Faculty Course Assessment Report (FCAR) Instructions

The attached documents present examples of Faculty Course Assessment Reports. (When adopting for use, it is best to put together a sample document that incorporates the desired format, and then make it electronically available for use by the faculty.) The FCAR consists of the following sections:

1. Header – give subject code and course number followed by course title. If this course is offered in multiple sections by different faculty, then each faculty member is to submit an FCAR that summarizes the assessment of all sections for which he/she is responsible. Indicate the section(s) within parentheses that the Report is covering. List the academic term that the Report is for and the instructor of record for the course.

2. Catalog description – give the catalog description under which this course was taught. Providing this information will document changes made to the catalog description over time.

3. Grade distribution – list the distribution of grades for the course, including withdrawals.

4. Modifications made to course – this is an important section, as it provides contemporaneous documentation of course improvements made because of the assessment process. Please list any substantive changes made to the current offering of the course, and cite the source of the improvement (e.g. a previous FCAR, an Action Plan, minutes of a committee meeting, etc.), especially if it has been documented.

5. Course outcomes assessment – you are to list and address each outcome separately; however, performance criteria can be presented in an introductory paragraph if the same criteria are used for all outcomes. It is up to you as the instructor as to how the assessment is to be performed; multiple metrics should be employed as much as possible. There is no need to assess every question on every assignment; pick an appropriate selection of items (e.g. specific exam questions, noteworthy assignments) and use those for your assessment. Try to keep the workload down by picking just what is needed to perform the assessment. If an outcome is less than satisfactory, please use bold italics somewhere to make it stand out.

6. Components – this section is to assist with the assessment of program-level outcomes. For example, if we try to claim that one of the ways we are meeting ABET Criterion 3f is by implementing ethics across the curriculum, then we will need some hard evidence to back it up – merely saying that we’re doing it is not enough. If an ethics component was incorporated into this course, then we can use this portion of the FCAR to document specifically what was done. If you want to further back this up with an assessment of the effectiveness of what was done, feel free to do so, but it is not necessarily required. As we go through the process of revising our program outcomes and associated metrics, we might pick on a small set of courses where we demonstrate a particular ability, knowledge, or understanding which might not be part of the course outcomes; the use of a component, perhaps with its own assessment, will provide us with the needed documentation. Going through the list of outcomes in ABET Criterion 3, some of the areas that would be worth documenting if you are doing something of “sufficient substance” that it can be pointed to as an example are the following: design of experiments, professional/ethical responsibility, communications (both written and oral), impact of solutions in a global and societal context, and contemporary issues. This is not meant to be an exhaustive list; however, it does cover some of the harder items to prove for Criterion 3. By providing contemporaneous documentation here, it at least demonstrates we have addressed these items. You should list a component only when you have something to report.
7. Student feedback – please provide a synopsis of the course evaluation form feedback as it relates to the course.

8. Reflection – the reflection component is vital to the continuous quality improvement process. Use this section to record what you believe worked or not worked, what you believe was effective, not as effective as desired, or ineffective, and so forth. This could also be used to document extenuating circumstances that might have affected student performance or items that fall outside the scope of outcomes assessment measurements.

9. Proposed actions for course improvement – this is pretty much what you expect it to be: a list of items based upon your course assessment results, student feedback regarding the course, and your reflection upon the course to improve the course the next time it is offered.

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Faculty Course Assessment Report
ECCS 000 – Introduction to ECCS (sections 00 and 01) – 1.00 credit
Fall Quarter 2002 - John K. Estell

Catalog Description:
Orientation to the department. Familiarization with requirements for the majors, planning program of courses, university catalog, and library. Exposure to TLAs such as PHP, ASP, PLC, BJT, etc. Philosophical discussion of the metavariables foo and bar.

Grade Distribution:

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Modifications Made to Course:
1. Dropped lecture on introduction to computer use on campus; students found the material redundant. Source: FCAR for ECCS 000 sections 03-04 Fall Quarter 2001 by Dr. Gerthmann.
2. Included lectures on professional ethics based upon the ACM and IEEE Codes of Ethics. Source: 2002 Faculty Retreat, Action Plan #4 (Ethics Across the Curriculum).
3. Included information on using OhioLink for library searches as this technology is now available.

