Stiehl (as private and confidential)

CH_E Survey Evaluation Results for 2012 Spring

Stiehl,

In the attachment you will find the evaluation results of the survey Senior Exit Survey.

For the following period: 2012 Spring

The overall indicator is listed first. It consists of the following scales:

The overall indicator is followed by the individual question categories mentioned above. In the second part of the analysis the average values of all individual questions are listed.

If you have questions or comments contact your Class Climate CH_E Administrator or email course-evaluation@iastate.edu

- ISU CH_E Online Course Evaluation Administrator
1. Please read the following instructions before you begin:

1.1) Indicate your gender:

- Female [ ] 36.4%
- Male [ ] 63.6%

1.2) Are you a U.S. citizen?

- Yes [ ] 74.4%
- No [ ] 25.6%

1.3) Indicate your racial heritage/ethnicity:

- Caucasian [ ] 59.1%
- Native American [ ] 0%
- African American [ ] 2.3%
- Asian [ ] 25%
- Hispanic [ ] 6.8%
- Other [ ] 6.8%

1.4) How many terms have you enrolled at ISU (excluding coop)?

- 3 [ ] 0%
- 4 [ ] 4.7%
- 5 [ ] 9.3%
- 6 [ ] 11.6%
- 7 [ ] 16.3%
- 8 [ ] 39.5%
- 9 [ ] 7%
- 10 [ ] 9.3%
- 11 [ ] 2.3%
1.5) How many terms have you enrolled at other US institutions?

<table>
<thead>
<tr>
<th>Terms</th>
<th>Percentage</th>
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<tbody>
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<td>More than 8</td>
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n=44  
av.=1.08  
dev.=1.61

1.6) How many terms have you worked as a coop student or intern?

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<td>More than 8</td>
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n=44  
av.=0.48  
dev.=0.65

1.7) How many terms have you conducted research with a ChE faculty member?

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<td>More than 8</td>
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</table>

n=44  
av.=1.2  
dev.=1.59
1.8 What are your plans after graduation? (please indicate no more than three)

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Pursue employment as a chemical engineer</td>
<td>77.3%</td>
</tr>
<tr>
<td>Pursue employment but NOT as a chemical engineer</td>
<td>11.4%</td>
</tr>
<tr>
<td>Pursue registration as a professional engineer</td>
<td>15.9%</td>
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<tr>
<td>Pursue graduate work in chemical engineering</td>
<td>18.2%</td>
</tr>
<tr>
<td>Pursue graduate work in a field other than chemical engineering</td>
<td>15.9%</td>
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<tr>
<td>Pursue an MBA or MPA</td>
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<tr>
<td>Attend medical school</td>
<td>6.8%</td>
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<tr>
<td>Attend law school</td>
<td>6.8%</td>
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<tr>
<td>Pursue teacher certification</td>
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<tr>
<td>Return to home country</td>
<td>6.8%</td>
</tr>
<tr>
<td>Other</td>
<td>2.3%</td>
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</tbody>
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1.9 Why did you choose to major in Chemical Engineering?

- Always liked math and chemistry. Also took a intro to engineering class in high school
- Because
- Because I like Math and Chemistry, and I believe that ChE is a good fit for myself.
- Because I loved Chemistry in High School
- Chemical Engineering intrigued me for its application in everyday life and it difficult level.
- Chemical Engineering offered a solid fall-back to go into biomedical engineering if I didn’t get into medical school. I also choose to major in chemical engineering because it engineers are taught how to problem solve and I know those skills will be helpful in medicine.
- Chemistry always interested me and problem solving.
- Excellend in chemistry course in high school and thought it would be a suitable occupation
- Good job market, pay and flexibility.
- Growing up I loved chemistry and math so this degree made sense.
- Hope to work in process plant
- I always wanted to go into engineering and really like chemistry. Also, I originally had thought I might want to go to medical school and saw that ChE was good preparation.
- I am interested in processing a chemical process.
- I chose to major in chemical engineering because I believe that it has a desirable balance of knowledge of the science that interests me, and applicability to industry and society.
- I enjoyed chemistry but wanted to apply it from an engineering standpoint. Also, ChE was a recommended major as part of an aptitude test.
- I found it to be a great balance between math and chemistry which are two things I enjoy
- I liked chemistry and math, so chemical engineering is fit to my interest. Also, the job opportunities for chemical engineer are very potential in my home country.
- I liked chemistry and wanted the security of being able to find a job after I graduated
- I liked problem-solving and chemistry
- I liked the challenge and variety that the industry presents.
- I really liked the applications of Chemical Engineering in industry. The fact that we can pretty much work in any industry is appealing. It increases our chances of graduating with full time opportunities.
I thought it was more chemistry related

I wanted to use my passion for mathematics, chemistry, and physics to pursue a career that utilized these fields and provided financial stability.

I was interested in chemistry, but also very interested in engineering. Chemical engineering seemed to be the best fit for me after surveying all other engineering fields.

I'm good at math and chemistry so it seemed like a good fit

I'm not sure, but it seemed to fit.

I've always been good at math and science and chemistry interested me. It looked like a good program with plenty of interesting challenges.

I've always been very interested to find out how raw materials are turned into final products. The more I learn in chemical engineering classes, the more I find this field of study interesting.

In high school, my favorite classes were math, physics, and chemistry. I liked problem solving and had a strong interest in the Health Care industry. I chose Chemical Engineering due to the ability to specialize the focus of my coursework on Biomedical Engineering.

Initially I was looking to major in biomedical engineering. Since Iowa State does not have a that specific program, I chose to major in chemical engineering. My initial goals were to go to medical school, so it seemed like a good undergraduate degree to prepare for that.

Initially it was because I really liked chemistry in high school, and I didn't want to choose chemistry as a major because I wasn't sure about the job prospects once I was done with my bachelor's degree. Chemical Engineering seemed like a good fit for my skill set and a major in which I could obtain a job in which I could support myself after receiving my bachelor's degree.

Interest in chemistry.

It is challenging and interesting.

It provided an education in a diverse range of academic disciplines which combined well with my interests.

It seemed to have good job security and I was good at chemistry.

Many options after graduation.

My interest in chemistry and problem solving

There are very versatile career opportunities as a chemical engineer.

Thought I liked chemistry and was encouraged to go into engineering

To obtain a career in the production of biofuels or biobased products.

When I graduated from high school I knew I wanted to be an engineer because I was a math/science type guy. I chose chemical engineering because a couple of my favorite classes in high school were AP bio and AP chem

interest with science and technology

love math, chemistry and engineering

1.10 If you have had a professional experience in engineering (coop or internship), how important was that experience to your development?

![Waste of time chart]

<table>
<thead>
<tr>
<th>Waste of time</th>
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Most Important

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av.=4.53
md=5
dev.=0.51
ab.=26

1.11 If you will not have a professional experience in engineering prior to graduation, what factors prevented you from doing so?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Application rejected/no match</td>
<td>31.6%</td>
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<tr>
<td>Turned down offer</td>
<td>2.6%</td>
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<tr>
<td>Never applied</td>
<td>10.5%</td>
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<tr>
<td>Visa difficulty</td>
<td>18.4%</td>
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<tr>
<td>I did have a professional experience</td>
<td>26.3%</td>
</tr>
<tr>
<td>Other</td>
<td>10.5%</td>
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n=36
av.=3.37
dev.=1.85
1.2) If you had a professional experience in engineering, please provide comments:

- 6 month internship. Learned a lot and was able to save enough money to focus on academics my final semester without needing a student job.

- I believe a co-op or internship is essential for all chemical engineering students, as there are several important things that you learn while in industry that sitting in a classroom or working in a lab will not provide. Some of these include: project management, process control (since it is not covered until senior year), industrial safety, and corporate culture.

- I did three terms with Dow Chemical which was a great experience. Two were in a plant setting where I learned that chemical engineering was the right fit for me and how things worked outside of the text books. I also did an internship with Burns and McDonnell, a design/consulting firm, which I found more appealing than working in production. I was given offers by both companies before my senior year. I found the hands on experience brought a lot more meaning to my academic studies and did a good job of not getting "burned out" from continuous school.

- I feel as though the internships provided me with the ability to apply concepts learned in class to real-world situations, many of which cannot be taught in a classroom. In addition, the internships provided me background knowledge for classes taken after the professional experience.

- I had 7 years in the mechanical engineering industry as a CAD operator before going into chemical engineering. I also had a year long internship part time during the school year. Both I believe helped me to be a very well-rounded candidate coming out of school.

- I interned for a company which allowed me to further develop my studies.

- I was a Quality Intern at Abbott Laboratories in Waukegan, IL for twelve weeks in the summer of 2010. Though my work was not directly related to Chemical Engineering, I gained a valuable experience of how the corporate world functions and learned a lot about government regulations in the Health Care industry. I had the opportunity to network with a variety of engineering professionals and received a Lean Six Sigma certification. My second internship, which was also twelve weeks long, was at a Chemical Plant in Cottage Grove, MN with the 3M Company. I learned how to execute capital projects from concept through installation and was the Project Engineer for two $10,000 equipment renewal projects.

- I worked at Dow Corning for an internship. This provided me knowledge for topics that were to be studied in greater details in my courses. This also provided me experience which led to a fulltime position with Dow Corning following graduation.

- I worked for Halliburton in Hobbs, New Mexico as a fracture engineer. It was a great time getting a hands on experience and I believe helped my performance in future classes.

- Intern with Nalco

- It allowed me to know what it's like to be working as a chemical engineer in the real world and confirmed that I did want to continue to pursue this career path. It also allowed me to network with engineers, companies, and fellow students from other universities.

- It was cool to learn from first hand experience and to learn non-academic methods of engineering.

- N/A

- N/A.

- Recommend every engineering students to have it if possible

- There is a significant difference between working in the industry and taking classes in engineering.

- Working during school helps you see the importance of the course work you are learning. It's no longer an abstract concept, but something you've seen in action. It encouraged me to get additional experience, and motivated me to finish my coursework because I knew how important it was.

- n/a
Which variety of experience was it?

- Spain Summer Program: 5.6%
- Study abroad (US citizen outside US): 25%
- Study abroad (International student in US): 8.3%
- Other: 2.8%
- Not applicable: 58.3%

If you will not have an international experience prior to graduation, what factors prevented you from doing so?

