Formal Evaluation and Subject Matter Expert Summary Report

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

CAD105

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

EMPORIA STATE UNIVERSITY
INFORMATION TECHNOLOGY

May 2017

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Developed by Anna J. Catterson, Ph.D., Emporia State University.

Course Review for: Maine is IT
Course: CAD105 – Introduction to AutoCAD
Reviewed by: Anna J. Catterson, Ph.D.
Date: May 19, 2017

EMPORIA STATE UNIVERSITY
INFORMATION TECHNOLOGY

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	**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**
Total	**9**	

Comments:

1.1: 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.

1.2: The purpose and structure for the course was clearly explained in the syllabus. The course description was very detailed and well explained.

1.3: Etiquette expectations (sometimes called "netiquette") for any online discussions, email, and other forms of course communication were partially 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.
- 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.

The instructor included a section on Classroom/Laboratory Policy and Electronic Devices and Gaming Policy that covered some of these criteria. The Reviewer commends including this language and expectation in the syllabus.

1.4: Some course and institutional policies were covered in the syllabus: The Attendance Policy and

Classroom/Lab Policy was described, but the Reviewer was unable to locate the Academic Dishonesty Policy that is common in other Maine courses. The Reviewer also recommends adding a live link to these policies from the college web site.

1.5: Technology requirements (for either F2F or online) were implied, but not expressly indicated. The assumption is that the college will provide these technologies (AutoCAD software) but that is not clear. The Reviewer recommends expressing any requirements provided by the college v. any that may need to be purchased by the student. Do students need to purchase AutoCAD or is it provided?

1.6: No prerequisite/co-requisite knowledge is listed for this course.

1.7: Reviewer always recommends including technology requirements; what should students know prior to taking this course?

1.8: There is a placeholder for the faculty information. The Reviewer encourages adding a video introduction link or a 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	**1**
2.5 The learning objectives or competencies are suited to the level of the course.	3	**3**
Total	**9**	

Comments:

2.1: The reviewer found one large course objective in paragraph format; however this should be broken down into different levels, both first and second. Here is an example of how this should appear:

Upon completion of this course, student will:

1) describe and demonstrate the process of visualization.
    a. demonstrate constructing mulitview, isometric, and section drawings.

2) demonstrate and explain the theory and practice of dimensioning.

3) explain the importance of standards in the modern technical drawing environment.

Some of the course learning objectives are expressed using action-oriented verbs that support measurable activities (eg 'create') expectations, and competencies. However, the word 'understand' is not a measurable verb for an objective. Instead consider "Design", "Develop" "Produce", "Write", "Build", "Illustrate" etc. The Reviewer encourages developing overarching learning objectives (3-5 are standard) with specific, measurable sub-objectives (3-5 for each first level objective is a good heuristic). Expressing these in a bulleted form is most common, and provides for alignment with the course activities. At the end of each course outcome, you could include a matrix that aligns to the individual activities student will be engaging in. The course outline lists these already, they just need to be matched to the individual outcomes.

2.2: Specific learning objectives were identified. 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: "Multiview drawings [Learning Objective 1]", and so forth. The course outline has a great start to this; they just need to be mapped and articulated clearly.

2.3: Yes, the paragraph description is written in a student's perspective.

2.4: A general overview of projects and activities were indicated, 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 and outcomes.

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	**2**
3.2 The course grading policy is stated clearly.	3	**1**
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	**1**
3.5 The course provides learners with multiple opportunities to track their learning progress.	2	**0**
Total	**4**	

Comments:

3.1: The assessments/activities for this course appear to be of good quality and measure the learning objectives. Reviewer did not view any actual assignments, in detail.

3.2: The grading policy/rubric is stated in the syllabus. How will grades be submitted, when and how will students receive feedback?

3.3: The Reviewer found very little descriptive criteria associated with the grading policy. Rubrics would be a great addition to this course.

3.4: There was an excellent variety of assessment strategies for this course. The application of the technology is well considered. The application of the knowledge transfer is weighted more heavily toward active learning and less toward testing. How are the drawings submitted and graded? More descriptive analysis on this would be helpful for students.

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	**1**
4.2 Both the purpose of instructional materials and how the materials are to be used for learning activities are clearly explained.	3	**1**
4.3 All instructional materials used in the course are appropriately cited.	2	**0**
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	**7**	

Comments:

4.1: The instructional materials aligns with the course topics stated in the syllabus. However, further development of the learning objectives is critical. That is how learning achievement is measured. (eg, did the student learn what is expressed in the stated learning objectives?)

