

Course Development Project Report

TEACHING Goals (last year)

Make a conscious effort to adapt my class according to feedback from the previous semester and current midterm surveys.

Clearly communicate the learning outcomes of my courses by linking each assignment to a specific outcome.

Introduce more gospel topics to class activities that require data.

Provide a full class layout at the beginning of the course.

TEACHING Report

Prior to preparing lessons for STAT 386 for the Fall 2024 semester, I reviewed personal documentation from the previous year to adjust lesson plans. This helped many class periods run more smoothly than before. To improve course transparency, I provided a full course layout at the beginning of the semester, ensuring students had a clearer understanding of the structure and expectations from the outset.

I made a conscious effort to document all daily activities along with personal reflections, allowing for more structured adjustments based on student feedback. This will be especially helpful should I teach STAT 386 again, but some of my personal suggestions should easily be transferable to STAT 486 which I will be teaching next Winter.

This semester, I transitioned to Canvas as my LMS. The module-based course outline improved student navigation of course content throughout the semester. However, one limitation was the inability to directly link labs and assignments to specific learning outcomes. To address this, I will be working with Del Scott this semester to explore potential solutions.

Incorporating gospel topics into class activities remains a challenge. While I have experimented with starting some class periods with brief summaries of recent BYU devotionals, I am still exploring more effective methods to integrate gospel principles in ways that naturally align with course material.

What are your faculty development goals for TEACHING this year?

This year I will be working closely with faculty in computer science to redevelop the curriculum for CS 180. In recent years, this course has been passed back and forth between our two departments (CS and STATS), and has been slowly developing into what it is today. With the newly accepted interdisciplinary data science program going live, we will need to make sure the course serves as a great starting place for data science students. Changes will involve new lab development (some current labs are too easy or too difficult), additional topics, and removing topics extensively covered in other courses.

I will also start teaching STAT 486 next year. I will be working closely with Dr. Tass to discuss and update course materials to better suit the needs of the statistics majors working in data science.

Should I continue to teach STAT 386 in future semesters, here are a few goals that I intend to incorporate. Some of these have direct translations into STAT 486:

- Incorporate more interactive coding exercises during lectures to provide real-time practice when I am available to guide the students.
- Incorporate short, frequent recaps of previous content to bridge student knowledge gaps.
- Introduce topics that are heavily incorporated in the final project earlier in the semester, emphasizing that those topics will be required for the project.
- Include small “coding challenges” throughout the semester; e.g., small activities with a specific problem to solve using Python code.
- Provide some materials to be reviewed before class to better incorporate a “flipped” style course.

These goals are created (in part) due to the student feedback provided in the next section.

Student Ratings

Overall Impressions (Synthesized using ChatGPT 4.0)

Students generally had very positive feedback about Dr. , describing him as an effective, organized, and supportive instructor. His ability to explain concepts clearly and provide practical examples was highly appreciated. Many students felt that the class was well-structured and valuable for their future careers.

Highlighted Positive Feedback

1. Explained Concepts Effectively

- *“Dr. was great at this! He was always willing to answer any questions as well as re-explain concepts in different ways to help his students understand.”*
- *“Wonderful job here.”*

2. Well Organized

- *“I thought Dr. did a great job organizing the course content to enhance our learning. I really enjoyed the labs, which reinforced what we learned in class.”*
- *“He put content in our class that is very important for us to know for jobs and statistics in general.”*

3. Opportunities to Get Help

- *“Dr. was super helpful and available, and always kind when any questions were asked. He goes above and beyond to help his students succeed.”*
- *“He was so understanding of our circumstances and was willing to change due dates if we needed it.”*

4. Student Engagement & Involvement

- *“I felt like Dr. created an environment where students could engage with the lesson material, ask questions, and work through things.”*
- *“The labs were super helpful. Everything we learned in class, we had to apply to some future assignment.”*

5. Respectful & Supportive Environment

- *“Dr. is very good at this. He creates an environment where students feel comfortable asking him anything, even beyond academics.”*
- *“He was willing to take any amount of class time to answer our questions.”*

6. Intellectual & Career Growth

- *“I learned a lot in this class and it is clear that the things I learned are very useful!”*

- *“The material from this class will be used in future careers. It’s one of the few stats classes where that applies.”*

Constructive Feedback & Areas for Improvement

- Some students felt that **machine learning topics and the Streamlit app** should have been introduced earlier and taught in more depth.
- **Reading assignments and quizzes** were sometimes perceived as too long and overly detailed.
- A few students suggested adding more **interactive coding exercises during lectures** to reinforce learning.