- Not enough time: 38.6%
- Cost: 40.9%
- Not interested: 18.2%
- Never considered it: 9.1%
- Other: 0%
- I did have an international experience: 20.5%

If you had an international experience, please provide comments:

- 1 year in Switzerland. The school was very difficult and getting classes approved ahead of time was not possible. Had to take my best guess at what would be applicable. Would have taken different courses if I did it again, added 1 semester onto my degree. Would repeat still repeat the experience knowing this.
- Fun. I learned about international diversity.
- I enjoyed it.
- I had my credits transferred here from Malaysia college.
- I studied abroad in Istanbul, Turkey for about 2 months last summer. It was an amazing and extremely beneficial experience to open my eyes to new cultures and gain an understanding of what it feels like to be a foreigner. I am extremely grateful to have had the opportunity to experience a people and culture so different from the one I was raised in.
- I studied in Cork, Ireland and really enjoyed my experience. I took some courses toward my degree and got to see how a another chemical engineering program worked. I was outside my comfort zone while at a new school in a different country and grew as I worked through different issues in the different cultures. I got involved in different sports clubs and made some great friends. I also learned how to plan, organize, and manage travel across Europe and how to get around.
- I studied in Istanbul, Turkey. It was a great new experience of culture and seeing how engineering was taught in another country.
- I studied in Singapore for a semester. This kept me open to other cultures. However, the coursework was much harder and I did not like that a D grade abroad does not transfer when a D is a passing grade when taken at ISU.
- I went to Valencia, Spain for seven weeks in the summer of 2009, after my freshman year. It was my first time in Europe and I had a fantastic experience. I took two Spanish classes that counted toward my Spanish minor, but the greatest learning experience came from immersing myself into the culture and site-seeing with friends.
- It was a chance to learn in a totally new environment and to learn about the culture and lifestyle of a different part of the world. It was a lot of fun, I got to make new friends from all over the world, and it helped me develop skills regarding communicating and interacting with others, independence, and increased my eagerness to try new things.
- N/A
- N/A.
- Spain program was great, but a lot of hard work. The first-hand experience with lab equipment (distillation columns, heat-exchangers) gave me a much better understanding on operating equipment. I really wish I had this experience earlier in the chemical engineering curriculum because it would have made CHE 357/358 much easier to understand.
- Spanish is my second major. I was able to further my speaking and writing spanish skills while participating in a professional experience abroad as well. I studied in Caceres, Spain where I took classes as well as had an engineering internship at a firm in Spain.
- adapt and respect the new cultures, must always learn the good one
best experience of my undergrad. I wish I had gone longer/ was able to find a graduate program abroad

1.77 If you had a research experience, how important was that experience to your professional development?

1.78 If you will not have a research experience prior to graduation, what factors prevented you from doing so?

- Application rejected/no match 0%
- Turned down offer 0%
- Not interested 5.7%
- Never considered it 22.9%
- Not enough time 8.6%
- Other 2.0%
- I did have a research experience 60%

1.79 If you had a research experience, please provide comments:

- Doing research has given me a deeper understanding of what graduate school would be like. It allowed me to see where advancements are being made and where more work is needed. I gained a lot of valuable professional experience.

- Good for resume

- I am currently doing 2 research project this semester. It is a great experience for me to know how to set up experiments, deal with any obstacle rising during the research. It really encourages me to pursue graduate study.

- I conducted research for three straight years including summers and learned a great deal about the field. I was also able to publish six papers in scientific journals and gain experience to help build my resume.

- I enjoyed the area of research I was a part of my Sophomore year and learned how research was conducted and got to use some of the knowledge I had gained at college. However, I learned most importantly of all that I did not want to go into research and didn’t want to get my PhD.

- I give me a sense of how to conduct a research project. The experience was different from what you get in class. It also strengthen my pursuit of graduate study.

- I had the opportunity to do a ChE 490 research project with a Chemical Engineering faculty member at ISU in the Spring semester of my Junior year. Although I was initially very excited about my project, I was a little disappointed with my experience because I did not receive a lot of direction in conducting my own experiments and analyzing my data. This experience helped me realize that my personality is better suited for industry, in comparison to graduate-level research, and it dissuaded me from pursuing a Chemical Engineering graduate degree right after graduation.

- I learned a lot.

- I researched under Ian Schneider for a total of 6 credits of ChE490 over 2 semesters. It was probably the most enjoyable part of my experience at ISU. I studied cancer cell metastasis with respect to multiprotein contact guidance cues. I then began conducting research for pay for an additional semester. This experience taught me how to conduct research in a more professional manner and prepared me for the world of academia.

- I spent some time with a professor in the chemical engineering department on campus. I learned a great deal about research protocols/practices and gave me an interesting activity outside of classes.

- I started as a undergrad RA in the lab of Dr. Brown. Then I became a MS student of his because of this experience.

- I worked for 2 semesters with Dr. Jarboe and 1 semester with Dr. Mallapragada. This provided me experience which helped me to gain internship opportunities.

- I'm still with a research team in the chemical engineering department studying fluid flow through a 4 inlet jet reactor. We are currently in the process of setting up the apparatus and dismantling old reactors to put in the new one. I also spent a semester learning how to use Computational Fluid Dynamics software, FLUENT.

- It was helpful in teaching me what I enjoy doing more.

- It was through the university honors freshman peer mentorship program. I didn't really learn anything from it except maybe just how a research position works (sat in at weekly meetings). There wasn't a set project or project goal to work for, which made it a bit frustrating
since most of the time, I sat in the computer lab looking through tutorials without applying that knowledge to anything.

- Learnt a lot about what happens behind the scenes. Got to use a lot of specialized equipment. Don't think it was very beneficial to my professional experience.

- My research experience with the honors program and department of civil engineering helped me to determine that research was not a field I wanted to pursue.

- My research experiences showed me that research is an area which fits me well. I got to get a hands on approach to science and explore my interests further.

- N/A

- Only good for recommendation and maybe grad school, depends on the research

- Strongly recommend for any chemical engineering student.

- Though it was very applicable to studies in polymer courses

- Three of the four semesters of research that I was involved in was through the ChE department. Unfortunately, in all three cases I was treated more like a lab tech than a contributing member of the research team. All three cases were under a different faculty member. The fourth semester of research was the most valuable to me as a learning experience, but it was with the BBMB department of ISU.

- Worked in the biorenewables field and it helped me to see how bench top chemistry can relate back to large scale chemical engineering

- Essential to my acceptance to grad school

- I did not enjoy what I was doing, the work was not interesting and I spent much of my time washing labware and doing worthless tasks

1.20) Compared to the learning opportunities in general at ISU, the quality of opportunities the Chemical and Biological Engineering Department provides are:

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<thead>
<tr>
<th></th>
<th>Much lower</th>
<th>0%</th>
<th>11.4%</th>
<th>34.1%</th>
<th>43.2%</th>
<th>11.4%</th>
<th>Much better</th>
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<td>3</td>
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</tbody>
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n=44  
av=3.55  
dev=0.85

1.21) Compared to the learning opportunities outside ISU, the quality of opportunities the Chemical & Biological Engineering Department provides are:

<table>
<thead>
<tr>
<th></th>
<th>Much lower</th>
<th>2.3%</th>
<th>4.7%</th>
<th>41.9%</th>
<th>32.6%</th>
<th>18.6%</th>
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n=43  
av=3.6  
dev=0.93

1.22) Describe your BEST learning opportunity at ISU:

- All my chemical engineering classes were my favorites.

- Being involved in variety of things.

- Career fairs provided great resources to help me find full time employment upon graduation

- ChE 430 is the most applicable course to industry in the ChE curriculum.

- ChE 325. I really enjoyed getting into the lab and applying what I had been learning. Watching phenomena occur, using real data that I collected, and analyzing every part of it was extremely useful and interesting.

- Design Projects

- During SI sessions, when the students have the ability to relate more easily than professors to the hang ups we have with the material.

- English 314 with Dr. Mike Satterwhite was my favorite learning experience at ISU. His class was simply awesome and very practical.

- Going to class

- Hands on experience

- I really enjoyed the Sales Engineering minor, and I feel it has made me a more rounded engineer.

- I was a part of the Freshman Honors Society my first year at ISU. Unfortunately, I did not continue with being a member because the requirements to graduate with honors status as a ChE are ridiculous compared to all other departments.

- My best learning experience was in my heat transfer class. I learned more than I ever had before about the reynold's number.

- My best learning experience was my 210 class taught by Monica Lamm. It set me up well for the rest of my education at Iowa State and
taught me information I will likely use for the rest of my career.

- My best learning opportunity came my sophomore year with a combination of a full course load, taking my first chemical engineering courses, undergraduate research for credit and money, and being an officer in a ISU club. This experience tested my abilities and how to learn.

- Oral presentations of reports, great experience for the real world.

- Separations gave me a chance to learn and see a topic that is ChE specific and gave me motivation to learn it well

- Spain Summer Program. It was a great way to bring together a few years of work and put that knowledge into practice.

- Supplemental Instruction and group discussion work best for me.

- Taking classes in the areas of my interest, outside of Chemical Engineering, to explore my interests were the best learning opportunity at ISU. I did this through minors and taking upper level classes and it was very rewarding.

- Teamwork with international students.

- The Oviedo, Spain program.

- The SI sessions for the gen-eds were more helpful than the instructors.

- The availability of study abroad and internships provided me with opportunities to experiences learning that varied from that of my peers, which was beneficial in differentiating myself.

- The best learning opportunity at ISU was the Greek community. This gave me networking opportunities and leadership. This also taught me to better balance my personal and work life.

- The best learning opportunity at had at ISU was from interactions with my peers. After the first year, I struggled trying to understand everything on my own. After forming a tight study group, I developed strong friendships and found that understanding material was much easier. I honestly don't think I would have succeeded as a chemical engineer if it wasn't for the support and encouragement I had from my peers.

- The general chemistry labs, it was my first hands on experience.

- The opportunity to take non-engineering courses, such as Religion 210 (Religion in the US), Spanish 314 (Intro to Spanish Lit), and Environmental Studies 324 (Energy and the Environment). These types of classes brought completely different perspectives to my attention and all were taught by excellent ISU professors.

- The opportunity to take part in several student organizations and take leadership positions in these clubs while still completing a large amount of coursework was an invaluable experience. This taught me how to manage multiple projects and assignments simultaneously while managing a group of students and other tasks brought on by the involvement in student organization.

- The research I did for a couple ChE professors gave me a very realistic idea of what it would actually be like to work in a lab in graduate school or if I was to pursue a career in research. I was able to develop several valuable skills and gained a lot of independence in the lab.

