

Course Review

To: Anna Bryant, Project Manager, Beyond Anchorage
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Subject: AET A231 – Structural Technology
Instructor: Professor Jane Ellen McKay

This course review is of the Spring 2014 offering of AET A231, Structural Technology taught by Professor Jane Ellen McKay. This class was presented concurrently to both web based distance education students via Blackboard and face to face students, which was delivered from and taught in the Architecture Engineering Technology (AET) classroom at the University of Alaska Anchorage (UAA) University Center in Anchorage, Alaska. Blackboard is the web-based learning management software used by UAA for distance delivery of classes.

The UAA course catalog describes this class as follows: “Examines structural theory and the physical principles that underlie structural behavior. Includes the use of materials in a manner to maintain structural stability against natural forces such as gravity, wind, snow and earthquakes. Covers connection details and code requirements for wood, steel and reinforced concrete.” The prerequisites for this course are undergraduate - UAA level AET or CM A101 minimum grade of C and undergraduate - UAA level AET or CM A102 minimum grade of C and undergraduate - UAA level MATH A105 minimum grade of C. This course includes a registration restriction for students as follows: “Appropriate SAT, ACT or UAA-approved math placement test scores may be used in lieu of the MATH A105 prerequisite.”

The AET A231 class is a cross-listed class with the Construction Management Program at UAA. It is a required class for the AET certificate in the specialized field of structural drafting. It is also a required class for the Associate of Applied Science (AAS) degree in Architectural and Engineering Technology which includes four fields of study in architectural drafting, civil drafting, mechanical and electrical drafting, and structural drafting. This class is an instructor paced, four credit class consisting of two lecture hours and four lab hours. According to the UAA course content guide it requires total student involvement time of 180 hours, including 30 lecture hours, 60 lab hours, and 90 outside hours.

This class was designed for class sessions meeting Monday through Thursday for five weeks. Class sessions are delivered online via Blackboard's integral web conferencing “Collaborate” module. Face-to-face students are present in the classroom for the instructors lectures while online students are viewing the class session on their computers and interact with their classmates and the instructor with microphone equipped headsets. Distance students who are unable to join the “Collaborate” sessions in real-time have access to the recorded sessions via Blackboard.

For the purposes of this review I used a rubric developed by the University of Alaska Southeast, Sitka Campus dated May 2012 for the design, review and evaluation of online classes and teaching. It is similar to rubrics used at other universities. A copy of the original rubric is provided for reference. This rubric includes the following five standards and subsections:

Standard 1 – Design of the Course

- 1.1 Course Navigation and Overview
- 1.2 Course Design and Physical Layout
- 1.3 Clearly Defined Expectations

Standard 2 – Course Outcomes/Goals

- 2.1 Course Prioritizes or Over-arching Goals Statement
- 2.2 Learning Objectives

Standard 3 – Assessment and Measurement

- 3.1 Types of Assessments
- 3.2 Specific and Descriptive Criteria are Provided
- 3.3 Sequenced and Varied Assessments

Standard 4 – Instruction Materials and Strategies

- 4.1 Instruction Materials
- 4.2 Instructional Strategies
- 4.3 Student Interactions

Standard 5 – Communication Enriched Environment

- 5.1 Designed Discourse
- 5.2 Learning Communities Established

I began my review of this course by entering the Blackboard class interface with the new online student in mind. I followed the directions on where and how to proceed through all of the class areas, materials, and assignments. I then met with the instructor to further understand her teaching approach to the class, how she handled communications with students, assessments, feedback, etc. Professor McKay provided samples of completed student assignments for my review as well as final grades for the entire class to compare results of the online students in comparison to the face-to-face students. My review of this class is organized according to the above five standards.

Standard 1 – Design of the Course

On entering the course the Announcements page welcomes the student and clearly states to proceed to the “Start Here” button. The buttons on the left side of the screen are grouped in a logical order for the different areas of the class. The Announcements page is updated by the instructor with additional information for students as the course progresses. The “Start Here” button has a very clear sequence of information and links for the student including where to find the syllabus and class schedule, email, course equipment and software requirements, and installation and configuration of the web conferencing “Collaborate” module. It ends with a “Checklist” of tasks for the student to successfully prepare for the course.

There is a “Contact Instructor” button that provides a link to the instructor's email as well as a direct phone number and list of office hours. There are also buttons on the course navigation pane for direct access to the syllabus and schedule.

On the course navigation pane there is a group of buttons linking to the “Collaborate” module, “Materials”, “Assignments”, “Exercises”, and “Tests”. Each of these buttons link to well organized folders and sub-folders.

