

**DEPARTMENT OF MECHANICAL ENGINEERING, IUPUI
FACULTY FEEDBACK FORM FOR COURSE OUTCOMES SURVEYS**

Note: This form is to be completed and submitted to the department by instructors at the end of each semester based on the survey results of courses taught. It is designed to monitor student learning, keep track of progress and changes made in the program, and allow faculty reflect upon the results. The survey results may be viewed from the department's survey database at <http://www.engr.iupui.edu/me/assessment/fsurveys.shtml>. The completed form is to be emailed to hakay@iupui.edu (note: first save the file locally then email as an attachment).

Course: ENGR 190	Year: 2006	Semester: Fall
Instructor: Nancy Lamm	Survey Average: 4.20/4/04 (Out of 5)	Faculty Average: 4.0 (Out of 5)

1. List the outcomes that did not meet the Department's current threshold of 3.75 out of 5.0 and explain the reasons. If all or most outcomes in your course are equal to or above 3.75, please reflect upon on the lowest two or three. Please state the outcomes as fully as possible, as in the course outcomes list, with the numbers same as on the list.

5. Given sample programs, write and execute computer programs to enable robotic vehicle navigation (3.85/3.53). The robot project required that students write simple programs to enable navigation and responses to various sensors. This project was done in teams so we tried to have a student with programming experience in each group who would better understand the programming commands and be able to formulate programs to do more innovative tasks for the final project. While this worked reasonably well, the responses to this outcome indicate that many of the other students in the groups did not have a grasp of the programming concepts. One student commented on the faculty evaluation that we should have exercises where each student worked on programs at his/her own computer at the beginning of the period each day rather than relying on just one student in the group to handle that task.

9. Write laboratory and project reports according to specified instructions. (3.47/4.30)
Responses showed wide variation in the two sections. There were three group project reports due during the semester, but due to lack of time, there were no individual reports on laboratories. We did spend one day discussing report guidelines and reviewing sample reports. Certainly additional instruction in this area would be worthwhile, with an assignment to submit at least one complete individual laboratory report.

2. Identify engineering application from mechanical, electrical and biomedical engineering disciplines. (3.90, 3.93) We have tried to improve the exposure to various disciplines through project work and enrichment activities such as industry visits, attendance at professional society meetings, student design presentations. Perhaps a more intentional assignment where students identify exactly the types of skills needed for various tasks would improve their knowledge of these distinctions.

2. Were there any changes made to the course during the semester? If so, explain.

More time was spent on teamwork instruction and an additional team project where students had to submit progress reports, clearly assign roles to each team member, and ultimately reflect on the team experience. This was a homeless shelter design. Students had to design the shelter according to specifications, build a scaled down version with cardboard, and make a kit and ProENGINEER instructions for another group to build the design.

A mentoring program was introduced. Second through fourth year student volunteers were assigned as mentors for the robot project. They attended mentor training on a Saturday and then were expected to meet with their group either in class or outside of class to help the group with assigned exercises and the final project.

Seven on-line quizzes were given in lieu of a final test on the electrical/robot portion of the course to encourage students to do regular reading and to master the material in small modules.

3. Are there any recommendations for improvement?

About half of the mentors for the robot project were very actively engaged with their groups, came to class, and formed a good working relationship with the students in their group. Other mentors disappeared and did not support their respective student group. Several student groups without an active mentor did not perform as well on the final project and felt cheated. Perhaps we need to pay the mentors or provide other incentives to keep them involved.

The on-line quizzes should be continued, but it appears that we should not provide the instant feedback the system allows for. It seemed clear that by the end of the semester, certain students had access to the answers before taking the quiz. An exam over the electrical/robot part of the course should probably still be given---perhaps heavily relying on the quiz questions as a basis for exam questions.

A biomedical project would be a good addition, perhaps instead of the homeless shelter design.

4. Additional reflections/suggestions for assessment?

Even though my instructor evaluations were still low, as always seems to be the case with my Butler classes, the course outcome results were the highest ever. The improvements made in the course seem to have improved student perception of achievement of the outcomes.

Please email to: hakay@iupui.edu. Thanks.