# Formal Evaluation and Subject Matter Expert Summary Report



# CIS170

*Submitted to Maine is IT in fulfillment of the*
*TAACCCT grant requirements*
*By*
*Emporia State University*

*September 2016*

**Course Review for:** Maine is IT
**Course**: CIS 170 01 LB
**Reviewed by**: Mark Summey
**Date**: September 7, 2016

## 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 | **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 | **1** |
| 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* | | 11 |

**Comments:**

**1.1: A link to the LMS site was provided. Consider adding instructions on how to access the course in the LMS. Consider adding the link to the actual course.**

**1.2: The purpose and structure for the course was explained in the syllabus.**

**1.3: Etiquette expectations (sometimes called "netiquette") for online discussions, email, and other forms of communication should be covered.** *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.
- 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 were covered in the syllabus.**

**1.5: Technology requirements were stated in the syllabus.**

**1.6: Prerequisite knowledge and competencies were covered in the materials.**

**1.7: Minimum skills were covered in course materials.**

**1.8: Even in a face-to-face course, it is desirable to have an instructor introduction/biography available for students to access online. A short introduction with some personal information will humanize the instructor in an online course and allow students to access the information at any time in a face-to-face course.**

**1.9: An introduction discussion thread is desirable for students to communicate, informally, with each other outside of the class meetings.**

| 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 | **3** |
| 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 | **3** |
| 2.5 The learning objectives or competencies are suited to the level of the course. | 3 | **3** |
| *Total* | 15 | |

**Comments:**

2.1: The course learning objective are measurable.

2.2: The module/unit learning objectives are measurable consistent with the course level competencies.

2.3: The objectives clearly state what the learner is to accomplish.

2.4: The course activities clearly relate to the learning objectives.

| 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 | **3** |
| 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* | 13 | |

**Comments:**

3.1: The assessments align with the learning objectives.

3.2:  The grading policy is stated in the syllabus.

3.3: Descriptive criteria are provided for each assessment in the course. The criteria are aligned with the grading policy.

3.4: The assignments are varied and aligned with the objectives for each unit.

3.5: Eight assignments and three projects are provided to measure learner progress.

| 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 instructional materials align with the unit objectives stated in the syllabus.

4.2: The purpose of the instructional materials and their use in the course is explained and aligns with each unit assignment.

4.3: All materials were cited in the course cover page.

4.4: The instructional materials are current.

4.5: The instructional materials vary by unit and assignment.

4.6: The optional materials are clearly noted in the assignments with a 'Bonus' heading.

| 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 | **2** |
| 5.3 The instructor's plan for classroom response time and feedback on assignments is clearly stated. | 3 | **2** |
| 5.4 The requirements for learner interaction are clearly stated. | 2 | **2** |
| *Total* | | 9 |

**Comments:**

5.1: The learning activities directly support the course/unit learning objectives.

5.2: There are opportunities for interactive learning. The use of small group activities will allow interaction among the students. An example would be assigning groups to work together on a particular activity that enables them to collectively solve a problem related to the upcoming assignment.

5.3: The syllabus states that graded materials will be returned in a timely manner. Consider elaborating on 'timely manner'. Try to give students a reasonable timeline to expect feedback on assignments.

5.4: The requirements for class participation are stated in the syllabus.

| 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: The tools in the course support the unit objectives. The assignments clearly state what tools/applications are needed to successfully complete the work.

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: The technologies are readily available. A Google search for 'Eclipse Software' (required for assignment 1), returned a link for access to downloads for the software.

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

6.5: Privacy policies are usually available in the software use agreement. 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 | **2** |
| 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* | | 2 |

**Comments:**

7.1: Providing students access to technology support is very important. Don't 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. Consider providing a link to the site or instructions for students to access the services.

7.3: Access to the institutional academic support services is critical. Consider providing instructions/links to tutoring and other academic support services.

7.4: As with academic support, student wellness and support is also critical. Consider providing instructions/links to the institutional student support services.

| 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 | **3** |
| 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 | **2** |
| 8.5 Course multimedia facilitate ease of use. | | 2 | **2** |
| | | *Total* | **10** |

**Comments:**

8.1: Make sure navigation is easy and intuitive (minimum clicks to reach destination).

8.2: If students must download/install technology other than the LMS, make sure clear instructions are provided.

8.3: Text files, audio files, video files. Consider multiple delivery systems for course materials. 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: 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: If possible, embed the media player in the page to assure ease of access. Reduce the instances of outside links to multimedia.