Student Ratings (Numerical Summary)

Overall, the student ratings this semester were generally positive. In many areas, my section ratings range high/low ends exceeded the respective departmental values.

Instructor Effectiveness

Semester	Course/Section	Section Type	Credit Hours	Enrolled
Fall 2024	STAT 386 (Section 001)	DAY	3	9
Outside Hrs.	Response Rate	Sec. Uncert. Rng.	Dep.t Uncert. Rng.	AVG. GPA
2	89%	4.7 - 5.0	4.5 - 4.8	3.51

Helped Students Achieve the Aims of a BYU Education

Semester	Course/Section	Spiritually Strength. Section Rng.	Spiritually Strength. Dept Rng.	Intl. Enlarg. Section Rng.
Fall 2024	STAT 386 (Section 001)	65-100	52-66	100§
Intl. Enlarging Dept Rng.	Character Building Section Rng.	Character Building Dept Rng.	Life. Learning Section Rng.	Life. Learning Dept Rng.
78-89	65-100	69-82	65-100	66-79

Scholarship Development Goals final report

SCHOLARSHIP Goals (last year)

- Include student researchers on nearly every project and in each stage of the publication process.
- Publish two conference proceedings papers (one in the winter/spring and the other in the fall).
- Submit my IDR grant and at least one other target grant from NIH or NSF relating to the IDR proposal.
- Expand one of the conference reports to a scientific journal paper (Nature Methods) for submission in 2025.

SCHOLARSHIP Report

This year, I wrote three papers published in conference proceedings, two of which heavily involved BYU student authors. The students were mostly involved in the exploratory/coding phases but also participated in the writing and submission process. This aligns with my goal of including student researchers in nearly every project and stage of the publication process. However, I would like to further this involvement by engaging students in the literature review and idea generation stages, which I have not yet required of students working with me.

The IDR grant was submitted and accepted last year, fulfilling my goal of submitting this grant and at least one other target grant. Two of the published papers were partially funded using IDR grant money. These two papers focused primarily on methodology and are currently in the early stages of being expanded for a journal (Nature target), aligning with my plan to expand a conference report into a scientific journal paper for submission in 2025.

Additionally, I aimed to publish two conference proceedings papers within the year—one in winter/spring and another in the fall. I achieved this goal by publishing three conference papers. Due to some minor setbacks, two papers (one lead author and one co-author) are still under review at different journals. Should either not be accepted for publication, I will revise and submit to another top journal with the updates.

What are your faculty development goals for SCHOLARSHIP this year?

- I will continue working with undergraduate students to help throughout the publication process. As I have begun working with more students, I have come to realize the diversity of background knowledge, strengths, and weaknesses they pose. I will try to tailor their experience in working as RAs to give them opportunities for growth. For some, this might involve more emphasis in earlier stages of the work (e.g., literature review), while for others this could potentially rise to works with students as the first author.
- I plan to focus more on coding best practices with the students, primarily focusing on using Git/GitHub for project management. I would like all projects to be tied to a repository to better track history and ensure the replicability of all of our projects. This is also a best practice for students with future careers involving research or code development.
- I would like to publish at least three papers in conference proceedings and to ensure the two journal articles find the best possible home should they not be accepted this round.

Citizenship Development Goals Report

2024 – 2025

CITIZENSHIP Goals (last year)

- I would like to build meaningful relationships in the department and college through my service assignments.
- I want two conference proceedings papers to be published with students I am mentoring.

CITIZENSHIP Report

My current involvement with the SRC has been fulfilling and provided an avenue for building relationships with faculty members across campus. This opportunity has opened my awareness of the importance of alumni and external outreach as a means to connect students with future employment opportunities or general contacts for support.

I have recently become involved in another, similar service assignment (not directly affiliated with BYU) as a part of the scientific organizing committee for the Red Rock Data Science conference held in southern Utah. This opportunity is still in its beginning phases but will help build a network with students and faculty interested in data science. I will be involved in advertising and organizing sessions.

What are your faculty development goals for CITIZENSHIP this year?

- I plan to become more involved in external service opportunities, such as refereeing more articles at major machine learning conferences.
- I will plan on organizing a workshop or session at a conference.
- I will continue trying to build relationships with faculty and alumni through my service at the student research conference.