NC State University

2015 Alumni Survey

College of Engineering: Chemical Engineering Program Insert

College of Engineering Questions

COEintro1 As a graduate of the College of Engineering, your opinions are very important in our programming and planning efforts. We appreciate your taking the time to answer a few questions specifically related to your experiences in your major.

COE1 This first section asks about a range of skills related to professional preparation. First, please select the appropriate option from the first drop-down list to indicate how well you were prepared in each area through your program of study at NC State.

Next, please indicate how important the area is to you in your current profession, including graduate/professional school. If you are not currently employed or in school, simply indicate how important these skills are to you now in general.

	Preparation (a)					
	Excellent (5)	Good (4)	Average (3)	Fair (2)	Poor (1)	Not Applicable (8)
Applying knowledge from your major in Engineering or Computer Science (1)	❍	❍	❍	❍	❍	❍
Applying knowledge of mathematics and science (2)	❍	❍	❍	❍	❍	❍
Designing and conducting experiments (3)	❍	❍	❍	❍	❍	❍
Analyzing and interpreting data (4)	❍	❍	❍	❍	❍	❍
Using statistical procedures (5)	❍	❍	❍	❍	❍	❍
Designing a system, component, or process to meet desired needs (6)	❍	❍	❍	❍	❍	❍
Testing a system and making improvements (7)	❍	❍	❍	❍	❍	❍
Identifying, formulating, and solving engineering or computer science problems (8)	❍	❍	❍	❍	❍	❍

	Importance (b)					
	Very Important (5)	Important (4)	Moderately Important (3)	Of Limited Importance (2)	Not Important (1)	Not Applicable (8)
Applying knowledge from your major in Engineering or Computer Science (1)	❍	❍	❍	❍	❍	❍
Applying knowledge of mathematics and science (2)	❍	❍	❍	❍	❍	❍
Designing and conducting experiments (3)	❍	❍	❍	❍	❍	❍
Analyzing and interpreting data (4)	❍	❍	❍	❍	❍	❍
Using statistical procedures (5)	❍	❍	❍	❍	❍	❍
Designing a system, component, or process to meet desired needs (6)	❍	❍	❍	❍	❍	❍
Testing a system and making improvements (7)	❍	❍	❍	❍	❍	❍
Identifying, formulating, and solving engineering or computer science problems (8)	❍	❍	❍	❍	❍	❍

COE2

	Preparation (a)					
	Excellent (5)	Good (4)	Average (3)	Fair (2)	Poor (1)	Not Applicable (8)
Using creativity in undertaking engineering projects (1)	❍	❍	❍	❍	❍	❍
Considering client and customer needs in developing systems and products (2)	❍	❍	❍	❍	❍	❍
Considering quality, durability, safety, and/or sustainability issues (3)	❍	❍	❍	❍	❍	❍
Functioning as a member of a team (4)	❍	❍	❍	❍	❍	❍
Working on multidisciplinary teams (5)	❍	❍	❍	❍	❍	❍
Assuming leadership roles (6)	❍	❍	❍	❍	❍	❍
Writing reports and other documents (7)	❍	❍	❍	❍	❍	❍
Making oral presentations (8)	❍	❍	❍	❍	❍	❍

	Importance (b)					
	Very Important (5)	Important (4)	Moderately Important (3)	Of Limited Importance (2)	Not Important (1)	Not Applicable (8)
Using creativity in undertaking engineering projects (1)	❍	❍	❍	❍	❍	❍
Considering client and customer needs in developing systems and products (2)	❍	❍	❍	❍	❍	❍
Considering quality, durability, safety, and/or sustainability issues (3)	❍	❍	❍	❍	❍	❍
Functioning as a member of a team (4)	❍	❍	❍	❍	❍	❍
Working on multidisciplinary teams (5)	❍	❍	❍	❍	❍	❍
Assuming leadership roles (6)	❍	❍	❍	❍	❍	❍
Writing reports and other documents (7)	❍	❍	❍	❍	❍	❍
Making oral presentations (8)	❍	❍	❍	❍	❍	❍

