

2025 Advisory Board Surveys

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- Part II pertains to the relevance, consistency, and cadet awareness of the program educational objectives. Your opinions and our discussions will help shape future revisions of these objectives.
- Part III contains some free-form questions where you can comment on the quality of the curriculum, the meeting itself or any other items you would like us to address.
- The survey is electronically fillable. Use the tab key to step though the form.
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The mission of the chemical engineering program is to prepare commissioned leaders of character who are proficient in applying chemical and engineering principles to solve problems in a complex operational environment.

Chemical Engineering Program Objectives (Revised in 2024): During a career as commissioned officers in the United States Army and beyond, program graduates:

- Demonstrate effective leadership by leveraging chemical engineering expertise and precise technical communication.
- Contribute to the solution of complex problems in a dynamic environment.
- Apply disciplined technical expertise to succeed in advanced study programs.

Chemical Engineering General Program Outcomes (Outcomes 1-7): On completion of the chemical engineering program, our graduates demonstrate an ability to:

- Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- Communicate effectively with a range of audiences.
- Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- Acquire and apply new knowledge as needed, using appropriate learning strategies.

Chemical Engineering Curriculum Outcomes (Outcome 8): The program provides the graduate with a thorough grounding and working knowledge of the chemical sciences, including:

- Chemistry
- Material and energy balances
- Safety and environmental factors
- Thermodynamics of physical and chemical equilibria
- Heat, mass, and momentum transfer
- Chemical reaction engineering
- Continuous and staged separation operations
- Process dynamics and control
- Modern experimental and computing techniques
- Process design

Part I. Student Outcomes. Review the data and then check the box in the column that most closely represents your opinion.

The cadets in the program are able to:	Strongly Disagree	Neutral	Strongly Agree
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.			✓
• Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.			✓
• Communicate effectively with a range of audiences.			✓
• Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.			✓
• Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.			✓
• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.			✓
• Acquire and apply new knowledge as needed, using appropriate learning strategies.			✓
• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.			✓

Part II. Program Objectives. Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree
The program objectives are consistent with the USMA mission.			✓
The program objectives are consistent with the needs of the Army.			✓
The program curriculum supports the program objectives.			✓
The student outcomes are consistent with the program mission and objectives.			✓
The program has a process for periodically assessing the achievement of its student outcomes.			✓
The survey methods used by the program are effective.			✓
The cadets in the program are aware of the program objectives.			✓
The cadets are given an opportunity to provide their opinion about the program objectives.			✓
The cadets are satisfied with the courses in the program.			✓
The faculty are aware of the program objectives.			✓
The faculty are given an opportunity to provide their opinion about the program objectives.			✓

Part III. Open Questions. Answer the questions below or provide other input as desired.

Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum? Please explain.

The program is proceeding along the right path. I believe that a numerical methods class would be advantageous to the Program.

Do you have any suggestions to improve the advisory board meeting for next year?

The only item i would like to add here is that there is not a way to replicate meeting in person. Would it be possible to lock in the funding for the visit in the Fall so the funding will not get taken away in the Spring. Meeting is critical for gauging the atmospherics of the program and interacting with the Cadets.

Please add any addition comments that you would like to make below.

The Program is progressing and gaining more and more chemical engineering students. I would like to see the addition of a biomolecular, or biomedical engineering option in the Department at some point. I would also like to see a numerical methods course, that could even teach some Machine Learning basics.

Name: Susan Daniel

Date: 05/30/25

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Part I. Student Outcomes. Review the data and then check the box in the column that most closely represents your opinion.

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• Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.			✓
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• Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.			✓
• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.			✓
• Acquire and apply new knowledge as needed, using appropriate learning strategies.			✓
• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.			✓

Name: Susan Daniel

Date: 05/30/25

Part II. Program Objectives. Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree
The program objectives are consistent with the USMA mission.			✓
The program objectives are consistent with the needs of the Army.			✓
The program curriculum supports the program objectives.			✓
The student outcomes are consistent with the program mission and objectives.			✓
The program has a process for periodically assessing the achievement of its student outcomes.			✓
The survey methods used by the program are effective.			✓
The cadets in the program are aware of the program objectives.			✓
The cadets are given an opportunity to provide their opinion about the program objectives.			✓
The cadets are satisfied with the courses in the program.			✓
The faculty are aware of the program objectives.			✓
The faculty are given an opportunity to provide their opinion about the program objectives.			✓

Name: Susan Daniel

Date: 05/30/25

Part III. Open Questions. Answer the questions below or provide other input as desired.

Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum? Please explain.

no, the courses that already exist in the curriculum are appropriate for the program educational goals.

Do you have any suggestions to improve the advisory board meeting for next year?

It was a shame we could not meet, as the discussion among us is most valuable to thoroughly assessing the program, but I understand the circumstances. I look forward to getting back to regular meetings. Should that not occur, perhaps setting aside at least one afternoon to review the slides with us and provide some breakout room time for us to discuss, followed by Q&A with the faculty would be a better substitute.

Please add any addition comments that you would like to make below.

It looks like ethics dipped a bit and is the lowest (page 4 of the slide deck) as well as safety and health (page 7) dropping too (also summarized on page 8). It is kind of concerning for the officers of the military to not be high in these categories. Some of the other slippage in the technical areas might be due to the drop in math skills as well. This is something we have seen here at Cornell too, post-pandemic. Just something to be aware and stay on top of. It appears as we get farther away from the pandemic, this is rebounding so I might expect you will see that too.

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Name: Paul Dietrich

Date: 06/04/25

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• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.			✓
• Acquire and apply new knowledge as needed, using appropriate learning strategies.			✓
• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.			✓

Name: Paul DietrichDate: 06/04/25**Part II. Program Objectives.** Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree
The program objectives are consistent with the USMA mission.			✓
The program objectives are consistent with the needs of the Army.			✓
The program curriculum supports the program objectives.			✓
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The cadets in the program are aware of the program objectives.			✓
The cadets are given an opportunity to provide their opinion about the program objectives.			✓
The cadets are satisfied with the courses in the program.			✓
The faculty are aware of the program objectives.			✓
The faculty are given an opportunity to provide their opinion about the program objectives.			✓

Name: Paul Dietrich

Date: 06/04/25

Part III. Open Questions. Answer the questions below or provide other input as desired.

Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum? Please explain.

I continue to believe that Chemical Engineers should be required to take both intro Organic Chemistry and Intro 2 organic chemistry

Do you have any suggestions to improve the advisory board meeting for next year?

It is critical that the board actually meet and meet the students to get direct feedback on the courses and in particular to get feedback on those that the students are not doing well in. If an actual meeting cannot be held, I believe that this negatively impacts the feedback of the board.

Please add any addition comments that you would like to make below.

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Name: Lucy Hair

Date: 5/30/2025

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Part I. Student Outcomes. Review the data and then check the box in the column that most closely represents your opinion.

The cadets in the program are able to:	Strongly Disagree	Neutral	Strongly Agree
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.			✓
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• Communicate effectively with a range of audiences.			✓
• Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.			✓
• Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.			✓
• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.			✓
• Acquire and apply new knowledge as needed, using appropriate learning strategies.			✓
• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.			✓

Name: Lucy Hair

Date: 5/30/2025

Part II. Program Objectives. Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree
The program objectives are consistent with the USMA mission.			✓
The program objectives are consistent with the needs of the Army.			✓
The program curriculum supports the program objectives.			✓
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The cadets are satisfied with the courses in the program.			✓
The faculty are aware of the program objectives.			✓
The faculty are given an opportunity to provide their opinion about the program objectives.			✓

Part III. Open Questions. Answer the questions below or provide other input as desired.

Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum? Please explain.

In previous years, I have expressed that a single semester of organic chemistry is insufficient to do more than learn the language of it, not to understand the how and why of reactions. I still think that and would like to see a second semester added.

I don't know how to evaluate some of the courses that look marginal on the bar charts without further discussion with the faculty, cadets, and board. So I'm unsure if any other classes should be added.

Do you have any suggestions to improve the advisory board meeting for next year?

Meeting in person with the cadets, faculty, and board allows a better, more complete assessment of how well the program meets its goals. I think this is an important part of the process.

The extensive and thorough bar charts provided for each program objective, which include class performance, student evaluations, faculty evaluations, and results on the professional engineering exam, make it possible to carry out a surprisingly rapid and thorough evaluation.

Please add any addition comments that you would like to make below.

I'd like to thank the faculty for their dedication to the education of these marvelous young chemical engineering cadets. Thank you.

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• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.			✓

Name: COL Aaron HillDate: 05/27/25**Part II. Program Objectives.** Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree
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The cadets are satisfied with the courses in the program.			✓
The faculty are aware of the program objectives.			✓
The faculty are given an opportunity to provide their opinion about the program objectives.			✓

Name: COL Aaron Hill

Date: 05/27/25

Part III. Open Questions. Answer the questions below or provide other input as desired.

Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum? Please explain.

