

Incorporation of a LEED Green Associate Exam Prep Course into the Construction Management Tech. Elective Selection

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Since the development of LEED began in 1993, the construction industry has gradually been incorporating these certificates into every aspect of the field, predominantly the Commercial sector. With LEED becoming a major element impacting nearly every project, it is crucial for individuals to fully understand what LEED encompasses. As greater numbers of professionals in the industry have begun to strive for their LEED Accreditations, it has become apparent that it is far easier to prepare for these exams while in college when individuals have more time to do so rather than during employment. This project is an evaluation of the most beneficial practices for preparing for the LEED Green Associate Exam and the incorporation of these strategies into a single prep course designed as an online Tech Elective to be offered by Cal Poly so that future students can utilize the opportunity achieve their accreditations whilst in college.

How the Project Came About

This senior project came to be through a recognition that LEED has become a major aspect of construction around the world, specifically within the United States. Upon further thought development, it became apparent that the majority of schools which offer degrees specializing or concentrating in construction fail to offer an exam preparation course so that individuals may achieve their LEED Green Associates prior to entering the work force. It was my intention to create a course for which California Polytechnic State University of San Luis Obispo may offer it's students so that those not only taking the course may have an

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advantage when beginning their careers post-graduation, but also so that Cal Poly's Construction Management program may offer its students an opportunity not presented by the vast majority of other colleges and universities around the country. Upon analyzing the current Sustainability in the Built Environment (CM 317) course currently offered by the Construction Management department, it seemed most appropriate to write this course to be offered in conjunction to CM 317 to maximize the educational opportunity and provide the greatest opportunity for students enrolled in the LEED Green Associate prep course to pass the LEED GA at the end of the quarter.

Project Process

In order to develop the most beneficial course to future students to successfully pass the LEED Green Associate Exam on the first attempt, I thought it was best to pull ideas and resources from a variety of exam prep courses such as LEED Lab, Green Building Education Services, and GreenCE Sustainable Design Education. After personally going through each of these exam prep courses, I was able to successfully pass the LEED Green Associate Exam with a near perfect score. Upon doing so, I reviewed all of the materials that I had utilized to pass the exam myself and what I thought would be most beneficial to the education of future students attempting to pass the exam through the course I would write. Once compiled I successfully wrote an entire ten week course which is ready to be implemented into the Construction Management curriculum of the California Polytechnic State University of San Luis Obispo.

Deliverables

The objectives of this senior project of which I delivered on include:

- 1) Passing the LEED Green Associate exam
- 2) Compiling the most beneficial study materials from a variety of prep courses
- 3) Using these materials to write my own, original course to be offered by the Construction Management department of California Polytechnic State University, San Luis Obispo which include the following and can be seen at the end of this report:
 - a. Course Outline including the required materials, grade weight distribution, ten week course schedule, and a grading scale
 - b. PowerPoint presentations which students may be able to utilize for overarching themes and concepts of each section of the course
 - c. A midterm which can be used as a practice exam for the LEED Green Associate exam which is made up of 100 multiple choice questions written with a variety of answer techniques (Eg: True/False, Two or more correct answers, All of the above/None of the above answers, A and B or A, B and C only answers, Etc.) This was done to mimic the format of the LEED GA course and will also possess a two hour time limit to maintain further consistency with the actual exam.
 - d. A Final which is to take the actual LEED GA exam and submit proof of taking the exam through the students' "Cal Poly Portal" with the following grade distribution:

- i. 95% for attempting the exam and passing
- ii. 70% for attempting the exam but not passing
- iii. 0% for not attempting the exam

Appendix - Syllabus

California Polytechnic State University , San Luis Obispo

College of Architecture & Environmental Design

Construction Management Department

CM 318, Preparation for LEED Green Associate Exam

(Quarter Year)

Instructor: _____

Office Location: _____

Phone Number: _____

Email: _____

Office Hours: _____

Class Days/Time: Online

Class Room: N/A

Co-requisite/Prerequisite: CM 317

Reading Material:

Required Text:

LEED Green Associate Exam Preparation Study Guide LEED v4 Edition

Recommended Resources:

GBES Online exam prep course - specifically the practice tests as they assist with adapting to time constraints and the format of the exam.

Course Goals:

Provide students with ample resources and outline study techniques while emphasizing core concepts that will be covered by the LEED Green Associate exam so that said students will have the greatest opportunity to pass the GA exam at the end of this course.

CLASSROOM PROTOCOL

Email -

- The instructor may email the students or post to the Course Announcements Forum with updates on the course. Students are required to read their email and check the Course Announcements Forum within every day (24hrs). Confirm that the email from Cal Poly is forwarded to their desired email account
http://servicedesk.calpoly.edu/my_cp_support/index.html#23.
- Personal or private questions/issues can be emailed to the instructor.
- The instructor will respond to emails within 48 hours or less. Special timelines or technical issues that may prevent the instructor from returning emails will be posted in the course Announcements. Instructor Communication/Feedback
- Students should post their homework assignments to Poly Learn by 11:55 pm Sunday night of the week they are assigned. (Unless specified differently due to a Holiday.)
- The instructor feedback / response can take up to 48 hours or less.

