Global Learning Goals: Students will effectively apply the theory and methods used in technical graphic communications through the use of the skills commonly used by a professional design technician.

Global Learning Outcomes:
1. Effectively communicate across cultures.
2. Apply an interdisciplinary and international body of theory, resources, and methods.
3. Participate in international experiences, interactions, or collaborations.
4. Recognize oneself and one’s culture through the perception of others.

World Regions: EAST ASIA

Enrollment in the course: 12 students

Semester taught: Spring 2013
I joined the Internationalization Collaborative Across Bloomington (ICAB) in the fall of 2012 and chose to internationalize my DESN 102 Technical Graphics course by adding a variety of International Learning Outcomes. I have taught this course for over 20 years, but have had other obligations the past few years that prevented me from teaching it recently. Although I still would not be teaching the course in the spring of 2013, I decided that this course would lend itself to the internationalizing of the goals and desirable outcomes espoused by the ICAB initiative. The goals for the class as stated in the Ivy Tech Course Outline of record (COR) were antiquated and in dire need of revision. The legacy version of the course did not include any global perspectives or cultural themes. I took this as an opportunity to incorporate a more global perspective into the course and submit it to the statewide curriculum committee in the summer or fall of 2013 for approval and adoption as the course objectives for this course at all campuses in the state. My participation in ICAB provided me with the tools and guidance necessary for developing the course elements including additional topics, enhanced assignments, the incorporation of guest speakers and a revised outcome assessment.

The course in the past taught technical graphic communication (the skills and knowledge of mechanical drawing) in the context of American National Standards Institute (ANSI) standards and completely ignored the standards used by the rest of the world. Technical drawings are required throughout industry in areas such as design, manufacture, assembly, and maintenance. Because these drawings are produced throughout the world, and many American designed products are manufactured in other countries, it is essential that they are globally understood and correct interpretation is required from country to country. An accurate and respected drawing communication system is essential and this is why there is a need for understanding both ANSI and ISO standards for technical drawings.

The easy part of internationalizing the course was the incorporation of a few new assignments that focused on the International Standards (ISO) for technical graphic communications, but I wanted to go deeper into the understanding of, and perception of quality in other countries. I wanted to students to explore their opinion and beliefs about perceived quality issues about products produced in foreign countries. Additionally, I wanted the students to gain an appreciation of their own opportunity here in America, but also an understanding of what other professionals in an engineering profession have gone through to get to where they are today.

The course is designed to introduce students to the ANSI and ISO standards, their meaning, how they are used, how to apply them correctly, and how to interpret them on a mechanical drawing. This was accomplished by having the students apply what they learned to a technical problem using the traditional, and much more familiar, ANSI standards. After the assignment was graded for completeness and accuracy, the student was given the exact same assignment to produce according to the ISO standards. There is quite a difference between the two systems of dimensioning and tolerancing. The new assignment required the students to visualize the object in a completely different orientation in space and to apply dimensioning and tolerancing standards that are again completely different than the ANSI standards they were more familiar.

The other desired result was for the students to gain the appreciation for opportunity they have here in the United States and what it was like for someone with the same desires and goals to
be pursuing them in a foreign country. To help accomplish this goal, I asked guest speakers for other countries that are now employed here in the U.S. to visit the class and talk about growing up and what they had to endure to get to where they are now. I had two guests — one from Honduras and another from Pakistan. Each described to the class about life, culture, and the value of education in their home country. I sent the guest a preliminary outline of question to prepare for the session.

My evaluation of the reflections and the results of the graded assignments revealed that most students gained and understanding and ability to apply ISO standards. I also believe that they gained an appreciation of what a privilege and great opportunity they have to gain a valuable education. I also believe that the student gained an understanding that “quality” built products has little to do with the country of origin, but rather the manufacturer’ adherence to quality control and manufacturing concepts.

In the future I hope to expand the number of assignments that measures the application of ISO standards to technical drawings and more guest speakers to provide a wide range of cultures and experiences for the students. I will be posting pictures on the course website of our guest speaker with biographies so students can see previous guests and read about their career as a technical professional.

Appendices
A. Course Syllabus
B. Questions
C. Student responses to guest speaker
D. Grading Rubric
E. Examples of Student Work