We are so limited in our ability to deliver courses given our 47-month experience and the number of humanity courses our cadets must take. I'd be able to form more of an opinion if we had the chance to talk with cadets. Thus, I'll say no at this point.

Do you have any suggestions to improve the advisory board meeting for next year?

Not for you! Hopefully, travel restrictions will not keep us from meeting next year. Thank you for keeping us in the loop and for providing us with these materials.

Please add any addition comments that you would like to make below.

2025 Advisory Board Surveys

Welcome to our annual advisory board meeting. As you know, we consider each of you to be valued shareholders in our program and the meeting is our annual shareholder's meeting, where we show you our performance report and discuss methods of improving the program. This document is your official advisory board survey, and it is *extremely important to our program*. It is designed to do two things. First, the completed surveys provide *documentation* that you have been briefed on the performance of our cadets and the relevance of the program objectives, helping us maintain our accreditation. Second, it allows us to use your collective knowledge and experience to *identify areas* where we might need improvement. The surveys are based in part on the data that we present to you during this meeting, and your responses are your "thumbs up or down" to the various performance indicators we are tracking. This survey is part of the assessment for *Academic Year 2024* (cadets who graduated in May 2024).

Instructions

- The survey pertains to student outcomes (Part I), program educational objectives (Part II), and program improvement (Part III). You will be given time during the day to answer the questions.
- For Part I, use the data to evaluate the attainment of our student outcomes. You will also meet with cadets, and the opinions you form of them might also influence your ratings. It is completely appropriate to use that information in the formation of your opinions.
- Part II pertains to the relevance, consistency, and cadet awareness of the program educational objectives. Your opinions and our discussions will help shape future revisions of these objectives.
- Part III contains some free-form questions where you can comment on the quality of the curriculum, the meeting itself or any other items you would like us to address.
- The survey is electronically fillable. Use the tab key to step though the form.
- *The surveys are due by the end of the day, 11 April 2025 or as soon as possible.* If you complete the survey after you leave, please email the electronic survey or mail the physical copy to us as soon as possible.

The mission of the chemical engineering program is to prepare commissioned leaders of character who are proficient in applying chemical and engineering principles to solve problems in a complex operational environment.

Chemical Engineering Program Objectives (Revised in 2024): During a career as commissioned officers in the United States Army and beyond, program graduates:

- Demonstrate effective leadership by leveraging chemical engineering expertise and precise technical communication.
- Contribute to the solution of complex problems in a dynamic environment.
- Apply disciplined technical expertise to succeed in advanced study programs.

Chemical Engineering General Program Outcomes (Outcomes 1-7): On completion of the chemical engineering program, our graduates demonstrate an ability to:

- Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- Communicate effectively with a range of audiences.
- Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- Acquire and apply new knowledge as needed, using appropriate learning strategies.

Chemical Engineering Curriculum Outcomes (Outcome 8): The program provides the graduate with a thorough grounding and working knowledge of the chemical sciences, including:

- Chemistry
- Material and energy balances
- Safety and environmental factors
- Thermodynamics of physical and chemical equilibria
- Heat, mass, and momentum transfer
- Chemical reaction engineering
- Continuous and staged separation operations
- Process dynamics and control
- Modern experimental and computing techniques
- Process design

Part I. Student Outcomes. Review the data and then check the box in the column that most closely represents your opinion.

The cadets in the program are able to:	Strongly Disagree	Neutral	Strongly Agree
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.			✓
• Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.			✓
• Communicate effectively with a range of audiences.			✓
• Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.			✓
• Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.			✓
• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.			✓
• Acquire and apply new knowledge as needed, using appropriate learning strategies.			✓
• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.			✓

Name: Gautham KrishnamoorthyDate: 06/10/25**Part II. Program Objectives.** Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree
The program objectives are consistent with the USMA mission.			✓
The program objectives are consistent with the needs of the Army.			✓
The program curriculum supports the program objectives.			✓
The student outcomes are consistent with the program mission and objectives.			✓
The program has a process for periodically assessing the achievement of its student outcomes.			✓
The survey methods used by the program are effective.			✓
The cadets in the program are aware of the program objectives.			✓
The cadets are given an opportunity to provide their opinion about the program objectives.			✓
The cadets are satisfied with the courses in the program.			✓
The faculty are aware of the program objectives.			✓
The faculty are given an opportunity to provide their opinion about the program objectives.			✓

Part III. Open Questions. Answer the questions below or provide other input as desired.

Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum? Please explain.

None. I continue to feel that you offer a well rounded program given the time constraints on the cadets.