## Part II: Employment Data

| Stakeholder Involvement and Employment Opportunities |
|---|
| Items Reviewed include:<br>• Internships, Job Shadowing Opportunities that exist with the outcomes and objectives with this course.<br>• Employment opportunities for these skills.<br>• Outcomes/Objectives are current and relate to job market. |
| |

**Findings include:**

Internships, Job Shadowing Opportunities are offered through Maine is IT and found on their website at: https://www.mccs.me.edu/our-programs/maine-is-it/. The website highlights current opportunities through newsletters and e-publications. Candidates can also learn more about courses, programs, and scholarship opportunities through Mains is IT website. Central Maine Community College has a very specific process which is detailed in the Internship Manual. Information is provided to students on the purpose of an internship, credit vs. non-credit opportunities, how to select an internship, roles and responsibilities and how to manage time accordingly. The Internship manual also provides a student assignment that outlines various soft skills industry and employers are demanding. These include ethics, confidentiality, professionalism, conduct, communication, critical thinking skills and safety/risk management. These soft skills were also addressed in Advisory Board meetings and the direct link from those meetings to the course and then to the internship was noted by this reviewer. One special notation on the internship process was a final evaluation at the conclusion of the internship. Good follow-through has been documented and the offerings of internships and job-shadowing opportunities exist for students enrolled in CIS170.

After reviewing these opportunities, the reviewer is providing a few examples of current job openings that list specific job duties related the course outcomes for CIS170.

**Employment Opportunities** exist for computer programmers in the Wells, ME area and within a 25-mile radius. Current job openings exist: Sweetser Application Specialist (http://www.jobsinme.com/seek/resultdetail.aspx?jobnum=1237935), Sweester Support Application Developer II (http://www.jobsinme.com/seek/resultdetail.aspx?jobnum=1234512). Both of these jobs have a direct correlation to CIS170 and require an Associate's Degree. Critical thinking, problem solving, general programming knowledge, troubleshooting experience and attention to detail are a direct correlation to course learning objectives. NCS Global has also posted five positions within the past six months for computer technicians specializing in programming and troubleshooting; Associates Degree required or certificate. A current job opening is available at the time of this report and can be found: http://www.jobsinnh.com/seek/resultdetail.aspx?jobnum=1146306&_ga=1.226453018.1060497270.1473256408. Direct correlation to the learning objectives on the course syllabus were found and language that was identified includes: "…hands-on performing various tasks including …testing, cataloging, inventory management, cross-functional activities and issues. Programming software/hardware troubleshooting is a must…". The outcomes and objectives for this course directly match to the current job market in the Wells, ME area extending to a 25-mile radius.

## Part III: Creative Commons

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|---|
| |
| Items Reviewed include: |
| • Creative Common license (including graphic) is represented on course materials. |
| |
| **Findings include:** |
| |
| Reviewer noted that all academic supporting materials listed the Attribution BY licensing; this was evident and consistent throughout. No other notations. |

**Course**: CIS 170 01 LB
**Reviewed by**: Anna J. Catterson, Ph.D
**Date**: September 15, 2016

**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 CIS170, 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 York County for graduates from an AAS in Information Technology, or those completing a certificate program. It was also found by this reviewer that the skills mastered in CIS170 relate to specific job openings.
2. Current job openings list specific duties that relate the Problem Solving course, CIS170.
3. The CIS170 course is a partial fulfillment of the AAS in Information Technology degree and the current Advisory Board has contributed 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 CIS170 course learning outcomes and objectives align with the program mission and goals. This reviewer found that the CIS170 course has listed measurable outcomes which can be stacked and latticed. The industry sector for CIS170 has been categorized as: 5415 Professional, Scientific, and Technical Services-Computer Systems Design and Related Services. The reviewer finds that this classification is correct. Those completing this course would enter the occupation classification of SOC:15-1131 Computer Programmers. The CIP (Classification of Instructional Programs) is referenced as: 11. This is also an accurate classification. This course was designed for 1$^{st}$ year community college level students or equivalent. This reviewer found that no other pre-requisite knowledge should be noted and the rigor of the course objectives is consistent with 1$^{st}$- year community college students.

Course objectives include:
1. Describe the process of converting source code into an executable binary.
2. Use the programming process to design, implement, test, and debug programs.
3. Create programs that use simple I/O, conditionals, looping, and functions.
4. Create simple programs using new and existing objects and classes.
5. Explain the reasons for using different formats to represent numerical data.
6. Defend the importance of types and type-checking in abstraction and safety.
7. Apply the techniques of structured decomposition of a program into sub-pieces.
8. Describe problem-solving strategies that are useful in debugging.
9. Create algorithms for solving simple problems.
10. Discuss the importance of algorithms in the problem-solving process.
11. Describe how classes support encapsulation and information hiding.
12. Discuss how object-oriented software is tested.

These course objectives have been aligned to the course outline and referenced in specific assignments; the reviewer finds this extremely helpful and to be a direct correlation to 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 | Accomplished | 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 courses. | X | | |
| A.5 Instruction, activities, and assignments in courses are scaffolded from course to course, and throughout the program. | X | | |

A.1 – CIS170 clearly articulates specific learning outcomes that directly map to specific outcomes and assignments. The assessment of these can easily be mapped and reported on.

