

Guide for Instructors and Teaching Assistants of Undergraduate Courses

Guidelines for Generating and Archiving Information for Accreditation
Purposes using EWeb

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1. What is EEweb?

EEweb is a highly dynamic and sophisticated interface that has been designed by [Prof. Ali H. Sayed](#) to serve the UCLA Electrical Engineering Department on multiple levels.

EEweb provides students, teaching assistants, and instructors with an easy and uniform access to course material and to online instruction tools including an elaborate grade assistance book, a calendar, a forum space, online evaluation forms that are dynamically tied to individual course topics, and even an archive space where users can store and access samples of works and tests from prior years.

In addition, **EEweb** is designed to keep instructors and the department apprised of student performance and course performance. The interface is also designed to keep track of **ABET2000** requirements for accreditation purposes and is one of the tools used by the department to collect data for ABET purposes. **EEweb** has been specifically designed to be user-friendly; it is straightforward to use by design.

The **EEweb** system functionality and features were defined and designed by Prof. A. H. Sayed in early 2003. A first and rather sophisticated version of the system was developed during Summer 2003 with the able help of four undergraduate student programmers:

Developers

1. Prof. Ali H. **Sayed**, Designer and Project Leader.
2. Derek **Prothro**, Lead Programmer (responsible for the online course system and the ABET interface).
3. Scott **Wright**, Programmer (responsible for the instruction database).
4. Thomas **Zhu**, Programmer (responsible for the assessment reports).
5. Alena **Kwok**, Programmer (responsible for the online survey forms).

The undergraduate students Prothro, Wright, Zhu, and Kwok helped develop **EEweb** as part of their participation in the Summer 2003 [Undergraduate Research Program](#) in Electrical Engineering under the supervision of Prof. Sayed. The **EEweb** interface went online for the first time on Monday, September 22nd, 2003. Since then, the system has been undergoing developments and enhancements based on instructor and student feedback. Today, **EEweb** is a highly sophisticated online interface that raises instructor and student interaction in their courses to a new level.

Following its successful launch, the **EEweb** interface has been adopted by the UCLA School of Engineering for use by the other engineering departments under the name Courseweb.

Acknowledgements

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2. Why EEweb?

EEweb does not only function as a convenient course management interface, but it also helps the department collect essential information for accreditation purposes.

ABET2000 is fundamentally different from ABET. ABET2000 is assessment based. What this means is that in addition to formulating its *Program Educational Objectives*, the department also needs to have in place both an assessment mechanism and a feedback mechanism in order to assess how well the department is doing towards meeting its objectives and in order to take corrective actions whenever necessary. The Department has put in place several mechanisms for collecting information about the department performance and for suggesting improvements and enhancements to its programs. Instructors and teaching assistants can read about these various mechanisms under the link entitled *Department Mission* on the EEweb homepage (<http://www.eeweb.ee.ucla.edu>).

Instructors, teaching assistants, and students are all key players in helping the department assess its performance and in identifying areas of strength as well as areas of weakness. For this reason, meeting the ABET2000 requirements imposes certain added obligations on all members of the department. Nevertheless, EEweb plays a key role in helping collect and analyze information for accreditation purposes. It greatly reduces the amount of paperwork involved and it simplifies the duties of instructors and teaching assistants in keeping track of the required information.

Instructors and teaching assistants are required to assist in this task. This document summarizes the main accreditation functions that instructors and teaching assistants need to complete for each undergraduate course. Most of these functions have been automated on EEweb.

From an ABET assessment perspective, an offering of an undergraduate course will be considered complete only when the information requested below has been archived. Instructors and teaching assistants are therefore requested to make sure that this information is archived into EEweb at the end of every quarter.

3. What is expected of the Instructors?

Prior to the start of every undergraduate course, instructors should read the *Course Objectives and Outcomes Form* of their respective courses in order to familiarize themselves with the expected outcomes for the course and with the typical grading scheme for the course. These forms have been completed and filled by the instructors-in-charge of the courses. Instructors should report any desired revisions or corrections to these forms to the Vice-Chairman of Undergraduate Affairs, but only after consultation with and approval from the respective instructors-in-charge. The *Course Objectives and Outcomes Form* can be reached from the course websites.