COE3

	Preparation (a)					
	Excellent (5)	Good (4)	Average (3)	Fair (2)	Poor (1)	Not Applicable (8)
Listening to and incorporating different perspectives and points of view (1)	❍	❍	❍	❍	❍	❍
Engaging in productive engineering and computer science practice (2)	❍	❍	❍	❍	❍	❍
Using tools and equipment necessary for engineering or computer science practice (3)	❍	❍	❍	❍	❍	❍
Engaging in professional and ethical engineering practice (4)	❍	❍	❍	❍	❍	❍
Considering the societal impact of engineering solutions (5)	❍	❍	❍	❍	❍	❍
Considering the global impact of engineering solutions (6)	❍	❍	❍	❍	❍	❍
Considering the environmental impact of engineering (7)	❍	❍	❍	❍	❍	❍
Undertaking project research and/or project management (8)	❍	❍	❍	❍	❍	❍

	Importance (b)					
	Very Important (5)	Important (4)	Moderately Important (3)	Of Limited Importance (2)	Not Important (1)	Not Applicable (8)
Listening to and incorporating different perspectives and points of view (1)	❍	❍	❍	❍	❍	❍
Engaging in productive engineering and computer science practice (2)	❍	❍	❍	❍	❍	❍
Using tools and equipment necessary for engineering or computer science practice (3)	❍	❍	❍	❍	❍	❍
Engaging in professional and ethical engineering practice (4)	❍	❍	❍	❍	❍	❍
Considering the societal impact of engineering solutions (5)	❍	❍	❍	❍	❍	❍
Considering the global impact of engineering solutions (6)	❍	❍	❍	❍	❍	❍
Considering the environmental impact of engineering (7)	❍	❍	❍	❍	❍	❍
Undertaking project research and/or project management (8)	❍	❍	❍	❍	❍	❍

COE4

	Preparation (a)					
	Excellent (5)	Good (4)	Average (3)	Fair (2)	Poor (1)	Not Applicable (8)
Engaging in entrepreneurial activities (1)	❍	❍	❍	❍	❍	❍
Undertaking economic analyses of capital projects (2)	❍	❍	❍	❍	❍	❍
Managing cost and time considerations (3)	❍	❍	❍	❍	❍	❍
Adapting to changing project parameters and circumstances (4)	❍	❍	❍	❍	❍	❍
Working within constraints presented (5)	❍	❍	❍	❍	❍	❍
Understanding and adapting to organizational culture(s) (6)	❍	❍	❍	❍	❍	❍
Developing a consistent work ethic (7)	❍	❍	❍	❍	❍	❍
Considering various career options within the discipline (8)	❍	❍	❍	❍	❍	❍

	Importance (b)					
	Very Important (5)	Important (4)	Moderately Important (3)	Of Limited Importance (2)	Not Important (1)	Not Applicable (8)
Engaging in entrepreneurial activities (1)	❍	❍	❍	❍	❍	❍
Undertaking economic analyses of capital projects (2)	❍	❍	❍	❍	❍	❍
Managing cost and time considerations (3)	❍	❍	❍	❍	❍	❍
Adapting to changing project parameters and circumstances (4)	❍	❍	❍	❍	❍	❍
Working within constraints presented (5)	❍	❍	❍	❍	❍	❍
Understanding and adapting to organizational culture(s) (6)	❍	❍	❍	❍	❍	❍
Developing a consistent work ethic (7)	❍	❍	❍	❍	❍	❍
Considering various career options within the discipline (8)	❍	❍	❍	❍	❍	❍

