.1:** Even for face-to-face (F2F) courses, a link to an online course component is helpful. If there is a supplemental course, please provide information to students on how they can access this information.

**1.2:** The purpose and structure for the course is explained in the syllabus; however, this is only a short paragraph. Consider strengthening this description.

**1.3:** Etiquette expectations (sometimes called “netiquette”) for any online discussions, email, and other forms of course communication were partially covered. This would relate to both F2F AND online environments. Examples include:

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

**1.4:** Some course and institutional policies were covered in the syllabus: The attendance expectation were described. The Reviewer recommends adding a live link to these policies from the college web site/handbook.

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

**1.6:** A prerequisite/co-requisite course was indicated; CTT150.

**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:** The Reviewer encourages use of asynchronous discussions outside of class. Student introductions and short bio builds a learning community.

<b>B. Learning Objectives &amp; Competencies (15 points total)</b>		
2.1 The course learning objectives, or course/program competencies, describe measurable outcomes.	3	<b>0</b>
2.2 The module/unit learning objectives or competencies describe outcomes that are measurable and consistent with the course-level objectives or competencies.	3	<b>0</b>
2.3 All learning objectives and competencies are stated clearly and written from the learner's perspective.	3	<b>0</b>
2.4 The relationship between learning objectives or competencies and course activities is clearly stated.	3	<b>0</b>
2.5 The learning objectives or competencies are suited to the level of the course.	3	<b>3</b>
<b>Total</b>		<b>3</b>
<b>Comments:</b>		
<p><b>2.1:</b> Unlike CTT150; this course has no direct course learning outcomes or objectives. There is a bulleted list that reviews topics; but these are not course outcomes or objectives. The syllabus should include both first level and second level outcomes. Please include. You can take these directly from the CompTIA Certification exam. Use the recommended outcomes from the certificate for this course.</p> <p><b>2.2:</b> No, there are no written course outcomes or objectives therefore this does not apply.</p> <p><b>2.3:</b> No.</p> <p><b>2.4:</b> No relationship between activities and the learning outcomes.</p> <p><b>2.5:</b> The course topics appear to be suited to the level of the course.</p>		

<b>C. Assessment &amp; Measurement (13 points total)</b>		
3.1 The assessments measure the stated learning objectives or competencies.	3	<b>3</b>
3.2 The course grading policy is stated clearly.	3	<b>3</b>
3.3 Specific and descriptive criteria are provided for the evaluation of learners' work and are tied to the course grading policy.	3	<b>3</b>
3.4 The assessment instruments selected are sequenced, varied, and suited to the learner work being assessed.	2	<b>2</b>
3.5 The course provides learners with multiple opportunities to track their learning progress.	2	<b>0</b>
	<i><b>Total</b></i>	<b>11</b>
<b>Comments:</b>		
<p><b>3.1:</b> The Reviewer recommends expressing a 'crosswalk' to course learning objectives. eg, map the activity/assessment to the course objectives more clearly. The assessments/activities were indicated in very broad terms using a topical outline. Consider developing/expressing these in more detail. One example would be to provide a grading rubric to students or some sort of explanation of how projects will be graded and when feedback will be received.</p> <p><b>3.2:</b> The grading policy/rubric is stated in the syllabus.</p> <p><b>3.3:</b> These criteria could be expressed with more detail using a descriptive rubric.</p> <p><b>3.4:</b> 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.</p> <p><b>3.5:</b> 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.</p>		

<b>D. Instructional Materials (13 points total)</b>		
4.1 The instructional materials contribute to the achievement of the stated course and module/unit learning objectives or competencies.	3	<b>3</b>
4.2 Both the purpose of instructional materials and how the materials are to be used for learning activities are clearly explained.	3	<b>2</b>
4.3 All instructional materials used in the course are appropriately cited.	2	<b>2</b>
4.4 The instructional materials are current.	2	<b>2</b>
4.5 A variety of instructional materials is used in the course.	2	<b>2</b>
4.6 The distinction between required and optional materials is clearly explained.	1	<b>1</b>
	<b>Total</b>	<b>12</b>
<b>Comments:</b>		
<p><b>4.1:</b> The instructional materials aligns with the course topics stated in the syllabus. This could be furthered strengthened if there were well written learning outcomes.</p> <p><b>4.2:</b> The Reviewer recommends further development of the purpose of the course materials relative to the stated learning objectives. What requirements are needed for students?</p> <p><b>4.3:</b> The instructional materials were properly cited.</p> <p><b>4.4:</b> The instructional materials are current.</p> <p><b>4.5:</b> Assumed. The nature of the course suggests a variety of materials will be utilized.</p> <p><b>4.6:</b> Notation of Required v. Recommended/Optional is indicated.</p>		

<b>E. Course Activities and Learner Interaction (11 points total)</b>		
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	2
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>5</b>
<b>Comments:</b>		
<p><b>5.1</b> There are no written student learning outcomes.</p> <p><b>5.2</b> There are opportunities for interactive learning. The Reviewer applauds this variety. It is not clear how students will interact with each other however it is part of the grading policy so Reviewer notes that there is some sort of participation with other learners taking place. This should be made clearer to the students.</p> <p><b>5.3</b> 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.</p> <p><b>5.4</b> Participation expectations are not clearly stated, other than the Attendance Policy and in the Grading categories.</p>		

### 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
<b>Total</b>		<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.