Before an offering of an undergraduate course is considered complete from an ABET assessment perspective, instructors need to complete the following steps:

1. Upload all student grades into the EEweb gradebook, including the ABET problem grades. The grades for a course are considered uploaded only after the instructor assigns the course letter grades and presses the red button [**I am Done**]. Grades for every assignment in the course must also be entered in a timely fashion during the quarter. EEweb allows instructors and teaching assistants to finalize their course grades and press the button [**I am Done**] only after all required ABET information has been submitted.

2. Upload the information pertaining to the ABET problem, its solution, sample student responses, and the instructor evaluation of the students' performance on the ABET problem into the course archives.
3. Submit the End-of-Course Instructor Survey.
4. Encourage students to participate in the course surveys.

4. What is expected of the Teaching Assistants?

Prior to the start of every undergraduate course, teaching assistants should create the *Class Info Page* on EWeb in consultation with the course instructor. This page contains information about the instructor and teaching assistants' contact information and office hours, course grading, classroom location, and course references. The *Class Info Page* also allows instructors to design their course gradebook.

Teaching assistants should also read the *Course Objectives and Outcomes Form* of their respective courses in order to familiarize themselves with the expected outcomes for their courses. Teaching assistants should report any typos or inconsistencies to the Vice-Chairman of Undergraduate Affairs. The *Course Objectives and Outcomes Form* can be reached from the course websites.

Before an offering of an undergraduate course is considered complete from an ABET assessment perspective, every teaching assistant must make sure that the following steps have been completed:

1. All student grades must be uploaded into the EWeb gradebook, including the ABET problem grades. The grades for a course are considered uploaded only after the instructor assigns the course letter grades and presses the red button [**I am Done**]. Grades for every assignment in the course must be entered in a timely fashion during the quarter. EWeb allows instructors and teaching assistants to finalize their course grades and press the button [**I am Done**] only after all required ABET information has been submitted.
2. All information pertaining to the ABET problem, its solution, sample student responses, and the instructor evaluation of the students' performance on the ABET problem, needs to be uploaded into the course archives on EWeb. This task needs to be completed at most one week after the final examination of the course.
3. Save **hardcopies** of samples of student works during the quarter, and file the course binder containing the samples of student works with the Office of the Assistant to the Chair right after the end of the quarter. This task needs to be completed at most one week after the final examination of the course. The course binder needs to be prepared in the format explained in section 10 below. Only course binders meeting the specifications of that section will be accepted.
4. Encourage students during the discussion sections to participate in the course surveys.

5. A Typical Timeline for EWeb Related Tasks

The following table summarizes the main EWeb related tasks and how they fit into a typical course timeline. The last column can be used by instructors and teaching assistants to indicate completion of a task.

Week 1	Update Class Info Page on EWeb	Check
Week 2		
Week 3		
Week 4		
Week 5		
Week 6	Include ABET problem in midterm or in final.	✓
Week 7		
Week 8		
Week 9		
Week 10		
Last Week of Classes	Student surveys and instructor surveys go online around this time. Complete instructor survey.	✓
Examination Week	Include ABET problem in midterm or in final.	✓
Up to one Week After Final Examination	Upload student grades and ABET problem material. File binder of student works with Dept. office.	✓

6. The Gradebook needs to be completed on EWeb

The EWeb gradebook provides students with real time information on their standing in the course and on how their performance compares to other students in the class. If you do not upload the student grades regularly into the gradebook, then students will not be able to access this information in real time. This functionality is one of the mechanisms that the department has initiated in order to enhance our interaction with students and in order to provide them with continuous feedback on their performance during the quarter.

