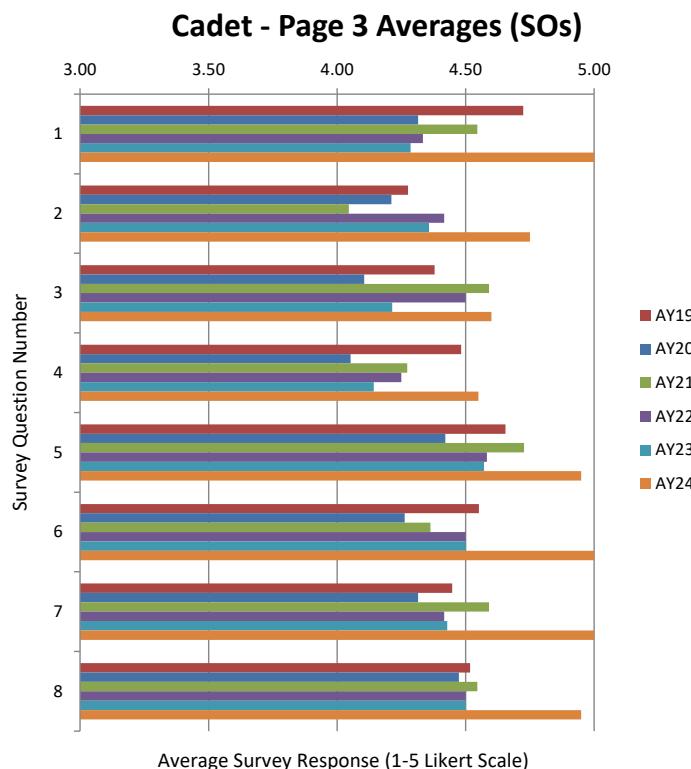


### **SURVEY QUESTIONS – PART I (PAGE 3)**

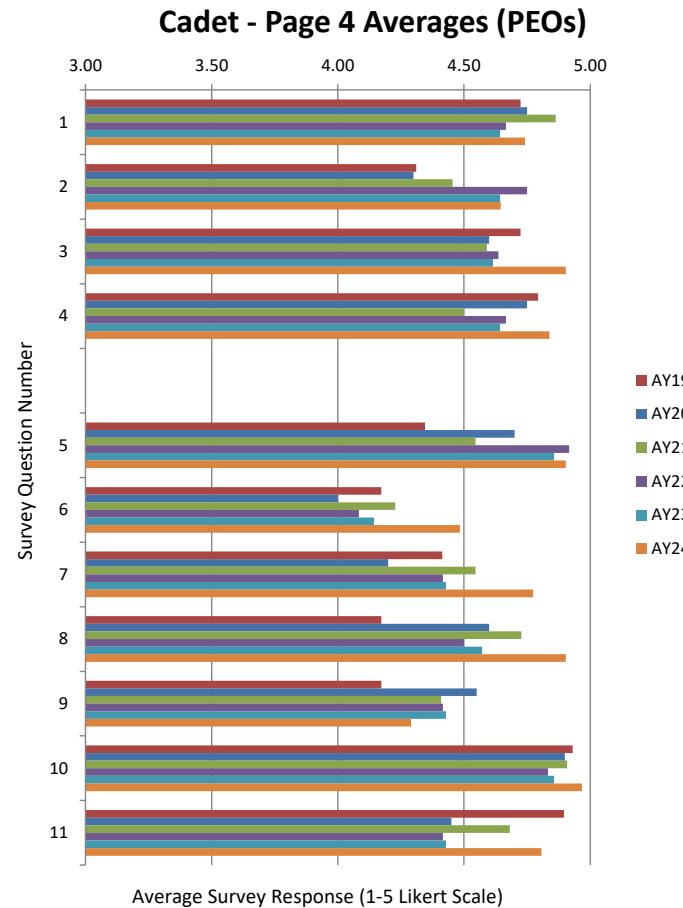
The cadets who graduated last year have demonstrated that they

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. 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.
3. Communicate effectively with a range of audiences.
4. 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.
5. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.
7. Acquire and apply new knowledge as needed, using appropriate learning strategies.
8. Understand the chemical engineering curriculum.



## **SURVEY QUESTIONS – PART II (PAGE 4)**

1. The program objectives are consistent with the USMA mission.
2. The program objectives are consistent with the needs of the Army.
3. The program curriculum supports the program objectives.
4. The student outcomes are consistent with the program mission and objectives.
5. The program has a process for periodically assessing the achievement of its student outcomes.
6. The survey methods used by the program are effective.
7. The cadets in the program are aware of the program objectives.
8. The cadets are given an opportunity to provide their opinion about the program objectives.
9. The cadets are satisfied with the courses in the program.
10. In my opinion, the faculty are aware of the program objectives.
11. In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.