- The unit operations labs were a great learning opportunity

- Thermodynamics (ChE 381) by Dr. Monica Lamm, truly care about students

- Traveling to Spain.

- Undergrad. research

- With Professor Schneider and Shanks, I felt like they really wanted to teach the students in their classes and enjoyed interacting with them. Separations and Biochem engineering were a couple of my favorite classes. Outside of the chem e department I thought Professor Orazem did a great job with economics of discrimination and that Professor Greenbowe did a great job with general chemistry.

- Working in groups

- being involved in extracurricular activities that improved my leadership, communication, organization, and teamwork skills

- diversity of courses

- in ChE 421 course, Dr. Hebert was very helpful and willing to explain more about difficult materials during his office hour.

- none

- research with nice professors

- social life and personal reading
Describe your WORST learning opportunity at ISU:

- A class in the materials science & engineering department that I took as an elective. Professor was disorganized and hardly replied to emails. Lecture notes were not posted until a few weeks later and in general, had no clue what's going on in class even though I spent a lot of time outside class studying.

- Can't remember

- Ch E was not worth my time.

- Chem I'm not sure I got anything out of this course and the teacher was impossible to understand and disrespectful.

- Classes with only exams. (no HW or other points)

- Dealing with homophobia on campus was probably the worst part of my experience at ISU. The classroom should be a place where everyone feels equally safe and respected. Enduring the comments of some of my peers was probably the hardest thing about my time here. Because some students come here from a much less diverse background, there should be some sort of required diversity class that all freshmen have to take similar to Lib160. Something should be done to make minorities feel more welcome here.

- Don't think I had an terrible learning experiences at ISU.

- English classes

- Exams

- I did not find large parts of the physics classes to be relevant to a lot of my Chemical Engineering classes, and I was disappointed that those credits for physics did not transfer from my old school when they seemed very similar.

- I strongly disliked having to take the required English course: English 314. I can say with absolute certainty that I learned nothing valuable in that class. It was a lot of busy work and the professor did a terrible job.

- I took MatE 314 as Engineering elective course. However, since I did not have a background in this major, I got lost and had to study hard to pass the course.

- I took an English class my freshman year in which the teacher was not very fair. He did not present his expectations very clearly and was not willing to help explain what the students did wrong when those expectations were not met.

- I took many classes online through ISU. About 75% were severely limited due to the professor being unorganized and inadequate. It was very apparent that many professors only offer online courses because they think it requires less effort on their part, but they do not realize the class they are offering is worthless due to their lack of effort.

- I was required to take a Lib 160 class the final semester of my education. I learned next to nothing and it increased the stress level of my final semester

- I'm not sure I have heard about any bad learning "opportunities". I was always able to learn as much as I wanted and never felt misled by any opportunity.

- In the beginner level courses I felt it was very difficult to get outside help.

- LAS courses and Chem elective are limited and absolutely useless and waste of time

- Learning communities were the worst learning opportunities. Learning communities because they did not help me with classes or finding people to talk to; maybe because I was in a general one.

- Library 160

- My first semester here was difficult because I did not know how to study and did poorly. This resulted in less learning because I was focusing on my failures.

- My technical communications course I took in the summer did not improve my communication skills which is one of my weakest areas. I felt the course was a waste of time. Also, my introduction course through the honors program was also a waste of time.

- No.

- Participated in the honors program freshman year, was a waste of my time and did not pursue further.

- Physics.

- Several SSH classes seemed like a waste of time and were far too easy. I also had difficulty applying my credits to the correct requirements even though they are listed in the catalog.

- The first time I took diffeq with wasn't very fun. Granted, I did sleep a lot and had to retake the course so that was probably my fault.
The general chemistry lecture was huge my freshmen year, and it was difficult not to get lost in all of the noise and distractions that resulted from the large amount of students all in one place.

The professors for the gen-eds (Calc 1-Diff EQ, Gen Chem, Phys) were collectively among the worst I've ever had in my life. I went to community college to finish them, where I got better quality instructors who actually cared if I understood the material. You should be ashamed of yourself charging 8x the price of community college tuition for this lousy of a teaching staff. (I'm not attempting to be disrespectful in anyway towards my Ch'E professors, who were for the most part great)

The requirement to take courses such as Physics 222 (focused on electricity and magnetism) and several mathematics courses that are not relevant to general chemical engineering principles and having these taught in a manner that is highly abstract. However, if these courses were instead taught by an engineer with a greater focus on application many more of the learning objectives would be achieved.

The worst learning opportunity is not allowed a D grade abroad to transfer. I feel that this discourages students from studying at universities that are difficult and prevents students from fully enjoying the experience abroad.

When I walked into a class to be astonished that the test was that day. I didn't prepare in anyway and failed it.

Working with a very lazy lab partner.

classes where everything is about the grade

irresponsible instructor

limited real world example

none

probably the math classes. The professors were not very personable.

trying to take BBMB 405 online...

1,24) Describe your BEST learning opportunity in the Chemical Engineering Department.

Again, the unit ops labs with Dr. Loveland

All classes were taught very well.

Being able to do research and learn about the real world from people in the industries.

Certain professors in the Ch'E department far exceed exceptional work as instructors and advisers. The most notable professors that I had the chance to take classes with were Dr. Jarboe and Dr. Hebert.

Ch E 430 is the most applicable course to industry in the Ch E curriculum.

ChE 325 chemical engineering lab was probably my favorite. It was hands on and great to learn how stuff works.

ChE 325. I really enjoyed getting into the lab and applying what I had been learning. Watching phenomena occur, using real data that I collected, and analyzing every part of it was extremely useful and interesting.

Design Projects

Doing research in CBE showed exposed me to much of the research and techniques currently being done. I learned a large amount in what I wanted to do with research and what I could do with my major.

Going to class

I enjoyed all of the hands-on experiences provided by the department, including the exposure to unit operations in ChE 426 and the field trips. The computer-controlled distillation lab was my favorite because it reminded me of my internship experience in a Chemical Plant. Knowing how to operate DeltaV is very important! I also enjoyed the ChE 381 field trip to the ISU Power Plant and the ChE 421 field trip to the Fisher Controls Plant and Innovation Center. In my opinion, more of these types of opportunities should be available earlier on in the Chemical Engineering curriculum.

I really enjoyed the labs that we had to take. It allowed a hands on learning that you can't get in a class room.

I really loved the ChE labs, and also the Environmental Chemodynamics class. Both were very helpful, and interesting.

I think ChE430 was my best learning opportunity. Dr. Loveland was one of the best professors I've had. She explained everything in a way that made the material so clear to me. This course was also the first time that everything I had been learning finally started to click together. This course made me feel like I was an actual chemical engineer.

I think the story about separations above in (1.22) was also my best ChE experience
Lab experiences.

My best learning experience was my 210 class taught by Monica Lamm. It set me up well for the rest of my education at Iowa state and taught me information I will likely use for the rest of my career.

My opportunity to conduct research with a faculty member taught me things I could not have learned in a classroom.

Same is 1.22

Spain Summer Program. It was a great way to bring together a few years of work and put that knowledge into practice.

Supplemental Instruction for ChE 356 and subsequently got me very interested in fluid dynamics.

The best learning opportunities I've had are working in groups on projects. In senior design we work in teams on designing heat exchanger networks, or separation systems, and it helps you relate concepts to future opportunities. We also have the opportunity to learn a lot about different simulation tools.

The best learning opportunity in CBE is research for a professor.

The course work was the best learning opportunity in the department for me. I feel I have an understanding of chemical engineering principles and how to learn technical information.

The incorporation of class projects combined with the unit operations lab to hammer home concepts in this department really was excellent. I feel like I can handle myself in group projects very well with people I'm not necessarily comfortable with.

The research I did for a couple ChE professors gave me a very realistic idea of what it would actually be like to work in a lab in graduate school or if I was to pursue a career in research. I was able to develop several valuable skills and gained a lot of independence in the lab.

The unit operations laboratories were highly beneficial in providing a real world experience. The opportunity to get a hands-on experience while on campus is invaluable for a chemical engineer.

Traveling to Spain.

Unit Ops Lab

Unit ops was very beneficial in focusing what was learned in previous coursework.

Using Team Based learning for heat transfer

With professors Schneider and Shanks, I felt like they really wanted to teach the students in their classes and enjoyed interacting with them. Separations and Biochem engineering were a couple of my favorite classes.

class projects that made you apply what you learned in that class.

fluid dynamics/ transport (Che 356)

none

office hour

research

study group

Describe your WORST learning opportunity in the Chemical Engineering Department.

memorizing/cramming unimportant information that I forgot after a semester or so. (ie much of biochemistry)

CHE Class where the class was geared to the exam rather than actual teaching.

ChE Class was not worth my time.

ChE I struggled with Matlab from the start and never got the hang of it. I thought the professor/material was very dry. Disappointing since I know how much power is behind Matlab that I'm missing and am unable to use.

ChE was very unenjoyable for me. It wasn't that the material was particularly difficult, but I found it so uninteresting, and the teacher's handwriting was nearly impossible to read, making lectures difficult to follow.

ChE and ChE with Both were extremely unorganized. In exams set could not be done in the given amount of time because there were too many problems and not because we did not understand the materials. In 70% of class time were spent discussing homework that wasn't even that helpful and I think time could've been used to go through example problems in class.
Classes with only exams. (no HW or other points)

Engineering 160 teaches visual basic programming which I have never and will probably never use. This class should be converted to a MATLAB based alternative which would teach skills that would be much more useful in classes within the curriculum.

Every class I had to take with [redacted] I couldn't understand what he was saying and I couldn't read his handwriting so I basically had to teach myself. Making sure professors are capable of communicating properly should be a requirement for teaching a class.

Having [redacted] taught by an individual who had never taught before was an extremely difficult learning environment. This course develops skills and intuition that is essential for nearly all chemical engineering post graduation opportunities. Having to learn straight from the book with no benefit to lecture was a difficult situation.

Homework

Homework and projects that entailed busy work that didn't provide significant value to the course.

I did not enjoy ChE [redacted] as it was a software I was unfamiliar with and was not provided an adequate background.

I had a trouble in learning this course. The instructor never taught this course before, so the lectures were not organized and confused.

I had three ChE professors, whose teaching methods did not align with my learning style. And, I have one of these professors twice.

