

Pre-Engineering Program and Policy Review

Pedagogical Inquiry Grant Final Report

John Stratton: Computer Science, 3-2 Engineering Director (coordinator)

Frank Dunnivant: Chemistry

Kurt Hoffman: Physics

Doug Hundley: Mathematics and Statistics

Doug Juers: Physics, BBMB

Outcomes Overview

In our work over the past summer and so far this semester, we have produced multiple accomplishments that are yielding improved student experiences for students declared in or considering the 3-2 Engineering program, in accordance with our stated plans. To achieve this, we met multiple times over the summer and fall, bringing all faculty up to speed on how the program works to equip them as advisers, and working together to draft and review new materials. Notable achievements include:

- The creation of several documents and resources benefiting students and their advisers, including an [Overview and FAQ](#), a [Guide for Summer Registration](#), the [Transfer Application Process](#) overview, and arguably most importantly, a [comprehensive spreadsheet of the more than a dozen sets of partner program transfer requirements](#) which automatically shows how a student's current academic record lines up with those requirements.
- The clarification and adoption of [policies and procedures](#) for the governance of the 3-2 Engineering program.
- Drafting and passing [revisions to the faculty code](#) clarifying and streamlining the language constituting and governing Engineering and other inter-institutional programs.
- Instituting a two-advisor structure to spread the advising load around and require ourselves to create the documents and materials needed for all advisers in the program to be effective.
- Creating email and events lists for targeted announcements of events related to 3-2 Engineering
- Hosting multiple information and group advising sessions for students around 3-2 Engineering, including
 - A "majors meeting" for pre-engineering students in their third year to talk about the transfer application process they will be completing this year
 - An info session with a representative from a partner institution about their program for all interested students, faculty and staff
 - An info session targeted towards undeclared students with questions about [3-2 Engineering](#) and how to get/stay on track for that program with their upcoming course selections

Future Work Identified

Although beyond the scope of our originally planned grant, through the process of completing this work we have identified a variety of next steps for the continued improvement of the program and the student experience.

Reviewing the Engineering tracks in light of the new code language

Now that the faculty code includes some curricular guidelines for the structure of inter-institutional programs overall, we will audit our requirements for the various pre-engineering tracks to determine whether or not they are fully in compliance with those guidelines.

Create and distribute model 3-year plans for each track

When the Computer Science pre-engineering track was proposed, the proposal included a model 3-year plan for how a student could potentially complete the proposed program. Our sense is that pre-major advisors and students would be well served by having such model 3-year plans for all of the pre-engineering tracks, with notes about what courses are critical to take at specific junctures to stay on track with the compressed schedule.

Defining Learning Outcomes and Desired Assessments

With the recently passed changes to faculty code, we will begin revising the catalog entries for 3-2 Engineering in collaboration with the departments that support the different pre-engineering tracks. John Stratton has reached out to and planned visits to the various department meetings to discuss how much ownership of the 3-2 Engineering learning outcomes and curriculum the different departments want to have. John will also meet with Helen Kim to discuss assessment obligations/expectations.

Individual Statements

John Stratton

I am grateful for this grant in helping to kick-start this revamping of the 3-2 Engineering program. It was definitely a significant amount of work that went above the “normal operation” of the program, and not just because we are all new to the process. Personally, the outcomes of this grant have already greatly benefitted myself. I’ve been able to answer common questions with a link to a document rather than a lengthy email or individual conversation. I’ve also seen the

continued need for these resources, as I've heard from current and former students about how difficult it was to navigate the program if Fred Moore happened to be unavailable or difficult to reach at a crucial moment. As much as possible, I hope that our work will make information accessible to all advisors and students to navigate this program successfully. Feedback so far has been positive, and continued improvements are expected.

Frank Dunnivant

Our PIG grant was very successful and educational to me. All 3-2 advisors met and compared experiences and notes. John did a great job preparing materials that will spread the advising responsibilities to everyone. The curriculum course tracking tool will help students and advisors in planning the student's transfer credits.

Kurt Hoffman

The PIG grant supporting a review of the 3-2 program resulted in several outcomes that we put together in the regular meetings. John Stratton led the process and generated most of the talking points as we put together proposals for code changes and restructuring of the faculty oversight of the program. As a member of the Curriculum Committee I was aware of efforts to try to simplify the Faculty Code so I helped craft the Code amendments for the 3-2 program to keep the language focused on the necessary information required to define the program. We also have a solid plan for the long-term faculty management of the 3-2 program moving forward. The work supported by this PIG grant ensures the 3-2 program will be more sustainable and consistently managed in the future.

Doug Hundley

The grant gave us a good opportunity to formalize all of the things that have been passed down by word of mouth, and to meet with the group of 3-2 advisors over an extended period of time to help put together the elements of the 3-2 program as it had been, and how we envisioned it going in the future. John did a great job putting together information and spreadsheets for both us as 3-2 advisors and for the students who are thinking about the 3-2 program.

Doug Juers

Connecting with the other 3-2 advisors was helpful, as was discussing various aspects of the 3-2 program together. This made me more informed about the 3-2 program overall, and will help me in advising students going forward. It was also helpful to meet with the representative from Washington University. I think I will be able to do a better job of communicating what that school has to offer our students.