<b>H. Accessibility and Usability (12 points total)</b>		
8.1 Course navigation facilitates ease of use.	3	<b>3</b>
8.2 Information is provided about the accessibility of all technologies required in the course.	3	<b>3</b>
8.3 The course provides alternative means of access to course materials in formats that meet the needs of diverse learners.	2	<b>2</b>
8.4 The course design facilitates readability.	2	<b>2</b>
8.5 Course multimedia facilitate ease of use.	2	<b>2</b>
<b>Total</b>		<b>12</b>
<b>Comments:</b>		
<p><b>8.1:</b> Yes, the units appear to be aligned with the CompTIA exam as well as with the textbook.</p> <p><b>8.2:</b> 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.</p> <p><b>8.3:</b> 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.</p> <p><b>8.4:</b> Implied. Consider processing this course through an ADA checker. Webaim is one such option. <a href="http://wave.webaim.org">http://wave.webaim.org</a></p> <p><b>8.5:</b> 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.</p>		

**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:** CTT150  
**Course Name:** Microcomputer Hardware I  
**Date:** June 27, 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 CTT150 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 CTT150 relate to specific job openings. This is a foundation course and introduces students to basic hardware components. There are several jobs that require a more detailed understanding of A+ and some even require the certification. Because this course is a fundamental course, the jobs found that rely only on this course were few. More courses that could stack and lattice would be most beneficial to students applying for a career in this field.
2. Current job openings list specific duties that relate to CTT150
3. The current Advisory Board indicates CTT150 contributes to the labor market data. The Advisory Board members touched on several items on this course specifically.

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 CTT150 course learning outcomes and objectives align with the program mission and goals. This Reviewer found that the CTT150 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: *541512: Computer Systems Design Services*. (See: <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=541512&search=2017%20NAICS%20Search>)

This U.S. industry comprises establishments primarily engaged in planning and designing computer systems that integrate computer hardware, software, and communication technologies. The hardware and software components of the system may be provided by this establishment or company as part of integrated services or may be provided by third parties or vendors. These establishments often install the system and train and support users of the system.

**Illustrative Examples:**

Computer systems integration design consulting services  
 Local area network (LAN) computer systems integration design services  
 Information management computer systems integration design services  
 Office automation computer systems integration design services

**Cross-References. Establishments primarily engaged in--**

- Selling computer hardware or software products and systems from retail-like locations, and providing supporting services, such as customized assembly of personal computers--are classified in U.S. Industry [443142](#), Electronics Stores; and
- Merchant wholesaling computer hardware or software products and providing supporting services, such as customized assembly of personal computers--are classified in Industry [423430](#), Computer and Computer Peripheral Equipment and Software Merchant Wholesalers.

Those completing this course would enter the Bureau of Labor Statistics occupation classification of *OES: 15-1190 Miscellaneous Computer Occupations*. (See: <https://www.bls.gov/oes/current/oes151142.htm>).

## **JOB SUMMARY**

### **Computer Hardware Technician.**

Provide onsite & remote Level 1 help desk / technical support in Windows & Mac environments. Monitor backups & performance of customer networks & systems. Work with vendors to provide application support. Work efficiently, productively, and safely without direct supervision. Follow documented & established processes and procedures. Follow all policies and procedures with respect to security and confidentiality of customer networks. Required skills: excellent verbal & written communication, technical problem research & resolution, strong attention to detail, high performing team player. Requirements. A Plus Certification, MCP or above. Technical college or Associates degree

**HOURS** Full-time, salaried position

Normal working hours are 9:00 to 5:00, Monday-Friday .

After hours work may be required to provide customer support

**PAY** Annual salary is negotiable (bi-weekly pay period) 30-90 day probationary period

Annual performance review

**Benefits**

Nine paid holidays: New Year's, MLK, President's, Memorial, Independence Labor, Veterans, Thanksgiving, and Christmas. Compensatory time will be given for scheduled or emergency work required to be done on a weekend or holiday. After one year, one week paid vacation, accruing at the rate of .416 days per month. After three years, two weeks paid vacation, accruing at the rate of .833 days per month. Unused vacation time cannot be carried forward to the following year. Unpaid leave (for excused absences) to be negotiated. There is no health benefit provided. Parking may be provided in designated lot in Portland. A smartphone & data service may be provided. Hardware & software for use at home for testing & remote support may be provided. Since 1992, All Computer Solutions has provided businesses across North America with over \$35M of technology solutions. We focus on High Availability and Disaster Tolerance Solutions for continuous availability for Windows based applications and services.. Fault tolerant or assured availability solutions provide continuous, 24/7 computing, even in the event of a hardware or software failure. Maintaining the state of the application can now be done on Windows and Linux platforms.. As an experienced system integrator, we are certified to deploy many of these products. All products incorporate proven technologies that make up our total solution approach delivering "zero downtime" to business-critical services.



**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 – There were no first or second level outcomes found.

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

A.3 – None listed.

A.4 – None listed.

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

## 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		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 - 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		X	
C.4 The instructional materials are appropriately designed for the level of the		X	

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

C.2 - No. The purpose of the instructional materials were somewhat explained – any technology requirements?

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		X	
D.3 Specific and descriptive criteria are provided for the evaluation of students' work and participation and are tied to the course grading			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.