I thought the ChE 382 was much too crowded for the difficulty of the material it had to cover. That many people in one classroom is not very conducive to the complicated material.

I'm not sure I have heard about any bad learning "opportunities". I was always able to learn as much as I wanted and never felt misled by any opportunity.

In general having to work 35 hours a week with full-time credits has been terrible. I'm glad it's over.

Matlab

Matlab principles (ChE 310)

Most of other courses. A lot of instructors did NOT care!

N/A

No.

Probably my separations class. I felt the exams were not fair for what was learned in the classes.

Professors who don't really care about teaching, they're more interested in their research and are putting in their time in the classroom. The students can tell, and it demotivates everyone in the class.

Struggled the most with reactions.

Taking ChE [redacted] with Dr. [redacted] was my least favorite experience in the CBE dept. He wasn't a very good communicator so it was not a good experience especially since that class is so important to establish a base in ChE.

The worst learning opportunity is not allowed a D grade abroad to transfer. I feel that this discourages students from studying at universities that are difficult and prevents students from fully enjoying the experience abroad.

There are some professors in the department that have little respect for the students' education.

This would have to be [redacted] I did enjoy the class but the book we had was worthless and did not give much additional help.

Was forced into the online section of 310 as all course seats were full, attended class in person, never online. Was unable to get a refund of the significant fee even after pursuing it for several months with both the ChE department and Engineering Online.

With a few professors I felt like they had the job because of the research and that teaching was secondary, or that the class they were teaching was too basic and they really wanted to complicate it with advanced material. I especially felt this way about [redacted]

Working in groups for classes. Not all of them were bad, but there were definitely times where there was an unfair advantage to some groups over others, which impacts grades.

Working with a very lazy lab partner

chemical engineering [redacted]

exam review

limited facilities such as study room and access to computer
■ none
■ the chemical engineering was not as useful as i feel it should have been.
■ working in team with some annoyed members

1.26 Have you been involved in engineering societies or extracurricular activities during your undergraduate career?

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<tr>
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</tr>
<tr>
<td>Yes, as a somewhat active member</td>
<td>27.9%</td>
</tr>
<tr>
<td>Yes, as an inactive member</td>
<td>11.6%</td>
</tr>
<tr>
<td>No</td>
<td>32.6%</td>
</tr>
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</table>

n=43
av=2.49
dev=1.22

1.27 In which engineering societies or extracurricular activities have you been involved?

- AIChE: 36.4%
- Omega Chi Epsilon: 11.4%
- Tau Beta Pi: 15.6%
- SWE: 11.4%
- E-Council: 2.3%
- Solar Car Team: 0%
- Departmental committee: 6.8%
- Engineer's Week: 20.5%
- Not involved: 29.5%

n=44

1.28 If you have been involved in engineering societies or extracurricular activities, how important were those experiences to your professional development?

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Most important
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av=2.7
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ab=13

1.29 Have you been involved in non-engineering societies or extracurricular activities during your undergraduate career?

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</tr>
<tr>
<td>No</td>
<td>29.5%</td>
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n=44
av=2.16
dev=1.27

1.30 In which non-engineering societies or extracurricular activities have you been involved?

- VEISHEA organization: 6.8%
- Fraternity/sorority: 6.8%
- Recreational: 31.8%
- Other: 59.1%

n=44

1.31 If you have been involved in non-engineering societies or extracurricular activities, how important were those experiences to your professional development?

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<tr>
<th>Level</th>
<th>Percentage</th>
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<td>25%</td>
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<td>9.4%</td>
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</table>

Most important
n=32
av=2.97
md=3
dev=1.12
ab=12

1.32 Please provide comments on your extracurricular activities:

- 
American Nuclear Society

Being involved in extracurricular activities improved my leadership, communication, organization, and teamwork skills. They also were excellent ways to meet new friends and have a balanced lifestyle that didn’t completely revolve around studies.

Being the treasurer of the resident hall I lived in was one of the most beneficial experiences of my college career. I made a lot of relationships through that position, and being involved with my residence hall made me feel more at home.

Depending on different employees and school, these experiences can be useful or useless.

Did things with The Salt Company, a college ministry in town.

Enjoy rock climbing.

Founder of I-LEAD

Four years of marching band

Fun and provides opportunity to meet new people.

I am a member of the men’s chorus, The Iowa Statesmen. It was a very enjoyable experience and gave me something stress-free and relaxing to look forward to after classes every day. I am also one of 17 choreographers for Dub-H the hip-hop dance club. Because Dub-H is the largest student-run organization on campus, I made a lot of friends and gained valuable leadership experience while maintaining a healthy lifestyle.

I am in AIChE and Snowboarding club. Both are great groups.

I feel like my involvement in Phi Gamma Delta has done wonders for developing me as person, but hasn’t been quite as awe inspiring for developing me professionally.

I have worked on several outreach committees, one of them being the Minds of Tomorrow where we travel to schools whom enter to win grants for science related activities.

I held 4 cabinet positions for SWE, 2 officer positions for Tau Beta Pi, and 2 leadership positions for E-week in my 8 semesters on-campus at ISU. I was also involved with the St. Thomas Aquinas Catholic Church and Student Center. I led a few Small Groups and a Spring Break Service Trip. And, I participated in a few intramural sports. All were great experiences, though I would advise new engineering students to join only one professional development engineering organization and take on only one leadership role at a time.

I learned a great deal about organizing and planning events, economics of a club and how to lead in different situations.

I ran track for Iowa State during all four years of college. This has challenged me in terms of time-management, prioritizing, self-discipline, and pushing myself to the limit to succeed. It has also given me valuable skills in teamwork and competition. Although I have had to sacrifice some aspects of a typical college experience, I am thankful for the experiences I gained instead.

I was an executive member in my sorority which gave me leadership experience. I learned to balance my personal and work lives.

I was the Financial Chair at Willow Hall my freshman year, as well as the social chair for my floor. These positions were very helpful, especially the financial chair. I learned how the University handles money and procedures, which helped me later in school. I was also the Wing Commander in ROTC, which was an outstanding experience.

I was the treasure of the ISU Pheasants Forever and the Vice President of the ISU Fishing Club. These experiences gave me leadership experiences and further responsibilities.

It was not an option above but I was a member of the Engineering Leadership Program which is not the Emerging Leaders in Engineering student organization. Currently I serve as the social chair and upper student adviser for the group. I was a section leader in the marching band and participated in many other musical groups. Extracurriculars allowed me to practice leadership as well as diversify my skills.

Malaysian Cultural Night, International Food Fair

My extracurricular activities centered around engineering, working with Engineers’ Week and the Society of Women Engineers. These organizations have helped improve my interpersonal skills, and group work skills.

No comments to give. I am neutral on those experiences.

Not applicable

Pre-medical club was helpful with achieving my goal in going to medical school. Intramural sports helped relieve stress and build relationships with my peers.

There should be a choice between “waste of time” and “somewhat important”. I was a member of several athletic clubs which were not important to my professional development, but were certainly not a waste of my time.

They were a good way to have fun with other people.
- Track and xc
- Working at ISU Recreation Services
- build up self-esteem, and knew more friends
- no comments.
- none
- not applicable
- picked up some interesting skills (ie gaffers guild) but not a formative part of my experience

### 1.20 ADVISING. Did you receive sufficient guidance at ISU regarding your career?

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n=44  
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### 1.26 What advising resource(s) were most helpful to you? (please indicate no more than three)

- Faculty Advisor: 65.9%
- Other faculty members: 20.5%
- Student Services Office (Christi Patterson): 11.4%
- Chemical Engineering undergraduate booklet: 43.2%
- ChE Advising Coordinator (Brenda Kutz): 63.6%
- Other: 9.1%

n=44

### 1.30 How would you characterize the advising you received in the Chemical Engineering Department regarding making a career choice?

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### 1.35 How would you characterize the advising you received in the Chemical Engineering Department regarding preparing you for your career?

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### 1.37 How would you characterize the advising you received in the Chemical Engineering Department regarding quality of advice from Chemical Engineering Faculty?

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### 1.38 How would you characterize the advising you received in the Chemical Engineering Department regarding availability of advice from Chemical Engineering Faculty?

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### 1.39 How would you characterize the advising you received in the Chemical Engineering Department regarding quality of advice from advisor Brenda Kutz?

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### 1.40 How would you characterize the advising you received in the Chemical Engineering Department regarding availability of advice from advisor Brenda Kutz?

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Please indicate your primary faculty advisor:

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<tr>
<td>O'Donnell</td>
<td>2.3%</td>
</tr>
<tr>
<td>Reilly</td>
<td>6.8%</td>
</tr>
<tr>
<td>Schneider</td>
<td>2.3%</td>
</tr>
<tr>
<td>B. Shanks</td>
<td>9.1%</td>
</tr>
<tr>
<td>J. Shanks</td>
<td>2.3%</td>
</tr>
<tr>
<td>Vigil</td>
<td>6.8%</td>
</tr>
</tbody>
</table>

General comments/suggestions on advising and/or your faculty advisor:

- Always very responsive to emails.
- As the international admission at the department is increasing, suggest to provide more information for international students hiring.
- Dr. [redacted] always made himself very available to offer help. He was very kind, helpful, and seemed to care about his advisees on a personal level. My only complaint is that I met with him multiple times to discuss my four year plan; yet still had issues to work out this last semester of my senior year, which I thought had been resolved much earlier.
- Dr. [redacted] did an excellent job. She didn't give me as much educational guidance as I had hoped and she also didn't help me find a location for summer courses, which was little frustrating. She was, however, readily available and is knowledgeable about the University and options.
- Figuring out my schedule was always simple, and everything was worked out in the end. We never talked much about after college though and was never really prompted to talk about it either.
- Good advising but Brenda Kutz was much more available.
- Good and helpful.
- Good.
- Have a couple advisors (like EE and CprE department), whose only job is to advise students. Don't have professors be advisors because it is either extra work they don't want to do or they don't care.
- Have more conversations with students about what they want to do, how they could accomplish these things, how could they figure out what they would want to do, etc.
- I did not utilize advisors that much because I followed the undergraduate booklet. I also already knew what I wanted to do with my career. Dr. Loveland helped a lot with informing me of options after receiving a D in a course abroad.
- I think he remembers my name.....
- I felt like my personal goals and ambitions weren't considered or reflected in the advising I received. Even though, I expressed strong interest in attending medical school, I was strongly discouraged and made to feel like I wasn't doing an adequate job as a student. At one point, I felt so discouraged and helpless after a meeting that I had to find an empty room and cry for a few minutes.
I had a fantastic experience while meeting with my faculty advisor. She helped me figure out my four year plan and offered me career advice when I had to make tough professional decisions (i.e. industry vs. research for summer before graduation). Also, she always made time to meet despite her extremely busy schedule. However, I wish she could have shared more information about the role of Chemical Engineers working in industry (with just a B.S.) or Medical School. In my opinion, more career advising should be done by people who have industry experience.