There are several links and contacts provided for access to help for Blackboard and Collaborate as well as any special needs accommodations required by the student.

Standard 2 – Course Outcomes/Goals

Course outcomes and goals are explained in the course syllabus and cover all areas defined in the UAA course content guide. The syllabus clearly defines the instructor's expectations, grading policy, and other requirements for successful completion of the course.

The syllabus emphasizes the fast-paced nature of the five-week course. The class schedule lists all assignments, topics, tests, and due dates and is a good roadmap for the student to follow in order to keep on track.

Standard 3 – Assessment and Measurement

This course focuses structural theory and the physical principles that underlie structural behavior and students learn to do calculations that are commonly used in the building design and construction industry. Students also learn to complete structural drafting assignments as well as learning drafting standards and conventions in use in structural drafting. This class also provides the necessary instruction for math skills required to complete structural calculations.

There are five homework problem sets which are written. Students scan or photograph these assignments for submission. There are also five structural drafting projects which are completed using AutoCAD.

Structural calculations, drawing assignments and tests are submitted to the instructor primarily via email. The instructor provides feedback to the student with an comments that explains the instructors critique of the student work. This feedback is crucial to student success.

There are five tests which provide a thorough evaluation of students comprehension of the material.

Students are also required to create a solutions manual which is a compilation of homework problem set, drawing projects, study guides and tests. This manual must be mailed to the instructor for grading at the end of the semester.

The overall course evaluation is available for students to complete at the end of the semester. The evaluation is encouraged by the instructor and a link is provided on the navigation pane. However it is a voluntary evaluation and rates of completion of the survey vary substantially. Results of the evaluations were not available at the the time of this review.

Standard 4 – Instruction Materials and Strategies

The major component of the success of students in the course are the “Collaborate” web conferencing sessions in which the instructor demonstrates the use of the AutoCAD software, explains the process of creating a drawing, adherence to drafting standards, and provides the opportunity for questions and answers between the students and instructor. The “Collaborate” sessions bring the classroom experience to the online student which enhances the static documents, videos, and PowerPoint's that are provided to the student in the course materials section of Blackboard. For students who cannot participate in the live “Collaborate” sessions, recordings are provided via Blackboard, and while they cannot actively participate, they can glean much from the recorded sessions which remain available throughout the course and can be replayed.

Standard 5 – Communication Enriched Environment

Professor McKay encourages questions and participation from the students during the “Collaborate” sessions and also via email or phone calls. If a student resides within driving distance to the campus they are also encouraged to meet with the instructor in person during office hours or by appointment. They are also able to use the AET CADD lab.

Class Composition and Final Grade Comparison

The following information was provided by Professor McKay regarding the class composition and final grades.

17 students were present at the beginning of the class.

8 students were online and 9 students were face-to-face.

Grade breakdown for the 6 online students:

A - 2
B - 2
C - 3
WD - 1

Grade breakdown for the face-to-face students:

A - 2
B - 2
C - 2
D - 1
F - 2

In examining the grade distribution between the two groups the results are very similar with the online group doing a little better than the face-to-face group. This indicates that the online class succeeded in providing quality instruction to the distance education student.

Summary

It was my pleasure to meet with Professor McKay to discuss the development of the online structural drafting class. Early in her career Professor McKay worked as a civil drafter and has been teaching in the AET department for over 30 years. In 2011 she was awarded the Constructive Woman of the Year presented each year by the Alaska Chapter of the National Association of Women in Construction (NAWIC) to women who have demonstrated outstanding capabilities as construction professionals. She also served on the Anchorage Platting Board and the Zoning Board of Examiners and Appeals. Her experience in the building design and construction industry brings valuable expertise and knowledge to her students. Her commitment to continually improving her teaching materials and methods, as well as her friendly and helpful manner is a valuable asset to her students and UAA.

Recommendations

I am very impressed with the AET faculty's accomplishments in developing and delivering instruction in computer-aided drafting in an online environment. Drafting by its very nature is a challenging and complex topic to teach in a classroom where students must learn drafting standards and conventions, math calculations, and very complicated software. The use of the "Collaborate" software is a major factor in the success of the classes because demonstration of how to create the drawings and models is crucial.

Since these classes are offered in 5-week sessions it would be very helpful for the faculty to have teaching assistants to help provide quick turnaround on drawing critiques to students. Reviewing and annotating many drawings is very time intensive.

I would also recommend that all files posted in Blackboard be ones that can open within Blackboard rather requiring downloading of the file such as PDF's rather than Word documents, Excel spreadsheets, etc.