The grade information for all undergraduate courses is used by EWeb in the various reports it generates for the instructor, department, and students. If the grades are missing from the gradebook of a course, then the statistics for that course will be affected adversely. Likewise, the statistics across all courses in the department will be affected adversely.

In order to create a gradebook for your course, simply log into your course website and **[Switch into the Admin Mode]**. Click on **[Class Info]** and proceed to design your gradebook. Choose how many homework assignments your course will have, how many midterms, project reports, etc, and assign a percentage to each task. The percentages should add up to 100%.

You should enter the grades for each assignment on a regular basis in order to provide students with real time feedback on their performance in the class. After you have entered the grades for your final examination, you can compute the course average for all students by pressing the button **[Compute Overall Course Grades]**. This button uses the percentages you have specified when designing the gradebook to compute the overall course grade for all students in the class automatically. You can always modify the percentages (i.e., weights) by returning to the **[Class Info]** link. The **[Compute Overall Course Grades]** becomes an **[Update Overall Course Grades]** button after it has been pressed once. This button enables the user to re-compute the overall course grades whenever necessary. It should be noted that the ABET problem grades do not affect the overall course grades. The ABET problem grades are only used by EWeb for ABET assessment purposes.

After you enter the letter grades for your course, you should press the red button [**I am Done**]. It is important to complete this step and to press this button since it is this step that informs EEweb that you are finally done with your course grades and that EEweb can then proceed to generate its statistical reports.

8. What is the Student Survey?

The assessment and feedback mechanisms required by ABET2000 are expected to involve several constituents including a) **students**, b) instructors, c) alumni, and d) industry. The department engages its undergraduate students and collects their feedback for accreditation purposes through the online End-of-Course Student Surveys.

The Student Surveys collect student input on course material, course organization, and instruction. Besides asking students the usual questions about the quality of a course and its instruction, the surveys also list, for each course, the main topics that students are expected to have been exposed to during the course. Students are then asked to rate, on a scale from Poor to Excellent, whether they feel they have had an opportunity to learn these topics well. In this way, the surveys help remind students of the main concepts that they are supposed to have learned in their courses. Students will find such lists of main topics useful in preparation for their examinations.

Instructors should assure students that all surveys are confidential and anonymous. All student ratings are averaged and the final averages are made available to the department and to the instructors only after the quarter has ended and all course grades have been submitted. Any comments entered by students are also treated confidentially and anonymously.

Students are allowed to take a survey only once for each of their courses. A link to the [**End-of-Course Student Survey**] will appear on every course website towards the end of the quarter (typically during the last two weeks; the last week of classes and the examination week). *All instructors and teaching assistants of undergraduate courses need to encourage their students to participate in the surveys.* Student input is very important and the department treats it seriously. Student input is required for department accreditation purposes.

Whenever a student completes a survey, a note is generated by EEweb, with date and time stamps and with the name of the student, indicating that the survey has been submitted.

A sample Student Survey is shown on the next four pages for a sample course. The questions that appear on the survey are generated dynamically for each course; they are not the same for all courses. The questions are consistent with the information entered on the Course Objectives and Outcomes Form by the Instructor-in-Charge of the course.

A Sample Student Survey

Student Survey EE113 - Winter 2003 December 19, 2003

Thank you participating in the survey. Your feedback is appreciated by the department.

Welcome

Thank you for participating in this end-of-course survey for EE113.

You should know that the department treats student input seriously. Your feedback is used to identify strengths and weaknesses in our program and to help us develop an even greater program. Please take this time to give us your candid opinion.

Your responses and comments are treated confidentially and anonymously by the department. The results of this survey are made available to the department and to the instructor after the quarter has closed and after the course grades have been submitted.

1 What grade do you believe you earned in this class?

A

B

C

D

F

Pass

No Pass

Unknown

2 Indicate how well you feel this course provided you with an opportunity to learn the following skills.

1 Plot discrete-time signals, evaluate their energy and power, check for periodicity, and evaluate the period of a signal.