COE5

	Preparation (a)					
	Excellent (5)	Good (4)	Average (3)	Fair (2)	Poor (1)	Not Applicable (8)
Considering various career options outside of the discipline (1)	❍	❍	❍	❍	❍	❍
Keeping abreast of developments and advances in the field (2)	❍	❍	❍	❍	❍	❍
Engaging in lifelong learning, whether formally or informally (3)	❍	❍	❍	❍	❍	❍
Applying lessons learned to new situations (4)	❍	❍	❍	❍	❍	❍
Mentoring and teaching others (5)	❍	❍	❍	❍	❍	❍
Pursuing graduate education or a professional degree (6)	❍	❍	❍	❍	❍	❍
Taking professional licensure exam(s) (7)	❍	❍	❍	❍	❍	❍
Appreciating the arts, humanities, and social sciences (8)	❍	❍	❍	❍	❍	❍

	Importance (b)					
	Very Important (5)	Important (4)	Moderately Important (3)	Of Limited Importance (2)	Not Important (1)	Not Applicable (8)
Considering various career options outside of the discipline (1)	❍	❍	❍	❍	❍	❍
Keeping abreast of developments and advances in the field (2)	❍	❍	❍	❍	❍	❍
Engaging in lifelong learning, whether formally or informally (3)	❍	❍	❍	❍	❍	❍
Applying lessons learned to new situations (4)	❍	❍	❍	❍	❍	❍
Mentoring and teaching others (5)	❍	❍	❍	❍	❍	❍
Pursuing graduate education or a professional degree (6)	❍	❍	❍	❍	❍	❍
Taking professional licensure exam(s) (7)	❍	❍	❍	❍	❍	❍
Appreciating the arts, humanities, and social sciences (8)	❍	❍	❍	❍	❍	❍

COE6 First, in thinking about your experience in your profession, how important were the following undergraduate learning experiences.

Next, do you agree or disagree that you were given enough experiences in the College of Engineering in the following areas?

	Importance (a)					
	Very Important (5)	Important (4)	Moderately Important (3)	Of Limited Importance (2)	Not Important (1)	Not Applicable (8)
Engineering assignments that required classroom presentations to gain good oral presentation skills (1)	❍	❍	❍	❍	❍	❍
Engineering assignments that required written reports to gain good report-writing skills (2)	❍	❍	❍	❍	❍	❍
Engineering assignments related to the knowledge of contemporary issues (3)	❍	❍	❍	❍	❍	❍
The senior design project(s) that provided an opportunity to integrate learning in major and non-major courses (4)	❍	❍	❍	❍	❍	❍
Design activities throughout the engineering program (5)	❍	❍	❍	❍	❍	❍
Coursework activities in the program as a whole that required synthesis, creativity, and open-ended thinking (6)	❍	❍	❍	❍	❍	❍
Computing exercises in engineering courses (7)	❍	❍	❍	❍	❍	❍
Hands-on experiences in engineering lab courses (8)	❍	❍	❍	❍	❍	❍
Technical mastery of computational tools and software in engineering courses (9)	❍	❍	❍	❍	❍	❍
Using computational tools to solve complex engineering problems (10)	❍	❍	❍	❍	❍	❍

	Received Adequate Experience (b)					
	Agree (5)	Tend to Agree (4)	Neither Agree nor Disagree (3)	Tend to Disagree (2)	Disagree (1)	Not Applicable (8)
Engineering assignments that required classroom presentations to gain good oral presentation skills (1)	❍	❍	❍	❍	❍	❍
Engineering assignments that required written reports to gain good report-writing skills (2)	❍	❍	❍	❍	❍	❍
Engineering assignments related to the knowledge of contemporary issues (3)	❍	❍	❍	❍	❍	❍
The senior design project(s) that provided an opportunity to integrate learning in major and non-major courses (4)	❍	❍	❍	❍	❍	❍
Design activities throughout the engineering program (5)	❍	❍	❍	❍	❍	❍
Coursework activities in the program as a whole that required synthesis, creativity, and open-ended thinking (6)	❍	❍	❍	❍	❍	❍
Computing exercises in engineering courses (7)	❍	❍	❍	❍	❍	❍
Hands-on experiences in engineering lab courses (8)	❍	❍	❍	❍	❍	❍
Technical mastery of computational tools and software in engineering courses (9)	❍	❍	❍	❍	❍	❍
Using computational tools to solve complex engineering problems (10)	❍	❍	❍	❍	❍	❍