Do you have any suggestions to improve the advisory board meeting for next year?

None. Best wishes with your accreditation visit next year.

Please add any addition comments that you would like to make below.

FE exam pass rates have dropped over the past 2 years (although still higher than national averages). Course grades in Organic Chemistry have also dropped over the past 2 years. Are these indicative of the level of academic preparation of the incoming cohort?

Student response surveys for CH400 (Is this the FE prep course?) are lower than expected level of attainment for several of the student outcomes while the course embedded student indicator results are above the expected level of attainment. Any insights into the reasons for the mismatch would be useful.

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Name: Matthew Liberatore

Date: 06/06/25

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Chemical Engineering Curriculum Outcomes (Outcome 8): The program provides the graduate with a thorough grounding and working knowledge of the chemical sciences, including:

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- Process dynamics and control
- Modern experimental and computing techniques
- Process design

Part I. Student Outcomes. Review the data and then check the box in the column that most closely represents your opinion.

The cadets in the program are able to:	Strongly Disagree	Neutral	Strongly Agree
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.			✓
• Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.			✓
• Communicate effectively with a range of audiences.			✓
• Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.			✓
• Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.			✓
• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.			✓
• Acquire and apply new knowledge as needed, using appropriate learning strategies.			✓
• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.			✓

Part II. Program Objectives. Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree
The program objectives are consistent with the USMA mission.			✓
The program objectives are consistent with the needs of the Army.			✓
The program curriculum supports the program objectives.			✓
The student outcomes are consistent with the program mission and objectives.			✓
The program has a process for periodically assessing the achievement of its student outcomes.			✓
The survey methods used by the program are effective.			✓
The cadets in the program are aware of the program objectives.			✓
The cadets are given an opportunity to provide their opinion about the program objectives.			✓
The cadets are satisfied with the courses in the program.			✓
The faculty are aware of the program objectives.			✓
The faculty are given an opportunity to provide their opinion about the program objectives.			✓

Part III. Open Questions. Answer the questions below or provide other input as desired.

Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum? Please explain.

Curriculum is sound.

Do you have any suggestions to improve the advisory board meeting for next year?

Be able to meet in person!

Please add any addition comments that you would like to make below.

Is there any correlation between cadet GPA and not passing the FE? Staying above the average pass rate is a very good indicator of a healthy program.

Cutting data presented to the last 5 or 6 years would make the figures and analysis more focused in future years.

Table 4-2 should be reported to two sig figs or 0.1 since the stdev values are all much bigger than 0.1.

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Name: Kelly Schultz

Date: 06/16/2025

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- Heat, mass, and momentum transfer
- Chemical reaction engineering
- Continuous and staged separation operations
- Process dynamics and control
- Modern experimental and computing techniques
- Process design

Part I. Student Outcomes. Review the data and then check the box in the column that most closely represents your opinion.

The cadets in the program are able to:	Strongly Disagree	Neutral	Strongly Agree
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.			✓
• Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.			✓
• Communicate effectively with a range of audiences.			✓
• Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.			✓
• Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.			✓
• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.			✓
• Acquire and apply new knowledge as needed, using appropriate learning strategies.			✓
• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.			✓

Name: Kelly Schultz

Date: 06/16/2025

Part II. Program Objectives. Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree
The program objectives are consistent with the USMA mission.			✓
The program objectives are consistent with the needs of the Army.			✓
The program curriculum supports the program objectives.			✓
The student outcomes are consistent with the program mission and objectives.			✓
The program has a process for periodically assessing the achievement of its student outcomes.			✓
The survey methods used by the program are effective.			✓
The cadets in the program are aware of the program objectives.			✓
The cadets are given an opportunity to provide their opinion about the program objectives.			✓
The cadets are satisfied with the courses in the program.			✓
The faculty are aware of the program objectives.			✓
The faculty are given an opportunity to provide their opinion about the program objectives.			✓

Part III. Open Questions. Answer the questions below or provide other input as desired.

Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum? Please explain.

Possibly having some bio courses that could be swapped out with the intro to electrical engineering or other out of topic classes might be nice. I know these were being developed, I just can't remember how the students can fit these courses into their schedules.

Do you have any suggestions to improve the advisory board meeting for next year?

Have a meeting

Please add any addition comments that you would like to make below.

Organic chemistry still seems to be place for improvement. The average GPA for the class is very low, there may need to be an intervention to break this cycle since it seems to have persisted for some time.

