

Teaching Triangles Formation Tool

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Introduction

Teaching assessment in American universities is often viewed by faculty as a high-stakes endeavor with the potential to impact promotion and tenure decisions, while often falling short of actually leading to improvements in teaching and learning. Despite the important role teaching assessment plays in a university setting, it is often carried out in a perfunctory manner and relies only on student evaluations. While student evaluations can be incredibly informative, relying only on a single measure of teaching evaluations can fail to capture the full picture of what happens in the classroom.

To respond to these perceived needs and to emphasize the aim of assessing teaching in order to improve it, faculty in the Electrical Engineering and Computer Science Departments at Mines have adopted and developed a program of peer assessment of teaching called Teaching Triangles. In the program, groups of three faculty are created to take turns providing feedback to each other on their course materials and in-class teaching. Participation in the Teaching Triangles is entirely voluntary, and the results of the assessment are not used for promotion, tenure, or job performance measures. Rather, the program has been designed to be purely focused on improving teaching and learning, and is meant to supplement existing student evaluations. The program has been faculty-initiated and faculty-driven from its initiation.

Project Overview

The Teaching Triangles program has been successful by many measures. Now in its third year of implementation, over half of the faculty across EE and CS have participated, and there is interest in expanding the program across other departments on campus. However, an unexpected challenge that has arisen in the implementation of this program has been scheduling the Triangles. When forming the Triangles, there are two distinct schedules to work around: faculty identify which course they would like feedback on (with the course being taught on specific days and at a given time), and when they cannot be available to observe the teaching of others (due to other schedule conflicts – teaching, standing meetings, etc.).

Forming groups of three faculty who are each available to observe the teaching of the other members of their Triangle has proven to be an incredibly difficult problem. Currently, such

scheduling is done by hand, which is time-consuming and likely leads to imperfect scenarios, since not all possible combinations of Triangles can be explored.

Project Goals

The goal of this project would be to create a program which will form the Teaching Triangles given a set of input constraints. Specifically, we would like the following features:

- A user interface where participants can input their schedules, which include both hard constraints (e.g. teaching conflicts) and soft constraints (e.g. office hours, schedule preferences).
- The ability of the system to account for preferences. For example, users should be able to indicate if there is a colleague they would (or would not) like to be grouped with.
- The output of multiple grouping scenarios, if multiple exist given the inputs.
- A second administrator interface where inputs can be manually manipulated or outputs can be adjusted.
- The ability of the system to provide suggestions for scenarios if the number of participants is not divisible by three (for example, through creating a group of four if necessary).

Student Benefits

This is a program that could be used across Mines, as well as distributed to other institutions that might be interested in implementing a Teaching Triangle program. The students will have frequent access to the Clients, as we are also on-campus. You will have a chance to witness your program being implemented and contributing to the improvement of teaching and learning at Mines!

Team Size

3-4 students

Location

Work location is flexible. All in-person meetings would take place at Mines. In addition, Clients will be available via both email and phone contact.