

Overview

Capstone design projects are typically performed in teams, but measuring individual participation and performance can be challenging. In the capstone design course ("Design Clinic") at Smith College, we recently developed and implemented an **industry-informed performance review process** to evaluate students and to help prepare them for the workplace experience.

To develop this process, we **reviewed** existing workplace performance review practices, **developed** our own forms for the fall and spring semesters, **implemented** individual performance reviews at the end of each semester, and **assessed** the successes and areas for improvement at the end of the academic year.

Workplace Examples

In addition to our own industry experience, we solicited examples of the performance review process and templates from Smith engineering alumni across a range of engineering disciplines in the private and public sectors.



The two most common components in industry performance reviews:

1. Goal Setting
2. Accomplishments

Implementation

We introduced the performance review process midway through the fall semester and shared a Google Drive folder with each student for their forms and documentation. We held performance reviews for 32 students over 2 days at the end of each semester.



During each review, the student described their accomplishments and goals (fall) and transferable skills (spring). The instructors asked probing questions and gave feedback orally and as live comments on the shared form; some students also took live notes.



Individual student folders



2 days per semester



12-minute blocks



2 instructors plus student

Examples of Student Work

The focus of **Goals**, **Accomplishments**, and **Transferable Skills** articulated in the review process ranged from highly specific to particular projects to quite broad and general. The majority of both Accomplishments and Transferable skills were professional in nature.

"Feel more confident in my back-of-the-envelope calculations"

"Better understand and communicate technical concepts with my teammates"

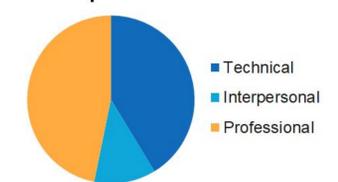
"I taught my team SketchUp which moved our concept generation phase more forward"

"I feel more confident talking about [this project] and justifying the decisions we made throughout the process"

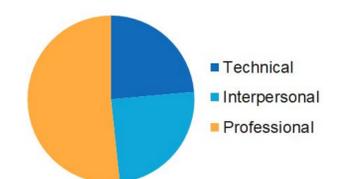
"Teamwork skills such as delegating, communicating, and establishing team dynamics"

"Accessible, thorough and consistent documentation of work on a weekly basis"

Accomplishments



Transferable Skills



Performance Review Forms

We created two forms - one for fall and one for spring - in which students could document their goals and accomplishments. We prefaced each with the intent of the performance review process. The spring form also included transferable skills with an eye to the future.

Fall 2021 Performance Review and Accomplishments Form

Name: _____
Review Date: _____
Reviewers: Design Clinic Teaching Team

The performance review process provides a framework for Design Clinic students' future growth and development. The appraisal process provides a framework for face-to-face discussion between the student and the Design Clinic Teaching Team to more fully understand the student's goals going forward and the individual contributions to date.

Part I - Goals
Identify 3-4 goals that you would like to accomplish. These may be **Technical** (like learning a new skill), **Interpersonal** (like working on a particular aspect of communication), or **Personal** (like improving time management). Regardless of the type of goal selected, it should be something that is specific, achievable, and measurable through documentation.

List of 3-4 Goals (Technical, Interpersonal, Personal) with an explanation of how they will be measured:

Describe the Goal	Describe Actions that will be Taken and When	Describe How Success Will be Measured

Part II - Accomplishments
Identify 3-4 accomplishments you've had to date in DC. Similar to your goals set, these may have been technical, interpersonal, or personal in nature. In addition to listing the accomplishments below, you should upload documentation to your performance review folder that justifies the accomplishment in a measurable way. For example, this may be part of your logbook, before and after versions of a piece of revised work, or individual contribution you are particularly proud of.

List of 3-4 Accomplishments with an explanation of the documentation provided:

Describe Accomplishment	Supporting Documentation Provided

Fall Form

Intent of Process

Goals

- What are the goals?
- What actions to take?
- How to measure success?

Accomplishments

- What are the accomplishments?
- What supporting documentation is provided?



Spring Form

Intent of Process

Goals and Accomplishments

- What are the goals?
- What accomplishments were achieved?
- What supporting documentation is provided?

Transferable Skills

- What skills will carry forward
- How will the skills be valuable after Smith?



Spring 2022 Performance Review Form

Name: _____
Review Date: _____
Reviewers: Design Clinic Teaching Team

The performance review process provides a framework for Design Clinic students' future growth and development. The appraisal process provides a framework for face-to-face discussion between the student and the Design Clinic Teaching Team to more fully understand each student's goals and accomplishments.

Part I - Accomplishments and Achieved Goals
Reflect on your personal accomplishments for the spring. These may have been tied to the goals that you set for yourself at the end of Q2 or they could be independent. Similar to the previous Performance Review, these goals may have been technical, interpersonal, or personal in nature. List each motivating goal in the first column below; if the accomplishment is not tied to a specific goal, then leave the first column blank. In the second column, describe the nature of the accomplishment, and in the final column describe documentation that serves as evidence for the accomplishment. Upload this documentation to your performance review folder.

Note: personal development is a continuous process. The expectation is not that you have "completed" all the goals you set in Q2, but rather that you have grown in your skills and confidence.

Motivating Goal (from Q2 or otherwise)	Accomplishment Achieved	Supporting Documentation Provided

Part II - Transferable Skills
Identify 2-3 of the most significant skills or aspects of your personal growth that you developed over the course of the year in Design Clinic and that you will carry with you into your professional future. These could be directly related to the accomplishments above or completely separate. Below, describe the skills and how/why you anticipate these skills will be valuable after Smith.

Describe the Skill	Describe the Value

Process Assessment

Successes

- Pre-populated form provided framework for discussion
- Discussion with students highlighted goals and accomplishments not evident in written form alone
- Time blocks allowed for good discussion while requiring little student time during exams
- Live comments on shared form provided record of instructor feedback and student reflection
- Performance reviews bookended intake interviews at course start

Areas for Improvement

- Most students did not frame goals until end of fall
- A few students were not mindful of goals they had set
- Some students completed their forms at the last minute with cursory work
- Depth of documentation varied, sometimes it did not support the form well

Conclusions and Future Work

The initial implementation of performance reviews during AY2122 has been promising, with numerous positive outcomes. The performance review process serves as an opportunity for instructors to focus on the goals and growth opportunities of individual students at the end of each semester. The process also gives students a window into ubiquitous workplace experience. In the future we hope to improve student engagement in performance review planning throughout the semester, not just at the end.

Acknowledgements

Thanks to the Smith engineering alums who shared their performance review templates and processes, and to our DC2122 students for helping us pilot this new process.