A.2 – Course suggests "What other things are required?"; reviewer recommends listing the keyword "Prerequisites or other required content" to be included on the course syllabus. Prerequisites is typically used to ensure articulation and transfer of courses; also helps with stacked and latticed components.

A.3 – All course objectives are measurable; excellent job identifying skills that can be measured.

A.4 – Providing a background in programming and an overview of different programming languages enables the course to be taught to 1st year college students. As stated in the course outline, items 1 and II provide an introduction to basic programming languages and gives some historical context of how they have been applied in industry. The reviewer also noted that the terminology listed in the Course Outline was a direct link to the some of the Burning Glass key terms found in the labor market reports. This is exceptional; course reviewer so noted.

A.5 – Activities listed in CIS170 were noted in other courses in the program creating a stacked and latticed approach to the program(s).

**\*\*Reviewer Note:** While the course outcomes are clearly stated and contain very specific measurable measures, it would also be recommended to include the program mission or goals in the course syllabus for clear assessment measuring. A deeper assessment could possibly be conducted that would match the course learning outcomes to specific program outcomes (or certificate). This would illustrate a direct impact on student learning.

## 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 | Accomplished | Satisfactory | Not Satisfactory |
|---|---|---|---|
| B.1 Course competencies represent industry's expectation of the overarching knowledge, skills, and abilities that 1st year college students should possess. | X | | |
| B.2 Core course competencies are relevant to **industry and employer**s. | X | | |
| B.3 Instruction, activities, and assignment in individual courses are relevant and engaging to **students**. | X | | |

B.1 – Yes. The specific course objectives clearly represent industry expectations and also are current and relevant.
B.2 – Yes. Core competencies are relevant to industry and employers and evidence of this was verified using the Burning Glass labor market data 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 nine of the twelve listed course objectives.
B.3 – Yes, activities and instruction offer real-world application. Reviewer suggests an additional activity to be included: Project Management (PM) skills. Incorporation of group projects with an assigned PM will allow students to simulate a team environment and learn valuable PM skills and software like Asana or Microsoft Project. Project management was referenced in two current job openings that require the specific skills that this course addresses.

## 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 (*note: all program/course materials are deliverable under CC BY licensing*). 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 twelve specific course outcomes.

**Table: Instructional materials and their direct link to course outcomes**

| Standard Reviewed | Accomplished | 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 outline for CIS170 highlights specific assignments on a weekly basis. All materials relate to the direct course outcomes.
C.2 – Yes. The syllabus clearly articulates the expectations of each student.
C.3 – Yes. A variety of assessment and projects were identified. The reviewer did recommend a group project that would include PM skills in addition the twelve learning outcomes.
C.4 – Yes. The rigor matches 1st year college entry students. Reviewer also noted the rigor would be acceptable for all students from all demographics.

After reviewing the instructional materials it was noted that homework was listed at 25 points for each; 100 points for projects, 25 points for quizzes and exams are worth 100 points. To further clarify, reviewer recommends an outline of all assignments and their total point value. The reviewer did appreciate the section on how your grade is computer; this is clear and definitive. Suggest adding the outline and due dates for further clarification.

## 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:**

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. Reviewer compared and contrasted the learning outcomes listed for CIS170 to effect, best practices in assessing student learning. Those items have been identified and listed in the table below.

**Table: Measurement of effective learning**

| Standard Reviewed | Accomplished | 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 course evaluation criteria/grading policies are stated in the course. Two sections discussed assessment measures: 1) How much are assignments worth? And 2) How your grade is computed. Reviewer suggests including a grading scale with the total points and levels of points to reflect what grade students would earn. While there is mention to that in narrative form ("…you would have earned 84.0%..."), this is unclear and may be perceived incorrectly. It would be best to place a grading scale in the course as well as an outline of assignments and total points possible.

D.2 – The course-level assessments do measure the stated learning objectives and are consistent with course activities and resources. The course competencies are sequenced appropriately and the assessment instruments compliment that in a consistent pattern throughout the course. The reviewer appreciates the consistency in the course as this is ideal for student learning to occur.

D.3 – The reviewer did not find any specific or descriptive criteria that was provided for the evaluation of student work and no visual representation of how the course work ties into the grading policy. As mentioned previously, this could be solved with a simple outline listing each assignment, the due date, and total points possible. In order to encourage students, especially in this particular field, it would be best practice to encourage them by listing assignments and due dates early so students are prepared for their learning.

D.4 – The assessments are varied and the method of delivery was listed as a hybrid course; the reviewer appreciates the varied course assessment techniques as this is a best practice for increased student learning.