I have heard many people complain about their advisors not being good. They complain about availability, no guidance, and no help. I had the exact opposite experience. He Shanks was the bomb. He helped me with anything that I needed in a timely matter and showed he cared while doing it. He was knowledgeable about many things and was always happy to help. He should be a role model for all advisors.

Met with him once. Asked questions and either got one word answers or was told that I should ask Brenda. Never really had anyone (other than research advisors) who even asked about my career goals.

More available to meet.

Nice and somewhat helpful. Wish there were more information on getting an internship for international students.

Nice guy, helped me out whenever I needed him.

Not very proactive to advise his students.

Overall, pretty good. Easy to talk to and finds the solutions to curriculum problems. Flexible on scheduling and helps students explore interests. It would be nice if there was more willingness to get to know the students more.

She did a fantastic job of responding to my needs quickly and thoroughly. She was very helpful.

She is really helpful and patient with me.

She seemed generally willing to help and interested in me but wasn't always prepared to answer my questions about classes or scheduling.

She was always very helpful and able to meet with me when I had questions. I appreciate her help.

She was helpful and willingly to answer any questions I have.

Very easy to set up a meeting time and had very good advice on elective o recommend.

Very helpful advisor, Dr. Shanks is very busy but always willing to take time to meet and make sure everything is on track.

Very knowledgeable and nice individual!

Was not helpful in most advising regards. His availability was extremely limited, and he consistently failed to respond to emails in a timely fashion. He also seemed unable to provide helpful advice when choosing electives.

Wonderful and knowledge

good and friendly, but may need to respect advisee decision

no comments

was fine, not particularly knowledgeable about general student questions.

willingly answer any questions I have

---

1.43 Rate your current abilities to apply knowledge of calculus and differential equations:

<table>
<thead>
<tr>
<th>No ability</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Excellent ability</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>0%</td>
<td>0%</td>
<td>18.2%</td>
<td>59.1%</td>
<td>22.7%</td>
<td>n=44 av=4.05 md=4 dev=0.65</td>
</tr>
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</table>

1.44 Rate your current abilities to apply knowledge of statistics:

<table>
<thead>
<tr>
<th>No ability</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
<td>4.5%</td>
<td>38.6%</td>
<td>47.7%</td>
<td>9.1%</td>
<td>n=44 av=3.81 md=4 dev=0.72</td>
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</table>

1.45 Rate your current abilities to apply knowledge of chemistry:

<table>
<thead>
<tr>
<th>No ability</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
<td>0%</td>
<td>13.6%</td>
<td>54.5%</td>
<td>31.8%</td>
<td>n=44 av=4.18 md=4 dev=0.66</td>
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</table>
1.46 | Rate your current abilities to apply knowledge of physics:

<table>
<thead>
<tr>
<th>No ability</th>
<th>0%</th>
<th>2.3%</th>
<th>34.1%</th>
<th>43.2%</th>
<th>20.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent ability</td>
<td>n=44</td>
<td>av.=3.82</td>
<td>md=4</td>
<td>dev.=0.79</td>
<td></td>
</tr>
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</table>

1.47 | Rate your current abilities to apply knowledge of engineering:

<table>
<thead>
<tr>
<th>No ability</th>
<th>0%</th>
<th>0%</th>
<th>4,5%</th>
<th>63.6%</th>
<th>31.8%</th>
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<tr>
<td>Excellent ability</td>
<td>n=44</td>
<td>av.=4.27</td>
<td>md=4</td>
<td>dev.=0.54</td>
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</table>

1.48 | Rate your current abilities to design and conduct experiments:

<table>
<thead>
<tr>
<th>No ability</th>
<th>0%</th>
<th>0%</th>
<th>6.8%</th>
<th>47.7%</th>
<th>45.6%</th>
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<tbody>
<tr>
<td>Excellent ability</td>
<td>n=44</td>
<td>av.=4.39</td>
<td>md=4</td>
<td>dev.=0.62</td>
<td></td>
</tr>
</tbody>
</table>

1.49 | Rate your current abilities to analyze and interpret data:

<table>
<thead>
<tr>
<th>No ability</th>
<th>0%</th>
<th>0%</th>
<th>6.8%</th>
<th>52.3%</th>
<th>40.9%</th>
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<tbody>
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<td>av.=4.34</td>
<td>md=4</td>
<td>dev.=0.61</td>
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</table>

1.50 | Rate your current abilities to design a chemical engineering system:

<table>
<thead>
<tr>
<th>No ability</th>
<th>0%</th>
<th>0%</th>
<th>18.2%</th>
<th>61.4%</th>
<th>20.5%</th>
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<tbody>
<tr>
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<td>n=44</td>
<td>av.=4.02</td>
<td>md=4</td>
<td>dev.=0.63</td>
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</table>

1.51 | Rate your current abilities to function on multidisciplinary teams:

<table>
<thead>
<tr>
<th>No ability</th>
<th>0%</th>
<th>2.3%</th>
<th>11.4%</th>
<th>52.3%</th>
<th>34.1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent ability</td>
<td>n=44</td>
<td>av.=4.18</td>
<td>md=4</td>
<td>dev.=0.72</td>
<td></td>
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</tbody>
</table>

1.52 | Rate your current abilities to define/solve chemical engineering problems:

<table>
<thead>
<tr>
<th>No ability</th>
<th>0%</th>
<th>0%</th>
<th>15.9%</th>
<th>54.5%</th>
<th>29.5%</th>
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<tbody>
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<td>Excellent ability</td>
<td>n=44</td>
<td>av.=4.14</td>
<td>md=4</td>
<td>dev.=0.67</td>
<td></td>
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</table>

1.53 | Rate your current abilities to communicate effectively (written):

<table>
<thead>
<tr>
<th>No ability</th>
<th>0%</th>
<th>0%</th>
<th>15.9%</th>
<th>34.1%</th>
<th>50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent ability</td>
<td>n=44</td>
<td>av.=4.34</td>
<td>md=4</td>
<td>dev.=0.75</td>
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</table>

1.54 | Rate your current abilities to communicate effectively (verbal):

<table>
<thead>
<tr>
<th>No ability</th>
<th>0%</th>
<th>0%</th>
<th>18.2%</th>
<th>43.2%</th>
<th>38.6%</th>
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<tbody>
<tr>
<td>Excellent ability</td>
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<td>av.=4.2</td>
<td>md=4</td>
<td>dev.=0.73</td>
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</tr>
</tbody>
</table>

1.55 | Rate your current abilities to engage in life-long learning:

<table>
<thead>
<tr>
<th>Nonexistent</th>
<th>0%</th>
<th>0%</th>
<th>13.6%</th>
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<th>50%</th>
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<td>n=44</td>
<td>av.=4.36</td>
<td>md=4</td>
<td>dev.=0.72</td>
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</table>

1.56 | Rate your current abilities to use modern engineering tools:

<table>
<thead>
<tr>
<th>No ability</th>
<th>0%</th>
<th>0%</th>
<th>18.2%</th>
<th>81.4%</th>
<th>20.5%</th>
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</thead>
<tbody>
<tr>
<td>Excellent ability</td>
<td>n=44</td>
<td>av.=4.02</td>
<td>md=4</td>
<td>dev.=0.63</td>
<td></td>
</tr>
</tbody>
</table>

1.57 | Rate your current abilities to function as an engineer in an international setting:

<table>
<thead>
<tr>
<th>No ability</th>
<th>2.3%</th>
<th>2.3%</th>
<th>26.5%</th>
<th>45.5%</th>
<th>20.5%</th>
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<tbody>
<tr>
<td>Excellent ability</td>
<td>n=44</td>
<td>av.=3.8</td>
<td>md=4</td>
<td>dev.=0.88</td>
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</tr>
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</table>
1.58 Rate your current abilities to function as a professional engineer:

No ability

0% 2.3% 29.5% 50% 18.2%

Excellent ability

n=44
av=3.84
md=4
dev=0.75

1.59 Rate your current abilities to pursue research and advanced studies:

No ability

0% 2.3% 36.4% 36.4% 26%

Excellent ability

n=44
av=3.84
md=4
dev=0.83

1.60 Rate your current abilities to understand professional and ethical responsibility:

No ability

0% 0% 18.2% 40.9% 40.9%

Excellent ability

n=44
av=4.23
md=4
dev=0.74

1.61 Rate your current abilities to understand the global and societal impact of decisions:

No ability

0% 0% 25.6% 37.2% 37.2%

Excellent ability

n=43
av=4.12
md=4
dev=0.79

1.62 Rate your current abilities on knowledge of contemporary issues:

No ability

0% 2.3% 27.9% 53.5% 15.3%

Excellent ability

n=43
av=3.84
md=4
dev=0.72

1.63 Departmental Facilities. Please rate the current computational facilities available in the department:

Very poor

2.3% 4.7% 27.9% 46.5% 18.6%

Very good

n=43
av=3.74
md=4
dev=0.9

1.64 The quality of the available software is:

Very poor

0% 4.6% 18.2% 56.8% 20.5%

Very good

n=44
av=3.93
md=4
dev=0.76

1.65 Access to the computational facilities is:

Very poor

2.3% 11.4% 25% 50% 11.4%

Very good

n=44
av=3.57
md=4
dev=0.93

1.66 What type of computational facility do you use most often?

Departmental PC

63.6%

n=44
av=1.91
dev=1.31

Engineering workstation

6.8%

Campus facilities (not in Sweeney)

4.5%

Personal PC (yours or a friend's)

25%

Other

0%

1.67 The condition of equipment in the departmental undergraduate laboratory is:

Very poor

2.3% 2.3% 27.9% 50% 18.2%

Very good

n=44
av=3.8
md=4
dev=0.85
The study areas available within the department are:

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never used them</td>
<td>22.7%</td>
</tr>
<tr>
<td>Neither adequate in number nor well maintained</td>
<td>2.3%</td>
</tr>
<tr>
<td>Inadequate in number but well maintained</td>
<td>25%</td>
</tr>
<tr>
<td>Adequate in number but not well maintained</td>
<td>13.6%</td>
</tr>
<tr>
<td>Adequate in number and well maintained</td>
<td>36.4%</td>
</tr>
</tbody>
</table>

Comments or concerns regarding departmental laboratory facilities:

- Although the new double-monitor computer lab is a huge capacity improvement, I still feel like it is difficult to find a PC to use in Sweeney during the day and in the evening. I also think lab 1050 could use some more cleaning - the floor gets unbelievably dirty, especially during the winter. Also, a minimal talking policy should be enforced in at least one of the labs as Chemical Engineers are too social at times.