Poor Fair Good Very Good Excellent

2 Identify properties of discrete-time systems such as time-invariance, stability, causality, and linearity.

Poor Fair Good Very Good Excellent

3 Draw block diagrams of discrete-time systems.

Poor Fair Good Very Good Excellent

4 Solve constant-coefficient difference equations and identify their modes.

Poor Fair Good Very Good Excellent

5 Determine the zero-input and zero-state responses of systems described by constant-coefficient difference equations, and use the superposition principle to determine the complete response of such systems.

Poor Fair Good Very Good Excellent

6 Compute the linear and circular convolutions of discrete-time sequences.

Poor Fair Good Very Good Excellent

7 Evaluate the discrete-time Fourier transform (DTFT) of a sequence.

Poor Fair Good Very Good Excellent

All items listed under Question 2 are extracted from the Course Objectives and Outcomes Form. This part is different for each course.

8 Evaluate and plot the frequency (magnitude and phase) response of linear time-invariant systems, and identify all-pass and minimum phase systems.

Poor Fair Good Very Good Excellent

9 Evaluate the discrete Fourier transform (DFT) of a sequence, relate it to the DTFT, and use the DFT to compute the linear convolution of two sequences.

Poor Fair Good Very Good Excellent

10 Compute the z-transform of a sequence, identify its region of convergence, and compute the inverse z-transform by partial fractions.

Poor Fair Good Very Good Excellent

11 Use the z-transform to evaluate the transfer function of linear time-invariant systems and to identify the corresponding zeros and poles.

Poor Fair Good Very Good Excellent

12 Use the z-transform to determine difference equations from transfer function descriptions.

Poor Fair Good Very Good Excellent

13 Use the z-transform to solve constant-coefficient difference equations with initial conditions.

Poor Fair Good Very Good Excellent

14 Use Nyquist sampling theorem to choose adequate sampling rates and to understand aliasing.

Poor Fair Good Very Good Excellent

15 Four online computer assignments exposing students to typical applications of digital signal processing and asking them to carry out simple yet illustrative design projects.

Poor Fair Good Very Good Excellent

16 Explain how Digital Signal Processing concepts are used in some selected applications in speech and image processing, echo cancellation, and digital filtering.

Poor Fair Good Very Good Excellent

17 Several homework assignments delving on core concepts and reinforcing analytical skills learned in class.

Poor Fair Good Very Good Excellent

18 Opportunities to interact weekly with the instructor and the teaching assistant(s) during regular office hours and discussion sections in order to further the students' learning experience and the students' interest in the material.

Poor Fair Good Very Good Excellent

Reset

Submit and Continue

Questions about pre-requisite courses and background in basic sciences, as applicable.

3 Indicate how well prepared you feel you were for this class in the prerequisite courses EE102 (Systems and Signals) and EE110 (Circuit Analysis I)?

Poor Fair Good Very Good Excellent

4 Indicate how adequate you feel your background in the following subjects was for this class?

1 Mathematics
Poor Fair Good Very Good Excellent

2 Physics
Poor Fair Good Very Good Excellent

3 Technical Writing
Poor Fair Good Very Good Excellent

4 Computer Programming
Poor Fair Good Very Good Excellent

5 Indicate the following about the instructor:

1 How effective and organized was the instructor in delivering the course material?
Poor Fair Good Very Good Excellent

2 How effective and concerned was the instructor during class and office hours.
Poor Fair Good Very Good Excellent

3 Your overall rating of the instructor (independent of your rating of the course).
Poor Fair Good Very Good Excellent

6 Select the TA that was responsible for your specific section:

Jason Chou

Then indicate the following:

1 How effective and organized was the specified teaching assistant in conducting the discussion sections and office hours?
Poor Fair Good Very Good Excellent