## **COMMENTS FROM STUDENT SURVEYS, AY25-1**

**Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?**

Yes – I think the courses & optional additional courses are all constructive. If there could be another elective track, I would've liked one about machine learning. (Astable)

No there are no more courses that need to be added. (Cagle)

Classes connect to each other. MC300 is slightly not applicable to overall course. Design classes / opportunities is great. (Chen)

I do not know which course(s) could be added. I think some courses should be taught differently: EE301 & ME362. Maybe they can be taught by chem E faculty. (Copeland)

Yes, I believe the right classes are being taught. If anything, I'd like to see professional opportunities & advice added to CH400 or CH402 so we can start planning after the Army. (Curran)

I don't know how I feel about the three electives in the Red Book I need to take. Can they be removed from grad requirements? (Derivaux)

Would be interesting to provide elective courses that focus on FE topics or prep that can be taken as a cow or Firstie in addition to CH400. (Dolin)

I think we are taking the right courses. (Field)

For the most part, yes. (Garby)

Yes, the right classes are taught. The basic / foundation classes of each engineering domain. (Guevara-Cragwell)

Yes, but I would appreciate additional material on practical applications of the things we learn. For example, if we calculate the volume of a CSTR, how would be go about verifying / testing that and implementing it into a real-world process? (Hall)

No, we already take a lot of courses. (Jachim)

Classes are good. Hit correct topics. (Jenkins)

Classes are sufficient. Improve fluid mechanics course structure. (Kwi)

Not that I can think of. (Lareau)

Machine Learning. (Longstaff)

I believe we are teaching the right classes. The chemical engineering curriculum is holistic, providing a wide engineering base we will build upon and use in the future. (Nash)

No courses should be added. (Nikcevic)

While we currently conduct mini-courses within SACHE for safety certifications, I believe a course on process safety would be beneficial to cadets after graduation. (O'Hara)

Yes but maybe more application courses such as CH459. We were able to recall old classes & it made us relearn courses to apply coursework to real processes. (Porcaro)

Rather than 10 online SACHE if safety is key to exam using the 10 CH459 lab periods for instruction. (Presot)

The classes in chem E are taught well, but in my opinion, I don't think the 3-elective track is that important. I wish we took more classes for chemical engineering that they do in other schools such as organic chem 2, p-chem, material courses. (Ramirez)

Teach fluid dynamics in the CLS department. It was an important course that was taught very badly in CME. Teaching it in the department would also allow us to make it more specific for chemical engineering. (Ray)

Not that I have seen. (Sanders)

I would personally enjoy having a materials science course added, but I understand there is not much room in our schedule. (Squier)

I think there needs to be a greater understanding of basic chemistry. Including physical chemistry. Courses like physical chemistry are taken by other competitive programs. (Stewart)

Yes, the classes within the major are very relevant and useful. Some criteria in here relies on what electives people take. (Verkleeren)

If possible, a chem E version of fluid mechanics would be highly beneficial to support future chem E's. (Wald)

In house, the courses are well taught and interconnected. I found connections with the CME department difficult for immediate relevance early on. I understand now as a Firstie but was a confused yuk / cow. (Wallace)

I believe the core classes are great classes. The supplementary classes like CH383 and EE301 are both instructor dependent. (Wilson)

There should be an engineering version of MC300 since the class is pretty basic and slow. (Xiao)

**Are we asking the right questions? Do you have any suggestions to improve the survey for next year?**

No. (Cagle)

No additional feedback. (Chen)

In response to the previous question, I believe it would be beneficial to ask about which class should be dropped or changed. Maybe add a list of courses that could be added in place of some other courses. (Copeland)

Yes, no suggestions. (Curran)

A question about the process or way we are taught. Would be nice to pick a coding language and stick with it. I know I have learned at least 6-8 while at the academy. (Dolin)

You are asking the right questions. (Field)

Yes. No suggestions. (Garby)

Ask if the classes are graded fairly. (Guevara-Cragwell)

Yes, the questions are good. (Jachim)

Yes, questions are good. (Jenkins)

Yes. Good survey. (Kwi)

Yes you are asking the right questions. Maybe a question about our ability to use our background to succeed in other fields. (Lareau)

I think so. (Longstaff)

I don't have any suggestions. You are asking the right questions. (Nash)

I think the questions are good. (Nikcevic)

Maintain the open questions page, great way for us to provide candid responses. (O'Hara)

Yes, all questions were sufficient. The survey should not be improved. (Ramirez)

The questions are good. (Ray)

Yes. (Sanders)

Not at this time. (Stewart)

Yes, the questions seem to cover all the bases. (Verkleeren)

Yes, you are asking the right questions. (Wald)

I believe these questions are the right questions being asked. (Wilson)

The questions are good overall but could be better with being more specific. (Xiao)

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

EE301 should be conducted better. Fluid dynamics should be, too. (Cargle)

Examine credit hour load whether work and time done reflects allotment. I know chem E 3.0 credit hours is different experience than another departments 3.0 credit hour course. (Chen)

It seemed like the classes assigned to our schedule which were intended to broaden our knowledge of engineering (EE301 & ME362) apply somewhat significantly to our major but weren't taught as well or incorporated into our line of work as well as we (chem E) would have wanted. (Copeland)

Access to PPI all of Firstie year instead of just during the last semester while in CH400. An elective course using Mathematica or other related software modeling would be interesting. (Dolin)

I'm curious if there is data among the engineering classes discussed for other service academies? Do we compare USMA & USNA data for required classes? I know chem E isn't offered at USNA but do we have data comparing the mech E & EE classes? What about passing the FEE among different service academies? (Derivaux)

ME387 is an incredibly poorly structured class rooted in derivations, but the speed at which we move and the time allotted does not allow to properly learn the necessary material. The course needs to be looked at and fixed as soon as possible. (Garby)

Some courses. EE301, go to in depth w/ point scale versus allowing us to better understand the course w/ adequate time. A 10 pt problem taking 2 hours is absurd. (Guevara-Cragwell)

More oral presentations should be added to the various capstones. It is something we have touched maybe one time in Mass & Energy Balances. (Jenkins)

