ABSTRACT
Teaching Interpersonal Skills via Design Projects: Transplanting an Industrial Team Model

Like most projects in the real world, undergraduate design projects are usually assigned as "Team" projects. In many such courses, little emphasis is put on teaching team and interpersonal concepts to maximize team success. The capstone Chemical Engineering design course at the University of Michigan is rated by student assessments and general consensus as the most difficult and intense course in the Chemical Engineering curriculum. Under the stress of successfully completing this course during what is, typically, the students last semester, group dynamics and interpersonal relationships can be strained to the limit**.** Recognizing this problem and the need to give graduating students insights into group dynamics and the interpersonal skills required for supervision, the author incorporated into the design course, concepts he helped developed for a implementing a team based compensation system in industry. The program features lectures on team dynamics, given before teams are assigned. These explore such elements as working with people you don't "like", accessing and valuing individual skills, separating project issues from personal issues, structuring team work for inclusion and working through consensus. Suggested structures for initial meetings, which focus on team building, are presented. Design team membership is determined by the instructor by combing student-selected pairs to form the four member teams. Academic performance, prior work experience and overall diversity are considered, to the extent possible, in determining the teams. The first assignment for the each team is to develop and submit a set of Teams Rules which they will use to govern their decisions on team function and performance. These must be developed by consensus, signed and submitted for review. Simplistic or un-enforceable rules are rejected and required to be redrafted. Only after creation of governing rules are in place, does the group chose a coordinator. It is emphasized that there is no "BOSS", just an administrative coordinator to assure efficiency. During the course of the project, the supervisors will take action on interpersonal issues ONLY if all team members request it; If even one member does not agree to intervention, the students must resolve the issues themselves...just like in the "real" world. To facilitate participation and cooperation by all members of the team, two Peer Evaluations as submitted—one at mid term and the other at the end of the course. These evaluations are based on the ones developed for the industrial team assessments. The rules for utilizing these Evaluations are carefully reviewed prior to distribution of the forms. Each individual evaluates team performance, their own performance and the performance of each other member of their team. These scores are used as a guide by the project supervisors in allocating 10% of the total class grade that is based on individual participation and effectiveness. To date, the Peer Evaluations have been confidential but during the Fall 2004 term, a system will be implemented to give composited feedback to each team member on their performance. Students rate the team experience in the Process Design course one of their most valuable learning experiences.

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