- Computers had intermittent network access.

- Dirty! And need more computers, also closed too early

- Extremely slow when logging into the system.

- Having the double monitor lab available during the day would be very beneficial.

- I really like the new dual screen computation lab which is where I’ve done the most of my work.

- I spend a lot of time in Sweeney and with my need for lots of study time I tend to stay in the buildings well past the time in which the labs lock. So, if I accidentally get locked out of the lab while all my things are inside it would be bad. I think that we should be able to get our ID’s programmed so we have access to the labs when they are locked. Other than that, I have no complaints. Everybody digs the new dual monitor labs and some nights you have to fight for a spot in there.

- Inadequate in number. Need more supply of experimental tools.

- More people are enrolled in the university and there will need to be more laboratory experiments equiring more facilities.

- NA

- Need more computers in the laboratory

- New computer lab is very nice with updated software and hardware.

- Not accurate

- Often we are in the lab late and the fact that the doors lock, it can make it difficult to get in and out late at night.

- Some equipment could be updated.

- Some of the equipment seems old and running on the last leg, however I do understand that finances aren’t unlimited, so we survived!

- Still seem to be lacking sufficient computer facilities. The new lab is a great addition but it is usually being used by a class so it is not often available for student use except in the evenings. In addition, I spent hours upon hours in the Sweeney computer lounges especially as a senior. It would be nice to have microwaves and more vending options available or even a place to take a quick nap.

- The increased enrollment in the department and in the college of engineering is a definite cause for concern. The CBE department should definitely reach out to our corporate partners for funding expanding these areas.

- The lab facilities were adequate, but many of the labs we did had problems with the outcomes due to mechanical failures.

- The laboratory facilities are organized. They have all basic units of equipment for Chemical engineering.

- The laboratory facilities had most of basic equipments mentioned in ChE courses. However, some of them are old and need to be replaced

- The recently upgraded computers have notably lower quality keyboards and mice, and many have been broken all semester.

- Their fine.

- There is an issue with available space. The lab classes are growing bigger, and the space hasn’t changed, they are just fitting more people into a compact space. There are also a select group of older equipment that the TAs fight to keep running so that we can run the necessary experiments
They are okay. I just don’t like working in the building because it is close to nuclear engineering and have concerns about radiation.

They are sufficient

They’re good. Possibly low on supplies.

Upgrade equipment and also expand it so more students can take lab at the same time.

Very nice places.

Well organized

good and sufficient

more group study spaces and “open use rooms” ie with lost of white boards etc.

no concerns

none

satisfactory, with kind of enough facilities, but too compact

the old computer lab is very crowded during weekdays (duel monitors would be nice too). The new computer lab is nice, but not being able to use it during the day is an inconvenience (sometimes I resort to going to a different engineering building’s lab).

Comments or concerns regarding departmental study areas:

Although there are several computer labs, there are not very many areas in which one can just study. Ideally, this would have a large amount of space, big tables, possibly whiteboards, etc.

Better advertising of these areas would be helpful.

Did not use.

Didn’t use them that much.

Extended access would be nice via isu card or rfid.

Good.

I enjoyed using them often!

I mostly used the computer labs on the first floor. I almost always wanted a computer near me.

I think these are nice, having a fridge and a microwave is really nice.

I used the study areas once (basement) and it seemed a little crammed and out of date.

Make them more user friendly, more computers and make it aesthetically pleasing

N/A

Need more spaces available where small groups can work together.

Need more.

Never used

No comments.

None (3 Counts)

Some students were really loud, may consider setup some rule

Sometimes get a little bit too loud with groups and therefore bad studying areas.

The computer lab are always full before 4pm

The computer labs are fine, but the older computer lab (single monitor lab) is a bit dingy sometimes and my allergies really tend to act up in that particular room. The double monitor lab is wonderful though, and I really enjoy using it for studying and projects.

The keyboards in the newest computer lab seem to be of cheap quality. A majority of them have keys that do not work. The undergraduate
study lounge is disgusting, as if it gets cleaned once per year. The printers in both ChE labs are poorly maintained. They are often out of ink or paper.

- The study area on the third floor is nice, but the computers aren't networked to a printer, and there is no printer in the room either. there are also only a few outlets for you to use if you bring your own laptop up there.
- The upstairs study lounge is a great addition.
- Their fine.
- There are good study areas. The microwave and mini-fridge should be moved to the 3rd floor study lounge and regularly cleaned.
- They're good
- broad enough.
- mostly just computer labs, not real "study areas" although, at a point we did have to use computers for all homework...
- need more electric outlets
- no concerns
- none
- the computer labs were always full, especially in the hours when a class reversed.
- the new student lounge was a nice addition this year.
- there could be more computer lab space
- unsteady opening hour, not exactly sure when the building is closed
- well maintained

1.2

Comments or concerns regarding any other departmental facilities:

- -
- Adequate.
- Good.
- Good.
- Having PC computers available with a majority of the software saved me. It would be nice to have even more, as they get crowded during the day. I also like the new computer chairs much better (with the "cushy" seat).
- More group meeting rooms would be helpful.
- N/A (2 Counts)
- NA
- Nice building overall!
- No comment
- None (2 Counts)
- Nothing really.
- Seem to be okay. Dual monitors is great but seats are a bit rigid.
- Study rooms are very helpful and well maintained
- Sweeney locks WAY too early. It is good that the computer labs have been kept open later, but Sweeney should be open to chemical engineering students for longer hours and during holidays.
- The building overall is fine, but seems a little run down at times compared to other buildings on campus.
- The girls bathroom on the ground floor almost always smells bad.
- Their fine.
- Wish doors are not locked at 8pm on Saturdays.
- laboratory required more functioning apparatus, sometime few groups need to share one pipette, while many others were ruined or not suitable
- n/a
- no comments
- no concern
- none (3 Counts)
- you need to build more labs for the Che 325/426 sequence, it gets ridiculously crowded

1.720 Comment on the character of the faculty and student interaction in the department:

- All faculty are more than willing to help if it is asked for
- Close group of students and generally good relationship with faculty, especially this semester.
- Everyone in the department is so nice and willing to help you. I loved that part the most!
- Everyone is really friendly, and I have never had a problem while working in Sweeney with other people being disrespectful or rude.
- Extremely friendly and helpful. Best overall faculty on the campus!
- For the most part, faculty encourage one-on-one interaction through office hours and class participation, which is very helpful for difficult classes.
- Good
- Good and friendly. Ready to help.
- Good interactions. Very comfortable to talk to any faculty.
- Good. (2 Counts)
- Good. I get along with most professors and will greet them when I see them. I think that most of the professors are laid back and can make a joke or two to make everybody feel more comfortable.
- I never felt like any of my professors really cared if I succeeded or not.
- I think the department has a great relationship with its students.
- Many time professor just ignored the email from students, wasted student time especially when applying research job for instance. It take forever to get a response from faculty, before he or she can apply for the next one.
- Most faculty in the department are nice and friendly. They are pleased to help if I need. However, there is a distance between American students and international students.
- Most of the faculty is approachable, but not always personable. Almost all are willing to help, but it is clear that some enjoy teaching and some simply do not. In my opinion, the most devoted CBE professors that I have had in class are Dr. Loveland, Dr. Rollins, Dr. Schneider, Dr. B. Shanks with regards to knowledge of the material and successful presentation of the material to the class.
- NA
- No comment
- None
- Pretty decent. Dr. Loveland is awesome!
- Professors were always willing to help and readily available
- The Che department has a number of faculty members that are top notch and perform above most faculty members across all of ISU. Unfortunately there are also several faculty members that are among the bottom of the ISU faculty.
The believe the faculty and students interact in a way that is best described as respectful. I have great interactions with several professors and some on not so great interactions with a small number of professors. I feel that the faculty are very receptive to student needs and offer their time and knowledge more than adequately.

The faculty are friendly to talk with students.

The international student and american students generally only intermingle when required through project work. I think the character of the faculty is great.

There are a couple of occasional events that promote faculty and student interaction, but better advertisement and establishment of a relationship between student and faculty starting freshman year would be beneficial.

They vary highly depending on the faculty and student. Most of the time faculty have been willing to interact with students. It seems students feel comfortable going to faculty to ask questions.

Very nice, approachable professors.

Very positive.

I loved the faculty...all were more than willing to help outside of class

n/a

no comment

very dependent on the faculty, in general, very good for classes but not as good in an advisory capacity. I was also surprised that so few faculty try to recruit undergrads to their research (I ended up working mostly out of the department)

1.73) The department has an environment where students feel free from sexual harassment or discrimination:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>2.3%</th>
<th>0%</th>
<th>0.6%</th>
<th>36.4%</th>
<th>54.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Strongly agree

n=44
av.=4.41
md=5
dev.=0.82

1.74) The department has an environment where students feel free from racial harassment or discrimination:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>0%</th>
<th>2.3%</th>
<th>9.1%</th>
<th>40.9%</th>
<th>47.7%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Strongly agree

n=44
av.=4.34
md=4
dev.=0.75

1.75) The department has an environment where students feel free from harassment or discrimination based on sexual orientation:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>2.3%</th>
<th>0%</th>
<th>0.6%</th>
<th>38.6%</th>
<th>50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Strongly agree

n=44
av.=4.34
md=4.5
dev.=0.83

1.76) The department has an environment where students feel free from harassment or discrimination based on religion:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>0%</th>
<th>0%</th>
<th>14%</th>
<th>32.6%</th>
<th>53.5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Strongly agree

n=43
av.=4.4
md=5
dev.=0.73

1.77) If you could change one aspect of your undergraduate experience, what would you change?

Applying for internships and research more vigorously.

Curriculum need to be re-considered!

Do more volunteer work in the community and continuous involvement in a club through college.

Focus on learning the material more than getting better grades.