The mission statement mentions "leaders of character" but the objectives and questions don't mention character. Ethics doesn't count. (Longstaff)

The program has been great. (Nash)

Incredible faculty, everyone is very knowledgeable and understanding of the courses and their materials. (O'Hara)

Fantastic program that is challenging & encourages hard work & thinking outside the box. (Porcaro)

Not at this time. (Stewart)

Not much to add. The additional classes West Point requires us to take I believe reinforces our holistic engineering expertise. (Verkleeren)

More lab exposure outside of CH459. It was helpful then but more engagement in the sub basement prior would be more beneficial. (Wallace)

Great faculty. Some of the best instructors a cadet could ask for. (Wilson)

I really enjoyed CH459 and the lab. (Xiao)

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- Acquire and apply new knowledge as needed, using appropriate learning strategies.
- Understand the chemical engineering curriculum, including:
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  - 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.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<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 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

YR - I think the courses & optional additional classes are all constructive.  
If there could be another elective track,  
I would've liked one about machine learning

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

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

Name: Ayanna Cagle

Date: 27 JAN 2025

## 2024 Cadet Program Briefing Surveys (Completed by Firsties in AY25-2)

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

**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree	
<ul style="list-style-type: none"> <li>Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>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.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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<ul style="list-style-type: none"> <li>Acquire and apply new knowledge as needed, using appropriate learning strategies.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Understand the chemical engineering curriculum.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Name: Anyanna Cagle

Date: 27 JAN 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Name: Aymen Largu

Date: 27/3/2025

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

NO there there are no more courses  
that need to be added.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

NO

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

EE301 should be conducted better.  
Fluid dynamics should be, too.

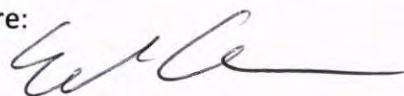
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<ul style="list-style-type: none"> <li>Communicate effectively with a range of audiences.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<ul style="list-style-type: none"> <li>Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Acquire and apply new knowledge as needed, using appropriate learning strategies.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Understand the chemical engineering curriculum.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Edelwe Chen

Date: 27JAN25

**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 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"/>	<input type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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"/>	<input type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Edelwe Chen

Date: 27 JAN 25

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Classes connect to each other

MC300 is slightly not applicable to overall course.

Design classes / opportunities is great.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

No additional feedback.

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

Examine credit hour load whether work/two  
done reflects allotment.

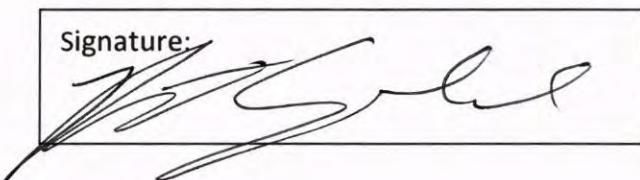
I know Chen E 3.0 credit hour is different  
experience than another departments 3.0 credit hour  
course.

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Name: Bret Copeland

Date: 27 JAN 25

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Name: Bret CopelandDate: 27 JAN 25**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

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• Acquire and apply new knowledge as needed, using appropriate learning strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 checked="" type="checkbox"/>	<input type="checkbox"/>
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The student outcomes are consistent with the program mission and objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
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In my opinion, 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"/>

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

I do not know which course(s) could be added. I think some courses should be taught differently: EE301 + ME362. Maybe they can be taught by ChemE faculty...

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

In response to the previous question, I believe it would be beneficial to ask about which class should be dropped or changed. Maybe add a list of courses that will be added in place of some other course.

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

It seemed like the classes assigned to our schedule which were intended to broaden our knowledge of engineering (EE301 + ME362) apply somewhat significantly to our major but weren't taught as well or incorporated into our line of work as well as ~~the~~ we (ChemE's) would have wanted.

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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree	
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• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**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 checked="" type="checkbox"/>	<input type="checkbox"/>
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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 checked="" type="checkbox"/>	<input type="checkbox"/>
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**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Yes, I believe the right classes are being taught. If anything I'd like to see professional opportunities & advice added to CH400 or CH402 so we can start planning for after the Army.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Yes, no suggestions.

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

N/A.

Name: Chris Derivaux

Date: 1/27/25

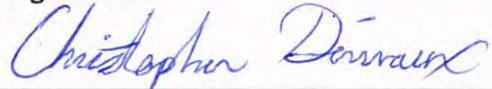
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**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

- ↳ I don't know how I feel about the 3 electives in the Bed book I need to take. Can they be removed from grad requirements?
- ↳ I would propose 2 changes to classes. 1. An abridged version of CH353 & 2. Combine CH459 into the labs for the other ChemE classes

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

N/A

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

I'm curious if there's data among the engineering classes discussed for other Service Academies? Do we compare USMA & USNA data for required classes? I know ChemE isn't offered at USNA but do we have data comparing the MechE & EE classes? What about passing the FEE among different Service academies?

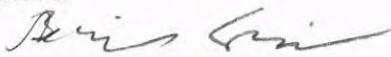
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  - Chemical reaction engineering.
  - Continuous and staged separation operations.
  - Process dynamics and control.
  - Modern experimental and computing techniques.
  - Process design.

**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Blair Dolan

Date: 01/27/2025

**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.	<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 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, 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"/>

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Would be interesting to provide elective courses that focus on FE topics or prep that can be taken as a low or first-year addition to CH400.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

A question about the process or why we are taught would be nice to pick a coding language and stick with it. I know I have learned at least 6-8 while at UOZ coding.