4.2: The purpose of the instructional materials in the course has not been explained.

4.3: The instructional materials were not cited in the syllabus. What other references are provided for AutoCAD?

4.4: The instructional materials are current.

4.5: The instructional materials by unit and assignment.

4.6: Implied.

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	**0**
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**
Total	**3**	

Comments:

5.1: Reviewer noted that drawings are a major component to this course; how many drawings? What are the grading specifics and how do they tie in the learning outcomes? This is additional information that needs to be included.

5.2: Reviewer did not see any opportunity for peer-to-peer interaction.

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 vague.

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	**0**
Total	**8**	

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: Certain policies (eg, ADA, Codes of Conduct, etc.) are provided via extracted policy wording. However, the Reviewer was unable to locate links to privacy policies (eg, HIPAA, FERPA, non-disclosure, etc.) Consider including that language in the course syllabus.

G. Learner Support (9 points total)		
7.1 The course instructions articulate or link to a clear description of the technical support offered and how to obtain it.	3	**0**
7.2 Course instructions articulate or link to the institution's accessibility policies and services.	3	**3**
7.3 Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help learners succeed in the course and how learners can obtain them.	2	**0**
7.4 Course instructions articulate or link to an explanation of how the institution's student support services and resources can help learners succeed in the course and how learners can obtain them.	1	**0**
Total	**3**	

Comments:

7.1: 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 and a link to the Accessibility Policy. 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, Honors Programs, Health and Wellness, Advising, 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**
Total	**11**	

Comments:

8**.1:** Does this course have an online supplement? Are materials provided in a course shell for students? If so, provide link. Reviewer did not review any course supplement.

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. Here is the ADA requirements/specifications for AutoCAD: https://www.autodesk.com/solutions/government/section-508-accessibility-compliance. Reviewer recommends adding this to the course syllabus.

8.3: Please provide this link to the AutoCAD software: https://www.autodesk.com/solutions/government/section-508-accessibility-compliance.

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.

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: CAD105
Course Name: Introduction to AutoCAD
Date: May 18, 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 CAD105 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 Penobscot 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 CAD105 relate to specific job openings.
2. Current job openings list specific duties that relate to CAD105
3. The current Advisory Board indicates CAD105 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 CAD105 course learning outcomes and objectives align with the program mission and goals. This reviewer found that the CAD105 course has listed measurable outcomes (in paragraph format) that can be stacked and latticed. The NAICS (Professional, Scientific, and Technical Services) industry sector for CAD105 has been categorized as: *541420 Industrial Design Services*. (See: 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: 27:1021 Commercial and Industrial Designers.* (See: https://www.bls.gov/oes/current/oes271021.htm). The Reviewer finds that this classification is correct. Industrial designers develop the concepts for manufactured products, such as cars, home appliances, and toys. They combine art, business, and engineering to make products that people use every day. Industrial designers consider the function, aesthetics, production costs, and the usability of products when developing new product concepts. The job outlook for this classification is considered "Slower than average" with a projected annual increase of 2%: https://www.bls.gov/ooh/arts-and-design/industrial-designers.htm#tab-1

The NCES CIP (Classification of Instructional Programs) is referenced as: *50:0404: Industrial and Product Design.* (See: https://nces.ed.gov/ipeds/cipcode/cipdetail.aspx?y=55&cipid=88699)
This is also an accurate classification.

This course was designed for 1st year community college level students or equivalent. This reviewer found that there is no prerequisite for this course. 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	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 – CAD105 includes learning outcomes, but these can/should be enhanced/revised. Reviewer suggests using bullets and first/second level outcomes.
A.2 - The course prerequisites are not indicated.
A.3 – See A1
A.4 - Learning objectives are aligned to industry standards. Several occupations found tie directly to this course.
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 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. 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 – There were little materials provided to the Reviewer.
C.2 – The instructional materials could be better elaborated upon.
C.3 – Reviewer found that drawings, tests and a final exam were the three main categories but no explanation of how they are measured; consider rubrics.
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.

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.
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 – Yes, all found in the course syllabus however the direct relationship of how participation affects the grade is unclear.
D.4 – There seems to be 50% tests and 50% projects; reviewer suggests varying the activities for all types of learners.