Course Outcomes Assessment:
(Not given for reasons of space – this is where you would state each outcome and its assessment for the course.)

Communications Component:
Each student prepared and presented a five-minute oral presentation on their favorite TLA. Instructions were given in lecture regarding how to present this material in a professional manner.

Ethics Component:
One lecture was dedicated to coverage of the ACM and IEEE Codes of Ethics and their role in daily professional life. A second lecture featured our Engineer-in-Residence discussing examples of ethics in the workplace.

Student Feedback:
On the student course evaluation forms, students indicated a general dissatisfaction with the lecture on career opportunities available to our majors. Some expressed an interest in having a mentoring program to ease the transition into college life. A couple of students indicated that we should spend less time on dealing with university paperwork and more on what it is like to be an engineer.

Reflection:
Overall, the course went well, but some areas need work. I don’t think we did a sufficient job on explaining the rationale behind our common freshman core course sequences. We should advertise the success of our alumni. The addition of the ethics lectures was well received; student enjoyed talking with a real engineer about the situations he’s encountered in the workplace.

Proposed Actions for Course Improvement:
1. Dedicate one lecture to a panel discussion session featuring alumni from each of our degree programs to discuss what they do on the job as engineers.
2. Develop new curriculum flowcharts that stress the commonality of the freshman year; use them to illustrate how students can freely change/decide their major within the department in the first year without any penalty.
Faculty Course Assessment Report
ECCS 241 – Web-Enabled Programming – 4.00 credits
Fall Quarter 2002 – John K. Estell

Catalog Description:
The World Wide Web as a programming platform. Issues, tools and applications related to distributed computing will be covered. Offered alternate years. Prerequisite: ECCS 166.

Grade Distribution:

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Modifications Made to Course:

1. Beta-tested the book, "User Centered Web Site Design: A Human-Computer Interaction Approach," by Daniel D. McCracken and Rosalee J. Wolfe. Book was used for supplementary reading and homework assignments in order to expose students to proper web site design considerations. Source: observational evaluation of the effectiveness of how this course was taught the last time through the work of three CS students who redesigned the ECCS web site indicated that students could write code, but had little understanding as to how to use it effectively in a site design.
2. Developed a web site design rubric, based in part on the subject material in the above-mentioned book, to assist students in their web site design efforts.

Course Outcomes Assessment:

This assessment is based upon an analysis of programming assignments, laboratory assignments, and examination questions. The performance criteria employed for all outcomes is based on the average score for a problem or assignment. If the average score is 70% or above, then the performance is considered to be acceptable. If the score is between 50% and 70% then there is a concern; a score below 50% is considered a weakness.

CO-1: Understand what XHTML is and why it is replacing HTML.
Question 5 on the first hourly exam covered this; all students correctly answered the question.

CO-2: Use Cascading Style Sheets effectively in a web site design.
Assignment 3 required students to develop an external cascading style sheet for a prototype web page that followed the design guidelines covered in the course; average score was 94.0%. In addition, CSS was required for the term project.

CO-3: Have sufficient knowledge of client-side and server-side programming to augment a web site design as appropriate.
Assignment 6 involved client-side programming for form verification; assignment 9 involved modification of server-side routines. The averages were, respectively, 94.7% and 93.3%.

CO-4: Understand the nature of maintaining state for a web user and the ethical implications of what information is stored where.
Question 27 on the final exam was an essay regarding the persistence of information. The average was 74.7%. Ethical implications were discussed several times in lecture, but no explicit question was given in any examination to assess this.

CO-5: Evaluate the usability of a web site design.
Students performed two exercises evaluating the usability of web site designs. In laboratory assignment #2, five external sites of varying degrees of quality were reviewed using our design rubric. The term projects had a peer evaluation component where students would evaluate the designs of the other teams. Both exercises were satisfactorily completed.
CO-6: Understand the basic principles of human-computer interaction as it relates to web site design.