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

Access to PPI all of first year instead of just during the last semester while in CH400. An elective course on using Mathematica or other related software modeling would be interesting.

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**Instructions**

- ✓ Write or enter your name and date on the top of each page.
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- ✓ Review the chemical engineering program objectives on page two, and complete page 4 of the survey. For this part of the survey, we are interested in your opinions on the relevance of the objectives and their consistency with the Academy mission and needs of the Army. Again, for each row, mark the survey form with an "x" in the box that most closely represents your opinion and enter one response per row.
- ✓ There are some free-form questions on page 5 for you to comment on the quality of the curriculum, the meeting itself or any other items you would like us to address.
- ✓ We will consolidate the data, include it in our program assessment, and review it in a separate meeting.
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- Demonstrate effective leadership by leveraging chemical engineering expertise and precise technical communication.
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- Apply disciplined technical expertise to succeed in advanced study programs.

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  - Process dynamics and control.
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  - Process design.

**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree	
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• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, 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: Corey Field

Date: 27 JAN 2025

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

I think we are taking the right courses.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

You are asking the right questions.

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

N/A

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- Sign in the box below:

Signature:



Name: Andrew Garby

Date: 1/27/25

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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: Andrew Garby

Date: 1/27/25

**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree		
The cadets who graduated last year have demonstrated that they					
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<input type="checkbox"/>
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• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Acquire and apply new knowledge as needed, using appropriate learning strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Andrew Garay

Date: 1/27/25

**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.	<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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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"/>	<input type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

January 27, 2025

Name: Andrew Grarby

Date: 1/27/25

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

For the most part, yes.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Yes. No suggestions.

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

ME380T is an incredibly poorly structured class too rooted in derivations, but the speed at which we move and the time allotted does not allow to properly learn the necessary material. The course needs to be looked at and fixed as soon as possible.

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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree	
<ul style="list-style-type: none"> <li>Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>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.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Communicate effectively with a range of audiences.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>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.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<ul style="list-style-type: none"> <li>Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Acquire and apply new knowledge as needed, using appropriate learning strategies.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Understand the chemical engineering curriculum.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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"/>
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The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
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In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, 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: Javan Guevara Cragwell

Date: 27 JAN 25

### Part III. Open Questions.

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Yes, the right classes are taught. The basic/foundation classes of each engineering domain.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Ask if the courses are graded fairly.

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

Some courses, E333, go too in depth w/ point scale versus allowing us to better understand the course w/ adequate time. A 10 pt problem taking over 2 hrs is absurd.

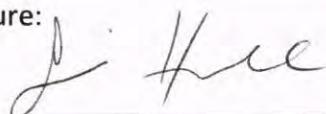
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- Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.
- Acquire and apply new knowledge as needed, using appropriate learning strategies.
- Understand the chemical engineering curriculum, 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.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree	
<ul style="list-style-type: none"> <li>Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>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.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Communicate effectively with a range of audiences.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>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.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Acquire and apply new knowledge as needed, using appropriate learning strategies.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Understand the chemical engineering curriculum.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<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"/>	<input 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 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"/>	<input type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<input type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, 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"/>	<input type="checkbox"/>

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Yes, but I would appreciate additional material on practical applications of the things we learn. for example: if we calculate the volume of a CSTR, how would we go about verifying/testing that and implementing it into a real-world process?

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

 N/A

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

N/A

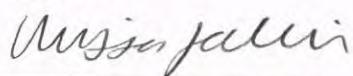
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**Instructions**

- Write or enter your name and date on the top of each page.
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- Review the chemical engineering program objectives on page two, and complete page 4 of the survey. For this part of the survey, we are interested in your opinions on the relevance of the objectives and their consistency with the Academy mission and needs of the Army. Again, for each row, mark the survey form with an “x” in the box that most closely represents your opinion and enter one response per row.
- There are some free-form questions on page 5 for you to comment on the quality of the curriculum, the meeting itself or any other items you would like us to address.
- We will consolidate the data, include it in our program assessment, and review it in a separate meeting.
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  - Process dynamics and control.
  - Modern experimental and computing techniques.
  - Process design.

**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	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 type="checkbox"/>	<input checked="" type="checkbox"/>
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• Acquire and apply new knowledge as needed, using appropriate learning strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 checked="" type="checkbox"/>	<input type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, 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: Melissa Jarium

Date: 1/27/25

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

*No, we already take a lot of classes.*

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

*yes, the questions are good*

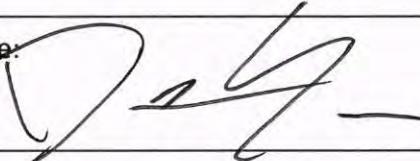
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- Review the chemical engineering program objectives on page two, and complete page 4 of the survey. For this part of the survey, we are interested in your opinions on the relevance of the objectives and their consistency with the Academy mission and needs of the Army. Again, for each row, mark the survey form with an "x" in the box that most closely represents your opinion and enter one response per row.
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Signature:	
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  - Chemical reaction engineering.
  - Continuous and staged separation operations.
  - Process dynamics and control.
  - Modern experimental and computing techniques.
  - Process design.

**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree	
The cadets who graduated last year have demonstrated that they				
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
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• Acquire and apply new knowledge as needed, using appropriate learning strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Jenkins

Date: 27 JAN 2024

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Classes are good. Hit correct topics

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Yes, questions are good.