2 How knowledgeable was the specified teaching assistant about the course material?
Poor Fair Good Very Good Excellent

3 How good were the communication skills of the specified teaching assistant?
Poor Fair Good Very Good Excellent

4 How concerned was the specified teaching assistant about student learning?
Poor Fair Good Very Good Excellent

5 Your overall rating of the teaching assistant.
Poor Fair Good Very Good Excellent

Questions about the instructor

Questions about the TAs

Questions about the course

7 Indicate the following about the course:

1 How effective and organized was the course material and textbook?

2 How effective were the course assignments (homework or projects)?

3 How effective were the computer or design assignments?

4 Your overall rating of the course.

8 Indicate the difficulty of this course relative to other courses?

9 Do you think you put the effort required for this class?

Use the space below to provide any comments you may have about the instructor and the course. While your identity is kept confidential, the comments will be made available to the department and to the instructor. This is your opportunity to provide the instructor with constructive feedback on what you felt about the instruction, the course, its assignments, and so forth.

Use the space below to provide any comments you may have about the performance of the teaching assistant (Jason Chou). While your identity is kept confidential, the comments will be made available to the department, the instructor, and the teaching assistant.

9. What is the ABET Problem?

As mentioned before, the department employs two assessment mechanisms that engage the instructors of its undergraduate courses:

- a. The End-of-Course Instructor Survey and
- b. The Instructor Evaluation of Students' Performance on an **ABET-related Problem.**

The ABET problem functionality engages the instructor more thoroughly than the instructor survey. It is the main mechanism used to obtain instructor feedback on whether the students in the course achieved some of the desired course outcomes. The ABET problem functionality is as follows.

Each undergraduate course in the department contributes to a list of Program Outcomes. The Program Outcomes for each course are listed on the corresponding *Course Objectives and Outcomes Form*, which can be reached from the course website. Usually, a course may contribute strongly to some outcomes and less strongly to other outcomes. While a course may contribute to several ABET outcomes, usually only a subset of its strong outcomes need to be used for ABET assessment under the ABET problem requirement.

An automated message from EEweb would notify instructors and teaching assistants which subset of their strong ABET outcomes need to be assessed. The selection of the outcomes is performed in such a way so as to ensure reasonable coverage of all program outcomes across all undergraduate courses in the department.

The ABET problem is meant to measure how well the students in a course learned some of the most significant (strong) Program Outcomes that a course contributes to. The ABET problem could be chosen as any of the following:

- One of the problems in a midterm or a final examination in a lecture course.
- One of the problems in a quiz in a laboratory course.
- The instructor's personal evaluation of a student ability to participate in teamwork, to successfully complete a design assignment, to write good technical reports, or to make good presentations. This option, in combination with others, may be useful for laboratory courses required to assess student ability to function in a team or for design courses that do not have examinations or quizzes.
- The instructor's personal evaluation of a student performance in a supervised research course (e.g., EE199).

Example of an ABET Problem Evaluation for a Lecture Course:

Assume you are required to assess whether students in your course have the ability to apply knowledge of mathematics. This kind of outcome is relatively easy to measure by means of one of your problems in the midterm or the final examinations.

Example of an ABET Problem Evaluation for a Laboratory Course:

Assume you are required to assess whether students in your course have the ability to apply knowledge of mathematics and whether they have the ability to communicate effectively. The first outcome is relatively easy to measure by means of a quiz problem. The student performance on this problem could for example account for 50% of their ABET grade. To evaluate the second outcome pertaining to a student's communication skills, an instructor may rely on his personal interaction with the student or on the quality of a student's written reports and/or oral presentations. The instructor evaluation in this case could for example account for the remaining 50% of the student ABET grade. In the ABET problem statement uploaded into EEweb, the instructor should explain how the ABET grade was assigned.

Example of an ABET Problem Evaluation for a Design Course:

Assume you are required to assess whether students have the ability to design a system, component, or process to meet desired needs and whether students have the ability to function in multi-disciplinary teams. The instructor may rely on the quality of a student's design, his/her written report, his/her oral presentation, and on observing how the student interacts with his/her fellow students in the team. In the ABET problem statement uploaded into EEweb, the instructor should explain what factors he/she took in assigning the ABET grade and that the grade was based on the instructor's personal evaluation and observations.