All of the homework assignments involved this outcome; the average score for all assignments was 91.0%. Questions 15-24 on the final exam also involved HCI; the average score was 94.7%.

Communications Component:

Each student belonged to a team that was assigned the task of developing a web site using the programming techniques and design philosophy covered in the course. Web sites were evaluated by both peers and the professor using a rubric based on the ability to communicate information in a clear and effective manner.

Ethics Component:

Ethical considerations regarding the storing of personal data (specifically, what should be stored where) was covered in the lectures on cookies. Chapter 14 in the Web Site Design textbook covered personalization, privacy, and trust issues.

Impact of Solutions in a Global and Societal Context Component:

Globalization issues were covered in chapter 13 of the Web Site Design textbook. Students were exposed to topics such as internationalization and localization, text considerations, meaning of colors and images in different countries, formatting and page layout considerations, and user testing issues. Societal issues were covered in several areas of the course regarding the overall impact of the Web on our society; accessibility issues (such as issues involving vision, mobility, and hearing impairments) were covered in chapter 12 of the Web Site Design textbook.

Reflection:

Given my experiences with student's attempts at web site design, I believed it was necessary to teach not only the "how", but also the "why", "when", and "where" with regard to web-enabled programming. Accordingly, I selected the McCracken and Wolfe book on Web Site Design in order to bring these issues to my student's attention. In this, I believe that I was successful, as the students demonstrated at the end of the course sufficient understanding of web design issues and how client-side and server-side programming fit into this. The seniors who took the course probably found it to be too easy, as this is meant to be a sophomore-level course. I found it difficult to teach items that could have been of interest to the upperclassmen, as it would involve techniques covered in courses such as Data Structures, which had not yet been taken by the sophomores. When I tried, the sophomores felt lost, so I kept the content down to their level. The laboratory was a disappointing experience; I'm at a loss to explain why the course was designed with a laboratory component in the first place. The time spent in laboratory could have been better spent in lecture, especially as I ran out of time when covering Active Server Pages – the final topic was to have been using ASP to interface to databases, which would have been a great way to finish up the course.

Proposed Actions for Course Improvement:

1. Get rid of the weekly laboratory session – the 10 hours that would be freed up can be used to give students a crash course in database, followed by using ASP with databases. If computer access is needed, then the wireless laptop computer cart can be checked out and used in lecture for that particular day.
2. Limit time spent on JavaScript to forms submission verification and some of the useful "visual effects".
3. Look into ways to use wireless laptops as part of the classroom. For example, the laptop can be configured to act as a personal web server, with content being distributed as needed via the wireless network.
4. Find some "old" computers and a space to house them, and let them be used as intranet servers for their term project. The software being used is the same as that for a "real" (i.e. Internet) server; however, we will need to inform students about the external threats to the network that prevent us from placing their sites onto the Web (as per ONU IT policy).
5. Ask the CS Course & Curriculum Committee to reassess the prerequisite for this course – Data Structures or junior standing might be more appropriate given the desired skill level. The Committee should also review the course description so that it accurately reflects what is being taught, instead of being extremely vague. It might be worthwhile to assign a 300-level number to this course, as the topics that need to be covered are above the sophomore level.
Faculty Course Assessment Report  
ECCS 404 – Senior Design Seminar (Section 05) – 1.00 credit  
Fall Quarter 2002 - John K. Estell

Catalog Description:

Characteristics of engineering design projects. Topics include research, project planning, reliability, safety, economics, design methodology, and liability. Formal project proposals and plans are written. Prerequisite: Senior standing. (Formerly ECE 404)

Grade Distribution:

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Modifications Made to Course:

1. Presentation of projects was made in Spring Quarter 2002, prior to the Fall 2002 advanced registration period. This allowed students to know what their projects are prior to the start of the course. This also allowed students to be registered for the correct section; the previous method of selecting projects in the second week of the term required the department to process a set of administrative add/drops to place students in the correct section, which required a lot of work. Source: department chair.

2. Course was offered in conjunction with ECCS 429, CS Senior Project Definition; two computer science majors worked with the students in this section. Source: 11 December 2001 Joint Meeting of the Computer Engineering and Electrical Engineering Assessment & Evaluation Committees – review of Fall 2001 ECE 404.