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

More oral presentations should be added to the various capstones.  
It is something we have touched maybe one time in Mass + Energy  
Balances

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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

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• Acquire and apply new knowledge as needed, using appropriate learning strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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"/>	
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In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Caleb Kwi

Date: \_\_\_\_\_

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Classes are sufficient. Improve Fluid mechanics course structure;

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Yes. Good Survey.

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

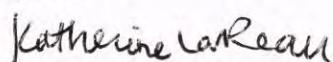
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Signature:



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- 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 Student Outcomes:** On completion of the chemical engineering program, our graduates will be able 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.
- Understand the chemical engineering curriculum, 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.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	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 type="checkbox"/>	<input checked="" 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"/>
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• 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"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, 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: Katherine Lareau

Date: \_\_\_\_\_

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

not that I can think of ☺

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

yes you are asking the right questions

↳ maybe a question about our ability  
to use our background to succeed in  
other fields

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

N/A

Name: Garret Longstaff

Date: 27 JAN 25

### 2024 Cadet Program Briefing Surveys (Completed by Firsties in AY25-2)

This is your annual cadet survey for the AY2024 program assessment, and it is important for continued ABET accreditation. The survey is designed to do three things. First, it serves to document your feedback on the program educational objectives. Second, it provides documentation that you have been made aware of the performance of our previous cadets on our student outcomes. Third, it allows us to use your collective opinions to improve our program.

#### Instructions

- Write or enter your name and date on the top of each page.
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- Review the data pertaining to the achievement student outcomes by our 2024 program graduates, and complete page 3 of the survey. Your survey responses should be based on the data presented. For each row, mark the survey form with an "x" in the box that most closely represents your opinion. Enter one response per row.
- Review the chemical engineering program objectives on page two, and complete page 4 of the survey. For this part of the survey, we are interested in your opinions on the relevance of the objectives and their consistency with the Academy mission and needs of the Army. Again, for each row, mark the survey form with an "x" in the box that most closely represents your opinion and enter one response per row.
- There are some free-form questions on page 5 for you to comment on the quality of the curriculum, the meeting itself or any other items you would like us to address.
- We will consolidate the data, include it in our program assessment, and review it in a separate meeting.
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Signature:



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  - Process design.

**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	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 type="checkbox"/>	<input checked="" 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"/>
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• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<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 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Gorret Longstaff

Date: \_\_\_\_\_

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Machine Learning

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

↓  
I think so.

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

The mission statement mentions "Leaders of character" but the objectives/questions don't mention character. Ethics doesn't count.

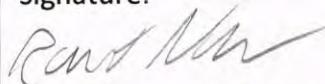
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  - Continuous and staged separation operations.
  - Process dynamics and control.
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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree	
The cadets who graduated last year have demonstrated that they				
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>
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• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**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 checked="" type="checkbox"/>	<input type="checkbox"/>
The program objectives are consistent with the needs of the Army.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>
The survey methods used by the program are effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, 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"/>

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

I believe we are teaching the right classes. The Chemical Engineering curriculum is wholistic, providing a wide engineering base we will build upon and use in the future.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

I do not have any suggestions - you are asking the right questions.

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

The program has been great!

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  - Process dynamics and control.
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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree		
<ul style="list-style-type: none"> <li>Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>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.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Communicate effectively with a range of audiences.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>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.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Acquire and apply new knowledge as needed, using appropriate learning strategies.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Understand the chemical engineering curriculum.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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"/>	
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The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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"/>	<input type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Nikola Nikčević

Date: 27JAN25

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

No courses should be added

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

I think the questions cover everything

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

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Signature:



**Chemical Engineering Program Objectives:** 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 Student Outcomes:** On completion of the chemical engineering program, our graduates will be able 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.
- Understand the chemical engineering curriculum, including:
  - Chemistry,
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  - 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.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	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 type="checkbox"/>	<input checked="" 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"/>
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• 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 checked="" type="checkbox"/>	<input type="checkbox"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

**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 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"/>	<input type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<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 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 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"/>	<input type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

While we currently conduct mini-courses with SACHE for safety certifications, I believe a course on Process Safety would be beneficial to cadets after graduation.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

- Maintain the open questions page, great way for us to provide candid responses

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

Incredible Faculty, everyone is very knowledgeable and understanding of the courses and their materials.

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- Review the chemical engineering program objectives on page two, and complete page 4 of the survey. For this part of the survey, we are interested in your opinions on the relevance of the objectives and their consistency with the Academy mission and needs of the Army. Again, for each row, mark the survey form with an "x" in the box that most closely represents your opinion and enter one response per row.
- There are some free-form questions on page 5 for you to comment on the quality of the curriculum, the meeting itself or any other items you would like us to address.
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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	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"/>
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• Acquire and apply new knowledge as needed, using appropriate learning strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**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 checked="" type="checkbox"/>	<input type="checkbox"/>
The program objectives are consistent with the needs of the Army.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The student outcomes are consistent with the program mission and objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

~~Yes~~ but maybe more application courses such as CH459. We were able to recall old classes & it made us relearn courses to apply the coursework to real processes.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Nope.

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

Fantastic program that is challenging & encourages hardwork & ~~prethought~~:thinking outside the box.