Name: Shipe) Kevin

Date: 4/12/24

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Name: Shipe

Date: 4/12/24

The mission of the chemical engineering program is to prepare commissioned leaders of character who are proficient in applying chemical and engineering principles to solve problems in a complex operational environment.

Chemical Engineering Program Objectives: During a career as commissioned officers in the United States Army and beyond, program graduates:

- Demonstrate effective leadership and chemical engineering expertise.
- Contribute to the solution of infrastructure or operational problems in a complex operational environment.
- Succeed in graduate school or other advanced study programs.
- Advance their careers through clear and precise technical communication.

Chemical Engineering General Program Outcomes (Outcomes 1-7): On completion of the chemical engineering program, our graduates demonstrate an ability to:

- [Student Outcome 1] Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- Communicate effectively with a range of audiences.
- Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
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- Heat, mass, and momentum transfer
- Chemical reaction engineering
- Continuous and staged separation operations
- Process dynamics and control
- Modern experimental and computing techniques
- Process design

Name: ShipeDate: 4/12/24

Part I. Student Outcomes. Review the data and then check the box in the column that most closely represents your opinion.

The cadets in the program are able to:	Strongly Disagree	Neutral	Strongly Agree	
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Communicate effectively with a range of audiences.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Acquire and apply new knowledge as needed, using appropriate learning strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Name: ShipeDate: 4/12/24**Part II. Program Objectives.** Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree	
The program objectives are consistent with the USMA mission.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The program objectives are consistent with the needs of the Army.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The student outcomes are consistent with the program mission and objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The program has a process for periodically assessing the achievement of its student outcomes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The survey methods used by the program are effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The cadets are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Shipe

Date: 4/12/24

Part III. Open Questions. Answer the questions below or provide other input as desired.

Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum? Please explain.

Some cadets expressed interest in a software intro course such as for ChemCAD or Mathematica, in order to spend less time learning the basics during implementation and are able to move quickly more into application.

Possibly early introduction to the Unit Operations Lab.

Do you have any suggestions to improve the advisory board meeting for next year?

The discussions were good, but I'd like more time with the Cadets as they give good feedback to the earlier side of the program. Possibly some time with the Yaks, too.

Please add any addition comments that you would like to make below.

It would be fun to be able to have lunch with the cadets in the Mess. I remember sometimes we would have guests and it created interesting discussions among the cadets and guests.

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Name: Michael Theising

Date: 06/12/25

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- Material and energy balances
- Safety and environmental factors
- Thermodynamics of physical and chemical equilibria
- Heat, mass, and momentum transfer
- Chemical reaction engineering
- Continuous and staged separation operations
- Process dynamics and control
- Modern experimental and computing techniques
- Process design

Part I. Student Outcomes. Review the data and then check the box in the column that most closely represents your opinion.

The cadets in the program are able to:	Strongly Disagree	Neutral	Strongly Agree
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.			✓
• Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.			✓
• Communicate effectively with a range of audiences.			✓
• Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.			✓
• Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.			✓
• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.			✓
• Acquire and apply new knowledge as needed, using appropriate learning strategies.			✓
• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.			✓

Name: Michael Theising

Date: 06/12/25

Part II. Program Objectives. Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree
The program objectives are consistent with the USMA mission.			✓
The program objectives are consistent with the needs of the Army.			✓
The program curriculum supports the program objectives.			✓
The student outcomes are consistent with the program mission and objectives.			✓
The program has a process for periodically assessing the achievement of its student outcomes.			✓
The survey methods used by the program are effective.			✓
The cadets in the program are aware of the program objectives.			✓
The cadets are given an opportunity to provide their opinion about the program objectives.			✓
The cadets are satisfied with the courses in the program.			✓
The faculty are aware of the program objectives.			✓
The faculty are given an opportunity to provide their opinion about the program objectives.			✓

Part III. Open Questions. Answer the questions below or provide other input as desired.

Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum? Please explain.

No, it appears that coursework added in response to poor performance (vs. national averages) on certain FEE topics has resulted in general improvement. EE301 remains highly unpopular among cadets, and while I realize some of the content of that course is required for FEE preparation, I believe there has been discussion on establishing a version of that course that has more direct applicability to the ChemE cirriculum (much easier said than done, I'm sure).

Do you have any suggestions to improve the advisory board meeting for next year?

While I'm sure the idea of another survey would not be popular with the cadets, it may be beneficial to have the board members draft a few questions to present to them in case future in-person board meetings are postponed or cancelled.

Another option might be to ask the cadets for volunteers to have a one on one call with a board member (even if that call occurs after graduation).

Please add any addition comments that you would like to make below.