3. Modifications were made to course outcomes, textbook, rubrics, and syllabi by the course coordinator. Source: Action Plan for ECCS 404, Spring Faculty Retreat, May 2002.

4. A homework assignment was added late in the quarter to help identify and address in the project proposal the considerations of economic, environmental, sustainability, manufacturability, ethical, health and safety, social and political concerns whenever applicable. Students performed this assignment individually, and then met together to discuss their findings and arrive at a consensus prior to incorporation of this material into their project proposal document. Source: suggested by ABET program evaluators during their visit in October 2002.

Course Outcomes Assessment:

This assessment is based upon an analysis of programming assignments, laboratory assignments, and examination questions. The performance criteria employed for all outcomes is based on the average score for a problem or assignment. If the average score is 70% or above, then the performance is considered to be acceptable. If the score is between 50% and 70% then there is a concern; a score below 50% is considered a weakness.

CO-1: Incorporate several areas of electrical, computer and/or other technical disciplines, which require independent work of group members.

Each person within the group has been assigned responsibility for a primary task. This outcome is being met.

CO-2: Begin a design process which includes the first four of the following steps: identification of the problem, research and information gathering, definition of the project, development of a plan, execution of the plan, verification of the design, and documentation of the design.

The first four steps are documented in the group’s written proposal. The group received an overall score of 90.0% from faculty reviewing their work. This outcome is being met.

CO-3: Identify and address in a project proposal the considerations of economic, environmental, sustainability, manufacturability, ethical, health and safety, social and political concerns whenever applicable.
A copy of each student’s homework assignment related to these ideas are in the departmental files. Faculty rated this component of their project proposal at 95.0%. This outcome is being met.

CO-4: Present a written and oral technical proposal for a group senior design project.

Copies of each group’s written proposal and a videotape of their oral presentations have been placed in the departmental files. The group received an overall score of 90.0% on their written proposal and 95.0% on their oral presentation. This outcome is being met.

CO-5: Participate on a team design project and contribute to the effort by sharing team responsibilities.

Peer-peer evaluations revealed that all students were regarded as having equally shared team responsibilities. The average peer-peer evaluation score was 88.5%. This outcome is being met.

Communications Component:

Students produced a formal written proposal and made a formal presentation of their project to their peers and departmental faculty. Proposals are on file and the presentations were videotaped.

Professional/ethical responsibility:

Students attended the presentation by Dr. Sherry Young regarding engineering liability. In this talk, she also touched upon several case studies and discussed engineering ethics in those cases. Students were exposed to professional responsibility issues by Mr. Chow and Mr. Weber from Marathon Ashland Petroleum in their presentation on project planning.

Impact of solutions in a global and societal context:

Each student addressed these issues in CO-3 in an individual homework assignment. A team consensus was then presented in their written and oral reports.

Student Feedback:

No feedback was received for this section.

Reflection:

This is the first senior design group to contain members from all three degree programs: computer engineering, computer science, and electrical engineering. The group is working well together, with each member understanding his or her role. The computer science students were deficient in design background at times; this will be corrected next year when ECCS 429 is dropped and all CS majors are required to be in this course. The new rubrics used to evaluate student performance appeared to work reasonably well. Due to the timing of the submission of the written report, there is inadequate opportunity for revisions to be made and re-submitted prior to the end of the quarter. Currently it is assumed that these revisions will be incorporated into the Final Report. One student in the group (from ECCS 429) missed several group meetings; attending all meetings needs to be made a requirement, and scored accordingly.

Proposed Actions for Course Improvement:

1. Review the effectiveness of the rubrics used in the course at the Faculty Retreat.
2. Require attendance at the scheduled weekly meetings with the faculty advisor by incorporating it into the scoring algorithm.
3. Revisit the senior design sequence at the Spring 2003 Faculty Retreat to review ways to improve our documentation efforts.
4. Require that the course coordinator dedicate one lecture specifically to the topic of engineering ethics, and each section spend one meeting with their faculty advisor to discuss ethics as it relates to their project.