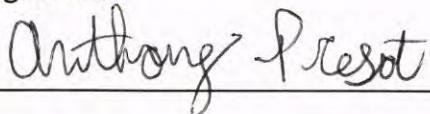
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Signature:

A handwritten signature in black ink that reads "Anthony Prest". The signature is cursive and fluid, with "Anthony" on the top line and "Prest" on the bottom line.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree		
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• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: A.V. PrestDate: 27-Jan**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 checked="" type="checkbox"/>	<input type="checkbox"/>
The program objectives are consistent with the needs of the Army.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 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 type="checkbox"/>	<input checked="" 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"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, 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"/>

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Rather than 10 online SACHE, f safety & key  
to exam using the 10 ch45a lab periods  
for instruction

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

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**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

The classes in ChemE are taught well, but in my opinion I don't think the 3 elective track is that important. I wish we took more classes for chemical engineering that they do in other schools such as organic chem 2, P-Chem, material courses.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Yes, all questions were sufficient. The survey should not be improved.

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

N/A

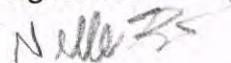
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- Sign in the box below:

Signature:



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

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**Chemical Engineering Student Outcomes:** On completion of the chemical engineering program, our graduates will be able 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.
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  - Chemical reaction engineering.
  - Continuous and staged separation operations.
  - Process dynamics and control.
  - Modern experimental and computing techniques.
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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree		
<ul style="list-style-type: none"> <li>Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>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.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Communicate effectively with a range of audiences.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<ul style="list-style-type: none"> <li>Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<ul style="list-style-type: none"> <li>Acquire and apply new knowledge as needed, using appropriate learning strategies.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Understand the chemical engineering curriculum.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<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 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Nelle Ray

Date: 1-27-25

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Teach fluid dynamics in the CLS department. It was an important course that was taught very badly in CME. Teaching it in the department would also allow CLS to make it more specific for chemical engineering.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year? The questions are good.

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

N/A

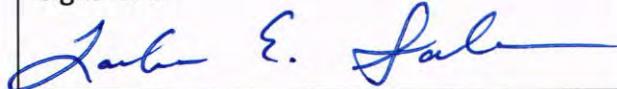
**2024 Cadet Program Briefing Surveys (Completed by Firsties in AY25-2)**

This is your annual cadet survey for the **AY2024** program assessment, and it is important for continued ABET accreditation. The survey is designed to do three things. First, it serves to document your feedback on the program educational objectives. Second, it provides documentation that you have been made aware of the performance of our previous cadets on our student outcomes. Third, it allows us to use your collective opinions to improve our program.

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Signature:

A handwritten signature in blue ink that reads "Landon E. Sanders".

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  - Process design.

**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<input type="checkbox"/>
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• 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"/>	<input type="checkbox"/>
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• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.	<input type="checkbox"/>	<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 type="checkbox"/>	<input checked="" type="checkbox"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<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 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Landon E Sanders

Date: \_\_\_\_\_

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Not that I have seen.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Yes.

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

N/A

Name: Woodson Squit

Date: 1/27/25

## 2024 Cadet Program Briefing Surveys (Completed by Firsties in AY25-2)

This is your annual cadet survey for the **AY2024** program assessment, and it is important for continued ABET accreditation. The survey is designed to do three things. First, it serves to document your feedback on the program educational objectives. Second, it provides documentation that you have been made aware of the performance of our previous cadets on our student outcomes. Third, it allows us to use your collective opinions to improve our program.

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- We will consolidate the data, include it in our program assessment, and review it in a separate meeting.
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- Sign in the box below:

Signature:

A handwritten signature in black ink, appearing to read "Woodson Squit", is written over a rectangular box. The box has a thin black border and is positioned below the "Signature:" label.

Name: Woody Synder

Date: 1-27-23

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

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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree	
<ul style="list-style-type: none"><li>Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"><li>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.</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<ul style="list-style-type: none"><li>Understand the chemical engineering curriculum.</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Wendy SauerDate: 1/27/25**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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
The program objectives are consistent with the needs of the Army.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 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"/>	<input type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Name: Wally Syar

Date: 1/17/23

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

I would personally enjoy having a materials science course added, but I understand there is not much room in our schedule.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

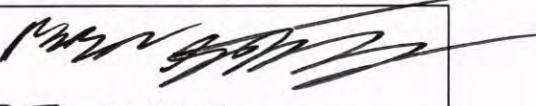
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27 Jan 2025

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• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

	Strongly Disagree	Neutral	Strongly Agree	
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The program curriculum supports the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The student outcomes are consistent with the program mission and objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
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In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Part III. Open Questions.

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

I think there needs to be a greater understanding of the basic Chemistry. Including physical chemistry. Courses like Physical Chemistry are taken by other competitive programs.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Not at this time

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

Not at this time

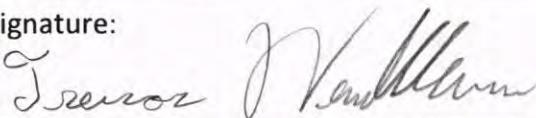
**2024 Cadet Program Briefing Surveys (Completed by Firsties in AY25-2)**

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- Write or enter your name and date on the top of each page.
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- Sign in the box below:

Signature:

A handwritten signature in black ink, appearing to read "Trevor Verkleeren".

**Chemical Engineering Program Objectives:** 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 Student Outcomes:** On completion of the chemical engineering program, our graduates will be able to:

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

**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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• 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"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<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 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

Yes, the classes within the major are very relevant and useful. Some criteria here relies on what electives people take.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Yes, these questions seem to cover all the bases.

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

Not much to add. The additional classes West Point requires us to take I believe reinforces our holistic engineering expertise.