Get more involved in engineering clubs as a freshman or sophomore.

I would do undergraduate research earlier.

I would have NEVER came here for the first year of Gen-Eds.

I would have a more hands on adviser.

I would have found the time to study abroad and get more involved in ChE activities/groups.

I would have liked to study abroad, given more time and money.
I would have met with a medical school advisor and would have had more exposure to medical applications with regards to engineering.

I would have spent more time getting classes taken abroad to fit into my academic plan.

I would have started at Iowa State rather than transferred from a community college.

I would have started looking for an internship/co-op sooner.

I would have taken classes from the professors that cares for the student learning experience than grading them. I would have worked much harder than I did. I would have slept much more than I did.

If I did not have to work to pay for school I would have liked to get involved in more extracurricular activities and school related clubs.

More field trips and plant visits. I know what equipment symbols look like on a schematic but I don't really know what an actual separator and reactor looks like.

More focus on getting students involved in out of the class room activities

Nothing

Realistically nothing, however, I would like to take more classes like upper level physics or math.

Remove unwanted classes that we're never going to use in our lives from the curriculum.

Start doing research earlier

Take advantage of an international experience or complete an additional work term while in school.

The advisor system.

Travel abroad.

Wish I could get an internship or coop

Wish I studied abroad!

Would have done an internship earlier.

Would have lived on campus for a year

better advising, and better classes and support outside of classes (SI sessions, group study etc.)

getting more involved in activities

have a different and longer research experience with a faculty member

I would have appreciated more discussion of the opportunities available for undergraduate research

less study, more sleep.

no

nothing

participate in summer research program to have an intensive research experience

1.78 If you could change one aspect of the program what would you change?

- A larger variety of sections should be offered for ChE classes. It appears that most ChE classes are offered in the morning only, and I have found this to make it very difficult to fit classes outside the ChE department in my schedule. I did not think it should be so difficult to squeeze in my pre-med requirements.

- Add computer for using AutoCAD, more programming, better and focused industrial advice

- Allow D grades abroad to transfer.

- Change visual basic to MATLAB programming in engineering 160. the unit operations labs should be worth more than 2 credit hours

- Finding ways to make ChE more learnable because that is very helpful information.
Get rid of some of the old technology. Some of the techniques that we use are out of date and therefore don’t apply to the modern industry.

Have the different Ch E labs during the classes that the lab relates to. Have the mass transfer labs with the mass transfer class and distillation lab with separations class.

Homework help room.

I feel like a lot of the transport classes involve a lot of complicated differential equations that are only necessary to understand for graduate level research. I agree that we should be exposed to them to know where derivations come from and to have a general understanding of simple processes but for most chemical engineers that is all that is needed.

I think that we should have to take one more ChE elective, ditch BBMB (I am on the 20099 catalog I and am not sure if this is the case now), and have more space for 325 and 426/427.

I understand that we are the chemical and biological engineering department, but I think it is unnecessary for students who have no interest in pursuing a career in the health or biotechnology field to be subjected to BBMB301. My time would have been better spent taking another chemical engineering or professional elective.

I would adopt a curriculum similar to University of Wisconsin’s. They integrate unit-ops labs into other classes and this provides early interaction with chemical operations and puts their knowledge into physically observable systems.

I would allow leeway on credit count for courses taken abroad.

I would change the structure of the Numerical Methods/MATLAB course

I would have liked the professors to put us in homework groups in most, if not all of my ChE classes, so that I could have branched out and met more people, instead of just sticking with the same groups that I was comfortable with.

I would have liked to get a undergraduate BRT major, I wish something like that existed. (Keep in mind BSE didn’t exist when I started)

I would like more opportunities to work on multidisciplinary designs. Working with other types of engineers would allow me to understand what topics I am most responsible for and allow me to work with a more diverse group and expand my engineering knowledge.

Make everyone get at least one internship experiences.

Make it more hands on and less theory.

Make the coursework form standard form professor to professor, grading, difficulty and topics for each class varied a lot from prof to prof.

More computation and more math.

More lab class needed to added. One or half credit lab for every engineering course will help a lot.

More plant visits or field trips to actual facilities.

N/A (2 Counts)

NA

Nothing, the program is amazing.

Offer SI for higher level ChE classes

Promote interaction and networking between the younger and older students and also connect these students with more alumni.

The availability of lab classes. 325 and 425

Warmer faculty-student interactions.

Availability of chemical engineering electives. Each semester has a severely limited options

For students who want to go to graduate school, it had better to allow them select either thesis or capstone design should have some workshops as preparation for students who want to pursue graduate study

Have another design class to prepare for Ch E 430

Have better options for chemistry electives, change the ChE class into something that better prepares you for transitioning out of undergraduate school and into the professional world/grad school/other.

No
- none
- not sure
- nothing
- should have a choice between doing thesis or taking capstone design course depending on the future goal of student (graduate school or industry)

1.76 If you had a friend who was coming to ISU in the fall to study chemical engineering, what is the most important piece of advice that you could give them?

- Always get a second opinion with regards to the information your adviser provides.
- Apply for internships/ co-ops every semester
- Attempt to get a job early.
- Be prepared for the cold weather.
- Be prepared to work hard and devote a significant portion of time outside of class in order to graduate with a degree in chemical engineering.
- Be prepared to work hard and take time to truly learn the fundamentals taught in all math, science, and engineering classes. They all come back and tie together in the upper-level ChE classes.
- Be ready to work hard. Focus on communication skills.
- Box? Define your box! Never confirm to your teachers and work hard for what you believe in.
- Do not slack off.
- Don’t be afraid to ask the professors for help.
- Figure out your career path as fast as possible
- Find a homework group for all of your ChE classes.
- Focus on learning the material more than getting better grades
- Focus on really learning the material in calculus and especially differential equations, as it will be needed over and over. Skate through physics and ochem as they won’t be necessary for a chemical engineering degree after you pass them.
- Form a study group early. Don’t feel like you have to learn everything alone. It may start off easy but working with peers is all but necessary for long-term success.

- GET INVOLVED!!!
- Get a good GPA
- I hope you don’t anticipate enjoying your college years....but then again if you want your college degree to be a joke Psychology is always available.
- I would encourage them to organize their 4-year plan right away and spread out the difficult classes to maximize the learning experience in those classes (which are often the important ones). This is also crucial to avoid burning out.
- I would mention the names of professors that should be avoided as lectures, but I would also have a select number of professors to recommend.
- I would tell them to make sure to stay on top of their four year plan. With classes filling up faster, they need to make sure that they will be able to get in to the classes they need to graduate without trouble
- It is not easy but definitely worth it in the end. Plan on many long nights studying and sleep deprivation.
- Learn everything, do everything.
- Learn to live on very little sleep!
- Make friends. They will be your family and you will spend more time working with them than you can imagine.
- NA
Review material from old classes over breaks and long periods of time away from academics, it will be useful for future classes and make life easier for you.

Take advantage of what is available and be very proactive about finding all the opportunities.

To choose their adventure at Iowa State

To take Physics in the Spring not the fall.

ask when you have any question. Faculty and staff are willing to help.

be active, know more friends

form a study group early in their career

get to know your professors and do research

involve

involve more in society and activities.

learn to study before coming to ISU

make friends in the major, because that's what will get you through.

start taking the ChE classes as early as possible

study hard, but don't forget to take other academic opportunities in the department

work hard, but have fun

---

Q. Do you feel prepared to work in industry? If not, why?

A little, not as much because I haven't worked at a company as an intern or on a coop.

I am prepared

I do, but I'm not going into industry,

NO! (for planning to go into industry)

False idea that ChE doesn't need PE! Wrong wrong wrong. Under this economy the more certification you have, the better chance you will be hired with an ideal job. Go take Statics!

The earlier you figure out what you want to go into, the better you will choose on the courses to prepare yourself. (thus, take intern/co-op if possible)

No, because I haven't received any work experience, which isn't something the department can really do for me.

No, but it's not my intended career path.

No, no related experience in the field

No, the material I learned in class is theoretical and is not directly relevant to industry.

No, lack of experience.

Not really but I feel like I am an efficient communicator and am very professional so I make up for the lack in Chemical Engineering knowledge I gained at ISU.

Not really, I have been more focused in developing theoretically and for research as that is what I would like to do. I would have reviewed the content more if I was to go into industry for Chemical Engineering.

Not really, since I don't have hand on experience of what occurs in industry. It is always a gap between materials in text and the real stuff in industry

Somewhat, but I do wish I had been able to do an internship at some point to give me more hands on experience. I was unable to because of several knee surgeries I underwent over the summer breaks.

Yes (7 Counts)

Yes - largely in part to my 2 internship experiences but also due to the problem-solving skills I gained from the CBE curriculum.
Yes and No, I do feel like I have learned a lot however that most of my experience is from my internship.

Yes definitely

Yes, I feel like the education I received would allow me to function in an industrial setting quite easily

Yes, I have learned all concepts from my classes extremely well and have been taught how to apply them in an industrial setting

Yes, I have learned the ability to learn

Yes, between the internship and courses I feel I'm ready.

Yes, industrial experiences and knowing that there is a lot I still need to know and how to ask for help.

Yes, industry is cake. Once you figure out your groove and get trained where you work, it will be easy to apply what you have learned.

Yes, program provides a thorough knowledge of chemical engineering

Yes. (2 Counts)

Yes.

Yes.

somewhat.

with a little training yes.

yes (4 Counts)

yes because I will have allot to learn about the job and I believe my degree has prepared me to learn what is necessary in an efficient manner.

yes.

1.81) Do you use the Undergraduate Lounge (Room 0107)? If not, why?

Doesn't really appeal to me. I like to have computers.

I have taken naps there.

No because I don't know where it is

No, I always did homework at my apartment

No, I didn't know it existed until my senior year and have heard that it is not an area where my belongings will be safe and secure.

No, I like the computer lab... habit

No, because I never know about it

No, because I prefer to use the computers in the computer lab.

No, because the computer labs are usually all I require.

No, because when I am in Sweeney I'm there to work, not lounge. I can lounge at home. Put 30 Windows computers with the full suite of engineering software in the room and I might use it.

No, don't need to.

No, its poorly maintained.

No, will using somewhere else. No facilities available

No. I don't feel comfortable down there. It's so dark.

No. Didn't know it exist.

No. I did not know about that.

No. Library is a better place to study for me.
■ No. Too much walk.

