How has ISU prepared me to…

Design systems or processes?

My Software Engineering coursework was primarily what prepared me for designing systems and processes. I took both required and elective courses related to software design, courses such as:

- COM S 362: "Object-Oriented Analysis and Design";
- S E 339: "Software Architecture and Design";
- S E 319: "Software Construction and User Interfaces"; and
- COM S 311: "Design and Analysis of Algorithms".

These courses gave me insight into many topics of software system design and really helped me prepare to do such work in the future. Indeed, after taking these courses, I've realized that software architecture is a field that I could see myself working in.

Formulate and solve engineering problems?

Many of the SE courses (and indeed, many other courses such as electives and general education courses) are heavily geared towards helping students learn how to solve problems. That is, after all, the goal of engineering. Through completing the assignments and projects in these courses, I feel much more prepared to solve engineering problems that I did when I started at ISU.

Assess the impact of engineering solutions in a global or societal context?

It was not so much my engineering classwork that prepared me to do this, but my language classes. Language classes, despite the name, are not solely focused on a given language, but on a culture as well. It is impossible to learn a language without also learning about the culture(s) in which it is used, as the two are very closely intertwined. In learning about a different culture, I have learned a lot about the differences between my own culture and that one, including that culture's values, beliefs, and habits. This applies well to engineering, as it has become a second nature to think about how other people might perceive a particular solution.

Consider the ethical implications of my engineering decisions?

In some of the SE courses, we cover the issue of ethics, most notably in S E 329: "Software Project Management". In this class, we discuss what ethics are and why they are very important in engineering. We review case studies related to software engineering and consider ways that we might be more aware of ethics in our profession. Along with other courses, this work has helped prepare me to always consider the ethical implications of the decisions I might help make.

What have I done at ISU to prepare to…

Work in groups?

In the Software Engineering curriculum, there are plenty of times in which students need to work in groups. There are even several classes based entirely around a group project. By having the opportunity to work in so many groups on so many different tasks, I feel that I am well-prepared to work on many diverse teams in the professional world.

Beyond engineering, I have worked in teams in various other capacities. I serve as a student leader for a student ministry at my church and I work for the Department of World Languages and Cultures as a student ambassador for the Languages and Cultures for Professions (LCP) program. Both of these positions require me to work with others, both students and supervisors, to achieve common goals, which further increases my readiness to work in teams in the future.

Recognize contemporary issues?

Some of my general education and non-engineering courses have focused on various contemporary issues. For instance, in HD FS 276: "Human Sexuality", we discussed issues related to gender and sexuality, which are currently very prominent. Doing work in these classes has tuned me in to some of the issues in the world today, which is important for engineers as we are responsible for creating products for people, who are affected by these issues.

Understand professional and ethical responsibilities?

In many of my courses, we have had guest speakers come and speak to the class. The topics varied, from general overviews about what working for a particular company was like to how a given company uses cloud-based services in its architecture. These talks helped me learn about the professional and ethical responsibilities of a software engineer directly from the source.

Did I use outside material to successfully complete my work?

There are several times when I utilized other resources to complete my work. For instance, in some of my more challenging classes, such as COM S 230: "Discrete Computational Structures", I attended the TAs' office hours when I was struggling to grasp a concept on a homework assignment. There were also times in which I utilized the ISU library's online resources—journal databases, eBooks, etc.—to find more information for assignments such as reports and essays. ISU has a wide variety of resources available to students, and although I didn't always need them, it was nice to know that they were available to me if I did.

How did non-classroom activities develop my skills?

One learning experience that greatly helped develop my ability to acquire and apply knowledge was my year-long study abroad experience in Salzburg, Austria. Living in

another country whose language is not my native language and whose culture is different from my own forced me to think differently and to adapt to the situation. These are skills that I can apply in every area of my life, including engineering work.

Attending career fairs has also helped me. Career fairs are stressful, uncomfortable, and can even be a little bit frightening. But by attending, I have gained new experience in interacting with new people who may have a significant impact on my life. This is an important skill to have that can't necessarily be taught in a classroom.

Have I undertaken any additional learning?

Throughout my time at ISU, I have taken some time to learn some things on my own. For example, after taking CPR E 186: "Introduction to Computer Engineering and Problem Solving II", a semester-long project course in which my group created an Android application, I continued to teach myself how to develop native Android applications. I was able to create a scorekeeping application for my family. Doing this extra work not only introduced me to mobile application development, but I was able to use those skills I had learned in later courses. I've also started learning the basics of other programming skills on my own, such as various web development technologies, which, recently, I've used a lot more than I would have expected. Having all this background knowledge will make me more useful and employable in the future, as I will be able to take on a wider variety of tasks.

What would I change if I were to complete my undergraduate work again?

If I were to redo my undergraduate studies, one thing I would change is my involvement in student organizations. Not that I didn't thoroughly enjoy my current experiences, but there were times when I wished I had been a part of some other student organizations, such as the Mobile Development Club or the German Club. These organizations would have allowed me to meet more people interested in the same things I am and would have given me more learning opportunities that I wouldn't otherwise have had.

I also would have liked to have put more effort into finding summer internships. I was able to find an internship for the summer of 2019, but that was my first and only technical internship. Even then, I didn't put too much effort into looking into more companies and trying to get more interviews. I did have valid reasons for not finding internships during some of the previous summers—study abroad being a major one—but I would have liked to have at least tried to speak to more companies. Having more experience prior to graduation would have given me more technical experience, helped me more easily find a post-graduation job, and helped me better understand what it is I want to do with my software engineering degree.