Name: Faris Wald

Date: 1/27/25

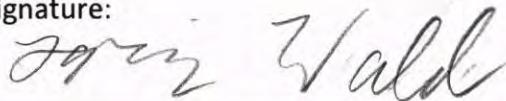
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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	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 type="checkbox"/>	<input checked="" type="checkbox"/>
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• Acquire and apply new knowledge as needed, using appropriate learning strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<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 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Name: Zaini Wahl

Date: 1/27/25

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

If possible, a Chem E version of fluid mechanics would be highly beneficial to support future Chem Es

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

Yes you are asking the right questions

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

N/A

Name: Kingsley Wallace

Date: 27 JAN 25

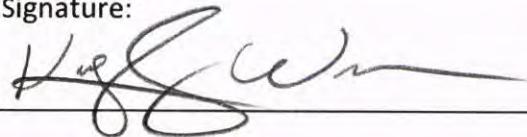
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Name: Kingsley Wallace

Date: 27 JAN 25

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  - Process dynamics and control.
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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

	Strongly Disagree	Neutral	Strongly Agree		
The cadets who graduated last year have demonstrated that they					
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	<input type="checkbox"/>	<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"/>	<input type="checkbox"/>
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• Acquire and apply new knowledge as needed, using appropriate learning strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Name: Kingsley WallaceDate: 27 JAN 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.	<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 type="checkbox"/>	<input checked="" type="checkbox"/>
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The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

In house, the courses are well taught and interconnected. I found connection with the CME Department difficult for immediate relevance early on. I understand now as a fresher but was a confused yuh / cow

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

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

More lab exposure outside of CH459  
It may helpful then but more engagement in the sub basement place would be more beneficial.

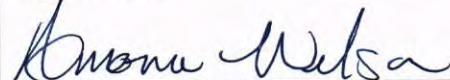
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Signature:

A handwritten signature in black ink that reads "Amonee Wilson". The signature is written in a cursive, flowing style.

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**Part I. Student Outcomes.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	Strongly Disagree	Neutral	Strongly Agree		
<ul style="list-style-type: none"> <li>Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>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.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Communicate effectively with a range of audiences.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<ul style="list-style-type: none"> <li>Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Acquire and apply new knowledge as needed, using appropriate learning strategies.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Understand the chemical engineering curriculum.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
The program curriculum supports the program objectives.	<input type="checkbox"/>	<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 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"/>	<input type="checkbox"/>
The survey methods used by the program are effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The cadets in the program are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<input type="checkbox"/>
The cadets are satisfied with the courses in the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, the faculty are given an opportunity to provide their opinion about the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

I believe the core classes are great classes. The supplementary classes like CH 303 and EE301, are both instructor dependent.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

I believe these questions are the right questions being asked

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

Great Faculty, Some of the best instructors a cadet could ask for

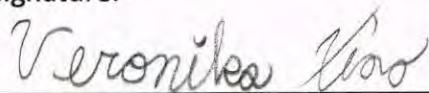
**2024 Cadet Program Briefing Surveys (Completed by Firsties in AY25-2)**

This is your annual cadet survey for the **AY2024** program assessment, and it is important for continued ABET accreditation. The survey is designed to do three things. First, it serves to document your feedback on the program educational objectives. Second, it provides documentation that you have been made aware of the performance of our previous cadets on our student outcomes. Third, it allows us to use your collective opinions to improve our program.

**Instructions**

- Write or enter your name and date on the top of each page.
- The second page of this handout contains a listing of program objectives and student outcomes. Please read this page carefully.
- Review the data pertaining to the achievement student outcomes by our **2024** program graduates, and complete page 3 of the survey. Your survey responses should be based on the data presented. For each row, mark the survey form with an "x" in the box that most closely represents your opinion. Enter one response per row.
- Review the chemical engineering program objectives on page two, and complete page 4 of the survey. For this part of the survey, we are interested in your opinions on the relevance of the objectives and their consistency with the Academy mission and needs of the Army. Again, for each row, mark the survey form with an "x" in the box that most closely represents your opinion and enter one response per row.
- There are some free-form questions on page 5 for you to comment on the quality of the curriculum, the meeting itself or any other items you would like us to address.
- We will consolidate the data, include it in our program assessment, and review it in a separate meeting.
- The surveys are due by the end of this hour.
- Sign in the box below:

Signature:

A handwritten signature in black ink that reads "Veronika Xiao". The signature is written in a cursive style with a clear distinction between the first name and the last name.

**Chemical Engineering Program Objectives:** 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 Student Outcomes:** On completion of the chemical engineering program, our graduates will be able 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.
- Understand the chemical engineering curriculum, 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.** Check the box that most closely represents your opinion.

The cadets who graduated last year have demonstrated that they	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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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"/>
• Understand the chemical engineering curriculum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**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 checked="" type="checkbox"/>	<input type="checkbox"/>
The program objectives are consistent with the needs of the Army.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>
The survey methods used by the program are effective.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>
In my opinion, the faculty are aware of the program objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
In my opinion, 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"/>

**Part III. Open Questions.**

Are we teaching the right classes? Based on the assessment data or on your personal opinion, is there a course that the program should add to the curriculum?

There should be an engineering version of MC300 since the class is pretty basic and slow.

Are we asking the right questions? Do you have any suggestions to improve the survey for next year?

The questions are good overall but could be better with being more specific.

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

I really enjoyed CH459 and the lab.