■ Not usually. The computers in there have very inconvenient software, there is no printing, and there is no cell phone coverage down there. Signal is totally lost.

■ Not when I don't have to because it is generally filled with people talking and being loud which makes it difficult to focus and get things done.

■ Occasionally

■ Once, never needed otherwise.

■ Sometimes

■ Sometimes, when I need to get away from noisy environment in the computer labs

■ Sometimes. I don't get any cell service down there so it is not my preferred study location.

■ Yes (3 Counts)

■ Yes I use to because it was quiet but then it was getting over used and not quiet enough.

■ Yes, I've napped in there a few times between classes.

■ Yes, and I like it. I don't see many people in there often. I, along with other friends, use the lounge to take naps between classes or when we need some quiet time.

■ Yes, ever so often.

■ Yes, the updated windows computers and 24 hour access are fantastic!

■ Yes.

■ Yes. Excellent Nap Spot

■ no, I had no need to use it

■ no. It is creepy in the basement and not readily seen when walking past since it is in the basement

■ rarely, it is in a basement...

■ yes (3 Counts)

■ yes, a few times but for most of my degree the computers had linux and were useless

---

1.20 Where do you go to find a faculty member's schedule?

| Teaching/office hour schedule on their website | 46.5% |
| Schedule posted outside their door | 53.5% |

---

1.30 Is there anything that we should have asked about but didn't?

■ "Are there any professors in which you feel had a significant impact on your education, and why?"

■ I would answer Dr. Hillier, Dr. Clapp, Dr. Jarboe, and Dr. Jolls. These four professors in particular consistently treated students with respect, and worked very hard to provide relevant and helpful lectures. What's more, they made their classes interesting and fun, a task not easily accomplished in Chemical Engineering.

■ Ask how many hours students spend studying a week. Also, ask questions concerning difficulties students had to overcome to succeed. For example, due to my financial situation it was necessary for me to work 20 to even 40 hours a week. This is time that I would have rather spent focused on my degree, but could not.

■ Did I enjoy my adventure at Iowa State? Was it a positive experience overall?

■ Do you feel like your tuition money was being spent wisely?

A university should be teaching, buildings, learning, research,...get rid of VEISHA, SUB, EVERY club and activity, and every other nonsense program your throwing my next 5 years of earnings at.

P.S. - I don't know if frats and sororities are getting tuition money, but if there was ever an undeserving group of clowns its them.
2nd P.S. – Get rid minority scholarships! this has been and always will be reverse racism. If we’re going to go with “minorities are disadvantaged because their poor” argument (which is valid) then give the scholarships to poor students like the Pell Grants.

*screw you guys I’m going home*

- How much have you retained from your undergraduate courses for future studies?
- I don’t think so.
- I think that covers everything
- My only other comment is that having "day" lockers would be fantastic. We have to buy, carry, and use such massive textbooks that there is no way to carry them all around. If we had day lockers like the ones in the new State Gym, we could store things for a few hours and use them when needed. These wouldn’t be for overnight storage, but to have our personal textbooks and other supplies readily available to us would be nice.
- NA
- No (4 Counts)
- No further comments.
- No.
- None
- Nope
- Not on top on my head
- Not really.
- Not that I can think of. (3 Counts)
- Perhaps add more specific questions about each ChE core course.
- ask about specialties, I think we should be able to chose different "tracks" with given electives. On interviews, a lot of people ask what specialty I am and though i have taken several electrical engineering classes, it looses weight because its not a designated specialty.
- n/a
- no (2 Counts)
- no.
- nope
- nothing
- this is complete
- transfer student issues
Rate your current abilities to understand professional and ethical responsibility:

No ability: 18%, Excellent ability: 41%

Rate your current abilities to understand the global and societal impact of decisions:

No ability: 26%, Excellent ability: 37%

Rate your current abilities on knowledge of contemporary issues:

No ability: 26%, Excellent ability: 35%

Departmental Facilities. Please rate the current computational facilities available in the department:

Very poor: 28%, Very good: 41%

The quality of the available software is:

Very poor: 20%, Very good: 31%

Access to the computational facilities is:

Very poor: 11%, Very good: 25%

The condition of equipment in the departmental undergraduate laboratory is:

Very poor: 27%, Very good: 50%

The department has an environment where students feel free from sexual harassment or discrimination:

Strongly disagree: 56%, Strongly agree: 41%

The department has an environment where students feel free from racial harassment or discrimination:

Strongly disagree: 56%, Strongly agree: 41%

The department has an environment where students feel free from harassment or discrimination based on

Strongly disagree: 38%, Strongly agree: 53%
1. Please read the following instructions before you begin:

1.10 If you have had a professional experience in engineering (coop or internship), how important was that experience to your development?
- Waste of time
- Most Important

1.12 If you had an international experience, how important was that experience to your development?
- Waste of time
- Most Important

1.17 If you had a research experience, how important was that experience to your professional development?
- Waste of time
- Most Important

1.20 Compared to the learning opportunities in general at ISU, the quality of opportunities the Chemical and Biological Engineering Department provides are:
- Much lower
- Much better

1.21 Compared to the learning opportunities outside ISU, the quality of opportunities the Chemical & Biological Engineering Department provides are:
- Much lower
- Much better

1.28 If you have been involved in engineering societies or extracurricular activities, how important were those experiences to your professional development?
- Waste of time
- Most Important

1.31 If you have been involved in non-engineering societies or extracurricular activities, how important were those experiences to your professional development?
- Waste of time
- Most Important

1.35 How would you characterize the advising you received in the Chemical Engineering Department regarding making a career choice?
- Nonexistent
- Very good

1.36 How would you characterize the advising you received in the Chemical Engineering Department regarding preparing you for your career?
- Nonexistent
- Very good

1.37 How would you characterize the advising you received in the Chemical Engineering Department regarding quality of advice from Chemical Engineering Faculty?
- Nonexistent
- Very good

1.38 How would you characterize the advising you received in the Chemical Engineering Department regarding availability of advice from Chemical Engineering faculty?
- Nonexistent
- Very good

1.39 How would you characterize the advising you received in the Chemical Engineering Department regarding quality of advice from advisor Brenda Kutz?
- Nonexistent
- Very good

1.40 How would you characterize the advising you received in the Chemical Engineering Department regarding availability of advice from advisor Brenda Kutz?
- Nonexistent
- Very good

1.43 Rate your current abilities to apply knowledge of calculus and differential equations:
- No ability
- Excellent ability

1.44 Rate your current abilities to apply knowledge of statistics:
- No ability
- Excellent ability

1.45 Rate your current abilities to apply knowledge of chemistry:
- No ability
- Excellent ability

1.46 Rate your current abilities to apply knowledge of physics:
- No ability
- Excellent ability

1.47 Rate your current abilities to apply knowledge of engineering:
- No ability
- Excellent ability

1.48 Rate your current abilities to design and conduct experiments:
- No ability
- Excellent ability

1.49 Rate your current abilities to analyze and interpret data:
- No ability
- Excellent ability

1.50 Rate your current abilities to design a chemical engineering system:
- No ability
- Excellent ability

1.51 Rate your current abilities to function on multidisciplinary teams:
- No ability
- Excellent ability
1.52) Rate your current abilities to define/solve chemical engineering problems:

<table>
<thead>
<tr>
<th>No ability</th>
<th>Excellent ability</th>
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<tbody>
<tr>
<td></td>
<td>n=44 av.=4.14</td>
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</table>

1.53) Rate your current abilities to communicate effectively (written):

<table>
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<tr>
<th>No ability</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=4.34</td>
</tr>
</tbody>
</table>

1.54) Rate your current abilities to communicate effectively (verbal):

<table>
<thead>
<tr>
<th>No ability</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=4.2</td>
</tr>
</tbody>
</table>

1.55) Rate your current abilities to engage in life-long learning:

<table>
<thead>
<tr>
<th>Nonexistent</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=4.36</td>
</tr>
</tbody>
</table>

1.56) Rate your current abilities to use modern engineering tools:

<table>
<thead>
<tr>
<th>No ability</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=4.02</td>
</tr>
</tbody>
</table>

1.57) Rate your current abilities to function as an engineer in an international setting:

<table>
<thead>
<tr>
<th>No ability</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=3.8</td>
</tr>
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</table>

1.58) Rate your current abilities to function as a professional engineer:

<table>
<thead>
<tr>
<th>No ability</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=3.84</td>
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</tbody>
</table>

1.59) Rate your current abilities to pursue research and advanced studies:

<table>
<thead>
<tr>
<th>No ability</th>
<th>Excellent ability</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=3.84</td>
</tr>
</tbody>
</table>

1.60) Rate your current abilities to understand professional and ethical responsibility:

<table>
<thead>
<tr>
<th>No ability</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=4.23</td>
</tr>
</tbody>
</table>

1.61) Rate your current abilities to understand the global and societal impact of decisions:

<table>
<thead>
<tr>
<th>No ability</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=43 av.=4.12</td>
</tr>
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</table>

1.62) Rate your current abilities on knowledge of contemporary issues:

<table>
<thead>
<tr>
<th>No ability</th>
<th>Excellent ability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=43 av.=3.84</td>
</tr>
</tbody>
</table>

1.63) Departmental Facilities. Please rate the current computational facilities available in the department:

<table>
<thead>
<tr>
<th>Very poor</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=43 av.=3.74</td>
</tr>
</tbody>
</table>

1.64) The quality of the available software is:

<table>
<thead>
<tr>
<th>Very poor</th>
<th>Very good</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>n=44 av.=3.93</td>
</tr>
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</table>

1.65) Access to the computational facilities is:

<table>
<thead>
<tr>
<th>Very poor</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=3.57</td>
</tr>
</tbody>
</table>

1.67) The condition of equipment in the departmental undergraduate laboratory is:

<table>
<thead>
<tr>
<th>Very poor</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=3.8</td>
</tr>
</tbody>
</table>

1.72) The department has an environment where students feel free from sexual harassment or discrimination:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=4.41</td>
</tr>
</tbody>
</table>

1.73) The department has an environment where students feel free from racial harassment or discrimination:

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=4.34</td>
</tr>
</tbody>
</table>

1.74) The department has an environment where students feel free from harassment or discrimination based on sexual orientation:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=44 av.=4.34</td>
</tr>
</tbody>
</table>

1.75) The department has an environment where students feel free from harassment or discrimination based on religion:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=43 av.=4.4</td>
</tr>
</tbody>
</table>