Procedure to Follow to Upload the ABET Problem Information:

Instructors and teaching assistants need to follow the 5-step procedure outlined below. Instructors of supervised research courses (e.g., EE199) need to follow a slightly different procedure due to the special nature of these courses. Instructors of laboratory and design courses may rely, whenever necessary, on their personal evaluation of student performance in outcomes that are not easy to measure by questions. The teaching assistant(s) in all courses are able to assist the course instructors on this important task.

- 1)** First, in course examinations (typically, midterms or final examinations for lecture courses or quizzes for laboratory courses), an instructor should include a problem, perhaps with multiple parts, whose purpose is to assess the course's contribution to specific ABET course outcome(s). The list of which outcomes to consider is sent automatically by EEweb to all instructors and teaching assistants. Instructors need not worry about any other ABET outcomes. Instructors may also use any of the regular questions in their exams or quizzes for this purpose. For EE199 courses, and for some outcomes in lab and design courses, instructors may rely on their personal interaction and discussions with the students during their supervised research work or during their lab and design work.
- 2)** Assign a grade on a scale from 0-100 to the ABET performance and enter the students' grades into the ABET column in the course grade book. For EE199 courses, enter your personal evaluation of the students' performance. For some outcomes in lab and design courses (e.g., teamwork, communication skills, etc.), instructors may also rely on their personal evaluation.
- 3)** Upload a .pdf file containing the ABET question and its solution into the Archives database of the course on EEweb. For EE199 courses, or for some lab and design courses that require more personalized evaluation by the instructor, simply indicate in your ABET problem statement which qualities you relied upon, e.g., communication skills, teamwork, professional skills, design skills, contemporary issues, etc.
- 4)** On the archives database, you will be asked to answer a few guided questions, in your capacity as the instructor of the course, in order offer your personal evaluation of the students' performance on this particular problem and how it indicates whether the course contributed to meeting its selected ABET outcome(s). You should enter your evaluation only after you have entered the ABET problem grades for your course into the gradebook.
- 5)** Upload samples of ABET problem solutions by up to 3 students in your class (1 student is enough for lab courses). For EE199 courses, you may upload copies of some student(s)' final report(s). Do not identify the students by name. Refer instead to them as Student A, B, C and so forth.

This is an important component of the ABET assessment procedure for the Department. This is the part that engages the instructor.

It is very important that instructors upload the ABET problem grades into their courses' gradebooks. These grades are used by the ABET assessment mechanism of EEweb and they enter into various reports. EEweb *will not allow instructors to submit their course grades without first providing the ABET problem grades and without uploading the required ABET problem information into the course archives.* The ABET problem grades do not affect the course grades. They are used by EEweb solely for ABET assessment purposes.

10. How to Save Samples of Student Works?

Each undergraduate course is required to save samples of student homework solutions, laboratory reports, project or design reports, and exam solutions, typically from poor to good quality. **It is recommended that instructors and teaching assistants keep track of up to three students as follows:**

- For lecture courses with over 40 students, instructors and TAs must keep track and save sample works of 3 students.
- For laboratory courses with multiple sections, sample works from one student is sufficient.
- For design courses, sample works from one student is also sufficient.

Any information identifying the students should be removed (e.g., student name, student ID number).

At the end of each quarter, the teaching assistants of all undergraduate courses must compile a binder, in consultation with the Office of the Assistant to the Chair, as follows (if a course does not have teaching assistants, this task needs to be completed by the instructor of the course). The completed binder is due at the Chair's assistant office at most one week after the final examination of the course.

Each course binder must include, in addition to the solutions, the corresponding homework questions, exam questions, lab description, and project description. A copy of the first handout (the course info handout) should be on top of the material for each course offering.

Specifically, each course binder needs to be organized as follows, for each course offering:

Page 1

A cover page listing the number of the course, the title of the course, the quarter and year, instructor's name, and teaching assistant(s)' name(s).

Page 2

A copy of the course information handout. Preferably, the completed Class Info page from EEweb should be printed and used.