COE7

	Very Frequently (4)	Frequently (3)	Sometimes (2)	Very Seldom, If Ever (1)	Not Applicable (8)
How frequently do you attend meetings or conferences of professional societies? (1)	❍	❍	❍	❍	❍
How frequently do you publish articles, papers, etc. for the general benefit of the field? (2)	❍	❍	❍	❍	❍
How frequently do you upgrade your technical skills through formal courses, short courses, seminars or self-paced instruction? (3)	❍	❍	❍	❍	❍
How frequently do you upgrade your technical skills by reading journals/periodicals in your field or use electronic media such as the Internet for research, reference or problem solving? (4)	❍	❍	❍	❍	❍

COE8 Please use this space to share any general comments you have about your experience in the College of Engineering or your department, and/or tell us why you were particularly satisfied or dissatisfied with any aspect of your education in the college.

Chemical Engineering Program Questions

CHEintro1 The Chemical Engineering Program at North Carolina State University has defined specific Program Educational Objectives that graduates are expected to attain within a few years after graduation. As part of our ABET accreditation, we must demonstrate the extent to which our graduates have attained these Program Educational Objectives since graduating from NC State. We appreciate your taking the time to answer these questions.

CHE1 For each of the following Program Educational Objectives (PEO), please consider your experiences and opportunities since earning your undergraduate degree in Chemical Engineering, and indicate the extent to which you have attained the objectives described.

	To a very large extent attained (5)	To a large extent attained (4)	To a moderate extent attained (3)	To a small extent attained (2)	Not at all attained (1)	Not applicable (8)
Excel in engineering practice and/or entrepreneurship in various industries, including petrochemical, biochemical, pharmaceutical, fine chemical, environmental, semi-conductor, pulp and paper, advanced materials, and health care. (1)	❍	❍	❍	❍	❍	❍
Advance in positions of increasing leadership responsibilities in your chosen career field. (2)	❍	❍	❍	❍	❍	❍
Earn an advanced degree or certification leading to a career in academia, law, medicine, or research and development. (3)	❍	❍	❍	❍	❍	❍
Exhibit professionalism, a habit of continual learning, interest in contemporary issues of importance to society, appreciation of the impact of engineering development in society, and ethical responsibility−particularly in the context of environmental protection, process/product safety, financial accountability, and community well-being. (4)	❍	❍	❍	❍	❍	❍

CHE2 Please share any feedback you have on the appropriateness of the four Program Educational Objectives mentioned previously. Specifically, which, if any, would you drop and why? What, if anything, is missing?

CHE3 How many different professional organizations have you been a member of since graduating?

❍ 0 (0)
❍ 1 (1)
❍ 2 (2)
❍ 3 (3)
❍ 4 or more (4)

CHE4 Have you obtained a postgraduate certificate since graduating? (Note: This does not include any advanced degrees you might have obtained, e.g., Masters, Doctoral, etc.)

❍ Yes (please specify what certificate(s) you have obtained) (1) ____CHE4_1_TEXT_____
❍ No (0)

CHE5 Have you obtained professional licensure?

- ❍ Yes (4)
- ❍ No, but plan to do so in the next three years (3)
- ❍ No, but might do so at some point in the future (2)
- ❍ No, and do not plan on doing so (1)

Answer If CHE5 – "No, but plan to do so in the next three years" Is Selected

CHE6 Have you reviewed any licensure preparation materials?

- ❍ Yes (1)
- ❍ No (0)

CHE7 To what extent have your further studies advanced your career?

- ❍ To a great extent (5)
- ❍ To a large extent (4)
- ❍ To a moderate extent (3)
- ❍ To a small extent (2)
- ❍ Not at all (1)

CHE8 How many times have you been promoted since you graduated? (Please include as a promotion any change of employer that you regard as career advancement.)

- ❍ 0 (0)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 or more (3)