Assignments and Discussions Evaluation -

- Students with a sound grasp of the materials and a demonstrated ability to analyze those materials at a satisfactory to above average level for under graduate students can expect to receive a grade of "B". Grades below "B" only will be assigned for performance that is less than satisfactory. The grade of "A" will be reserved to designate excellence. This will require not only a sound grasp of the materials and the demonstration of an ability to analyze them at an under graduate level, but also a clear capacity to synthesize and evaluate the materials and apply principles contained for purposes of effective communication and problem solving. There is not a preconceived designation of the number of students to receive each grade, nor any ceiling on the number of "A's" to be assigned if all students exhibit the high standard of performance expected for that grade. Incomplete grades will be granted only for extenuating circumstances and advanced discussion with the course instructor.
- It is important to review the grading rubric and follow instructions to be successful in this class.

LATE/MISSED WORK and MAKE-UP POLICY:

Unexcused late assignments will not be accepted and will be assigned a grade of 0%. This is a firm policy for which there are no exceptions.

Grade Weight Distribution:

Homeworks:	40%
Midterm:	30%
Final:	30% - To be graded by providing proof of taking the LEED GA - scores are emailed within 24 hours of taking the exam. (Passing exam= 95% on final, Not passing = 70% on final, Not attempting the Exam = 0%)
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Total:	100%

Course Schedule:

- Week One - Read Chapters One and Two
Power Point PDF: "Unit 1/2-Introduction to Green Building/About LEED"
Homework 1 - Due by Sunday at 11:55pm
- Week Two - Read Chapter Three
Power Point PDF: "Unit 3 - Location and Transportation"
Homework 2 - Due by Sunday at 11:55pm
- Week Three - Read Chapter Four
Power Point PDF: "Unit 4 - Sustainable Sites"
Homework 3 - Due by Sunday at 11:55pm
- Week Four - Read Chapter Five
Power Point PDF: "Unit 5 - Water Efficiency"
Homework 4 - Due by Sunday at 11:55pm
- Week Five - Read Chapter Six

Power Point PDF: “Unit 6 - Energy and Atmosphere”

Homework 5 - Due by Sunday at 11:55pm

Week Six - Read Chapter Seven

Power Point PDF: “Unit 7 - Materials and Resources”

Homework 6 - Due by Sunday at 11:55pm

Week Seven - Read Chapter Eight

Power Point PDF: “Unit 8 - Indoor Environmental Quality”

Homework 7 - Due by Sunday at 11:55pm

Week Eight - Read Chapters Nine and Ten

Power Point PDF: “Unit 9 - Innovation in Design”

Homework 8 - Due by Sunday at 11:55pm

Week Nine - Take Midterm (Practice Exam)

Week Ten - Take Final (LEED Green Associate Exam)

*Testing Facility in Santa Maria, Exam is on computer so I do not believe
this can be administered at Cal Poly as a proctored exam like the AIC.*

GRADING SCALE

Letter Grade	Percentage	Performance
A	94-100%	Excellent Work
A-	90-93%	Nearly Excellent Work
B+	88-89%	Very Good Work
B	84-87%	Good Work
B-	80-83%	Mostly Good Work
C+	78-79%	Above Average Work
C	73-77%	Average Work
C-	70-73%	Mostly Average Work
D+	68-69%	Below Average Work
D	65-67%	Poor Work
F	0-64%	Failing Work

Academic Dishonesty Policy:

Students are responsible for knowing the University policy regarding academic honesty. See this link on Academic Honesty Policy provided on the university website.
(<http://www.academicprograms.calpoly.edu/content/academicpolicies/Cheating>)

Attendance Policy:

Students are responsible for knowing the University policy regarding class attendance. See this link on Class Attendance Policy provided on the university website.
(<http://www.academicprograms.calpoly.edu/content/academicpolicies/class-attendance>)

Add/Drop Policy:

Students are responsible for knowing the University policies, procedures, and schedule for dropping or adding classes. See this link on Add/Drop Policy provided on the university website. (<http://www.academicprograms.calpoly.edu/content/academicpolicies/add-drop>)

Students with Disabilities:

Persons who wish to request disability-related accommodations should contact the Disability Resource Center in Building 124. Phone: (805) 756-1395 or (805) 756-6266 (TTY). Office hours are MondayFriday from 8:00 AM – 4:30 PM. Some accommodations may take up to several weeks to arrange. DRC Web Site. If you are a student with a disability, please consider discussing your needs and possible accommodations with me as soon as possible. (<http://www.drc.calpoly.edu/>)