Page 3

A table listing the grades for all assignments, exams, and the overall course grades of up to three (3) students. Do not identify the students. Refer to them instead as Students A, B, C.

Page 4

A histogram of the course grade distribution. This information can be obtained from the course gradebook as well. The histogram can be printed.

Pages 5-6

A printout of the ABET problem for the course, its solution, and the instructor's evaluation of the student performance on this problem. The histogram of the ABET problem grade distribution should be printed and included as well.

Page 7 (for design courses only)

A statement by the instructor of the design course indicating how the required departmental guidelines for *Capstone Design Courses* and *Multi-Disciplinary Teaming* have been satisfied for the course (see below).

Afterwards:

Copies of the homework assignments and the exams.

Afterwards:

Copies of sample student solutions of the ABET problem. For design courses, include a sample copy of a student report.

Afterwards:

Copies of work samples by Student A

Copies of work samples by Student B

Copies of work samples by Student C

Do not identify the students. Refer to them instead as Students A, B, C.

The teaching assistants may scan samples of student works into the Archives of their respective courses if desired. Please use good quality scanning. Check the scanned files before you upload them into the system. While the electronic option is convenient, teaching assistants still need to prepare the course binders as explained above with **hardcopies** of student works.

11. Criteria for Design Courses and Multi-Disciplinary Teaming

Criteria for Capstone Design Courses. ABET Criterion 4 requires that students must have a major design experience based on the knowledge and skills acquired in earlier course work and incorporating appropriate engineering standards and multiple realistic constraints. As such, the department has formulated the following criteria for its capstone design courses.

1. The capstone design project (CDP) should include at least seven weeks of direct effort. With so much time devoted to design, the course should explicitly use significant material from earlier EE courses.
2. Each student must prepare a written report and an oral presentation on the CDP. The grades for these two products must include a significant component that is based on the quality of the written work and oral presentation as distinct from the quality of the project itself. There should be a department-wide handout describing how to prepare the written report and the oral presentation. There should be explicit lectures focusing on the written report and the oral presentation. There could be some team-teaching involving the writing instructor.
3. The CDP must explicitly incorporate multiple realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability. Note that realistic design constraints such as feature size, power, range, or bit error probability are of course required, but the CDP must explicitly address at least two from the above list of constraints that are not direct engineering issues. These constraints should be explicitly discussed in lecture and appear explicitly in student reports.
4. The CDP must explicitly incorporate at least one professional standard. The instructor should give a lecture on how the standard applies, mentioning it by its official name, and the student reports should explicitly discuss the standard.
5. Each time a course with a CDP is taught, **the instructor must complete an online report on the course website documenting how these requirements have**

been satisfied. A copy of the report should also be included in the ABET folder for the course.

Criteria for Multi-Disciplinary Teaming. Students should be prepared to work well in multi-disciplinary teams. For this reason, the program requires students to participate in a team project experience involving at least four (4) students who are multidisciplinary in that they bring distinct skills to the project:

1. Students must divide the work among themselves.
2. The team must integrate the separate parts into a cohesive overall project.
3. Student's written reports must explicitly identify the student's individual contribution and discuss how the student functioned as part of a team.
4. There should be an explicit discussion in lecture that focuses on teamwork.

12. How to Access Course Websites?

All users can use their **BOL login** to access the course websites in one of two ways:

Method 1: On EWeb, click on the link [**My Homepage**] right above the faculty highlight photo (on the top right-hand side corner). Enter your **BOL username and password**. You will reach a page from which you can access any of your current or past courses.

Method 2: On EWeb, click on [**Undergraduate Courses**] or [**Graduate Courses**]. Select your course from the list. Click on **LOGIN** and use your **BOL username and password**. This method allows you to access only your current course(s). If desired, you can also create individual usernames and passwords for each course.

TAs should instruct students that if they encounter difficulties with EWeb, then their first contact should be the TAs. Only if the teaching assistants are not successful in resolving the difficulty, students should then consider contacting eweb@ee.ucla.edu for assistance. Students should include a brief description of the problem, the course number, the student name, and the name of the TA who tried to assist the student in the difficulty. The response from EWeb will be copied to the TA as well. Contacting eweb@ee.ucla.edu should be treated as a last resort by students.

13. How to Initialize a Course Website?

Instructors and TAs can initialize their course websites by following these steps:

- Go to www.eweb.ee.ucla.edu
- Click on the link [**Undergraduate Courses**]
- Select the appropriate quarter: Fall, Winter, or Spring
- Select and click on your course title.
- Log in using your default username and password.
- Change your default username and password right away.
- Click on [**Switch to Admin Mode**]
- Click on [**Class Info**]
- Proceed to fill in the required information such as:
 1. Select and upload a picture to go with your course website.
 2. Enter your contact information and update your bio if desired.
 3. Enter the contact information of the TAs.
 4. Enter the office hours of the instructor and the TAs.

5. Fill in the information pertaining to the course material and references. Consult the *Course Objectives and Outcome Form*, which can be reached from your course website. Make sure that whatever information you are entering under *Class Info* does not deviate considerably from the information already entered by the instructor(s)-in-charge of the course on the *Course Objectives and Outcome Form*. Any significant deviation must be approved by the instructor(s)-in-charge of the course and reported to the Vice Chairman of Undergraduate Affairs.
6. Design the course gradebook; consider assigning additional credit for the student surveys. Again, consult the *Course Objectives and Outcome Form*, which can be reached from your course website. Make sure that whatever information you are entering under the gradebook does not deviate considerably from the information already entered by the instructor(s)-in-charge of the course on the *Course Objectives and Outcome Form*. Any significant deviation must be approved by the instructor(s)-in-charge of the course and reported to the Vice Chairman of Undergraduate Affairs.
7. Press [**Preview**] and if OK press [**Submit**].

14. When is a Course Offering Considered Done by EEweb?

A course offering is considered done when the following steps have been completed by the instructor and TA(s):

1. All student grades have been entered.
2. All ABET problem grades have been entered on a scale of 1-100.
3. The button [**Compute or Update Overall Course Grades**] has been pressed in order to evaluate the overall grades for all students.
4. All letter grades have been subsequently entered.
5. All required ABET problem material has been uploaded into the course archives:
 - i. Copy of ABET problem and its solution (in .pdf format)
 - ii. Copies of up to 3 student solutions of the ABET problem.
 - iii. The instructor performance form of student performance on the ABET problem has been completed.
6. The instructor survey has been completed (optional by highly recommended).
7. The red button [**I am Done**] has been pressed in order to inform EEweb to proceed to evaluate the course statistics and generate the assessment reports.

Steps 1), 2), 3), 5-i), and 5-ii) can be completed by the TAs. Steps 4, 5-iii), and 6 must be completed by the instructors.

15. Summary of TA Responsibilities with Regards to Accreditation

1. Read this **EEweb Guide for Instructors and TAs**.
2. Stay alert to email communications from **EEweb**.
3. Upload the student course grades on a regular basis into the **EEweb** gradebook.
4. Encourage students during the discussion sections to participate in the end-of-course course surveys.
5. Save copies of samples of student works on a regular basis during the quarter, e.g., homework solutions, midterm and final exam solutions, quiz solutions, project reports
6. Prepare a folder for the course containing all required ABET material and organize the folder exactly in the manner explained in Section 10 of this guide. At the end of quarter, the folder must be turned over to the Chair's assistant office.
7. Upload the ABET problem and its solution in a well formatted and organized manner into **EEweb**. Upload samples of student solutions of ABET problem into **EEweb** as well.
8. Upload ABET problem grades into the gradebook of EEweb.
9. Interact with the instructor to complete the **Instructor Evaluation of Student Performance** form. The completed form must have meaningful answers to the questions.

IMPORTANT

Steps 6-9 must be completed no later than one week after the final examination of the course.