# **Chemical Engineering Program**

## **Program Assessment Briefing**

January 27, 2025

**United States Military Academy  
Department of Chemistry and Life Science**

# PROGRAM MISSION

The mission of the chemical engineering program is to prepare commissioned leaders of character who possess the intellectual capital to leverage new and emerging technologies

Re-written and approved by the  
advisory board and faculty reps on  
12 April 2024

# PROGRAM VISION

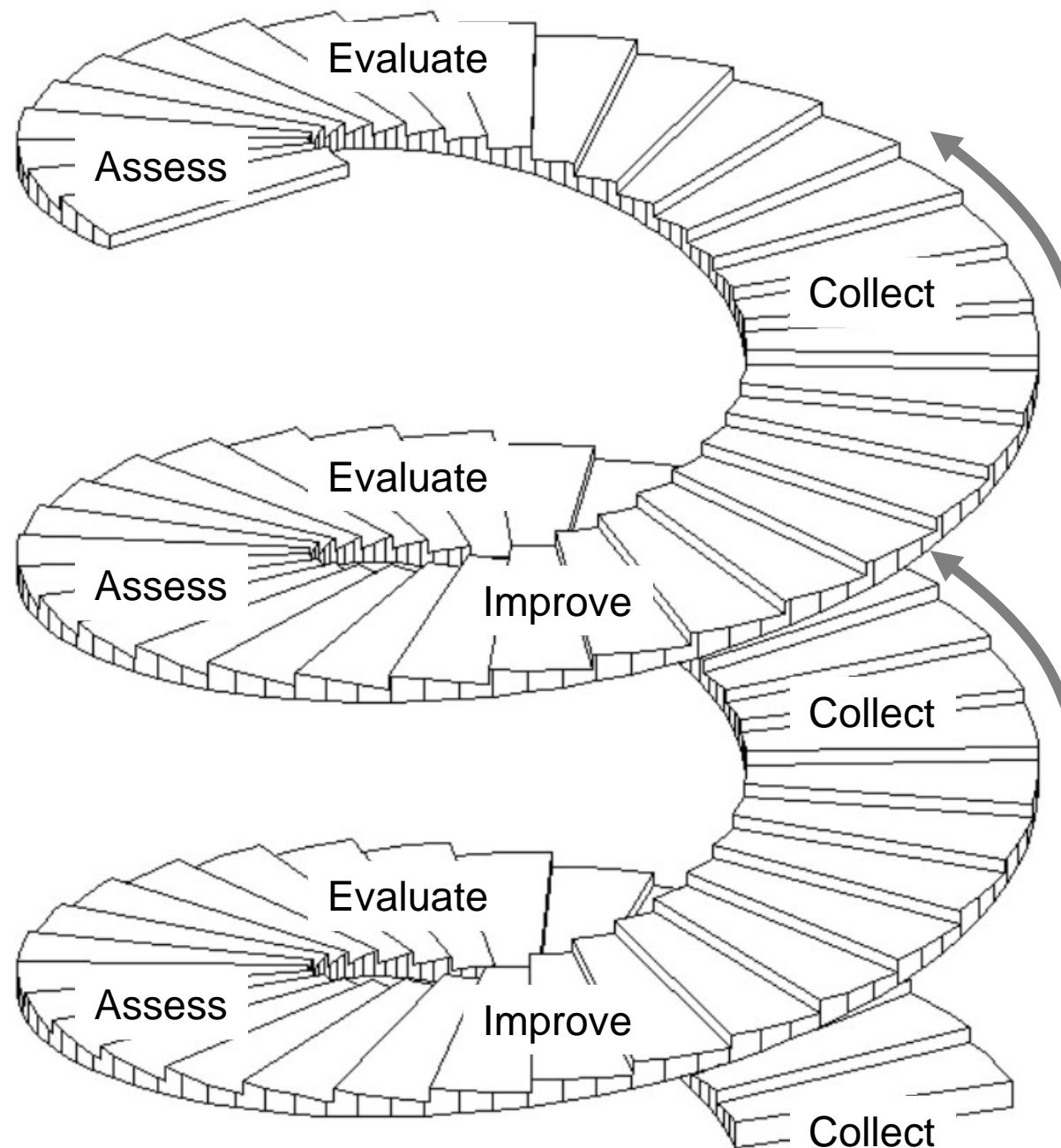
We envision an Army that is prepared for all dimensions of modern warfare, drawing upon disciplined, highly trained chemical engineers to develop solutions to the challenges facing the nation.

# AGENDA

ABET Criteria - 2-5 are monitored annually.

- 1. STUDENTS
- 5. CURRICULUM
- 4. CONTINUOUS IMPROVEMENT
- 3. STUDENT OUTCOMES
- 2. PROGRAM EDUCATIONAL OBJECTIVES
- 6. FACULTY
- 7. FACILITIES
- 8. SUPPORT
- 9. PROGRAM CRITERIA

# Assessment Cycle



# **Definitions**

## **Program Educational Objectives**

Program educational objectives are broad statements that describe what graduates are expected to attain within a few years of graduation.

## **Student Outcomes**

Student outcomes describe what students are expected to know and be able to do by the time of graduation (skills, knowledge, and behaviors).

- **Program Educational Objectives (PEOs)**
  - Gleaned by asking *program constituents*
    - For us: Army, profession, graduate schools, you
  - **Our external Advisory Board a key resource.**
  - Desired professional accomplishments of graduates **5-7 years after graduation**
  - Adjust every 3 years or so...
- **Student Outcomes**
  - What students should be able to do **at graduation**
  - Must be **measurable**
  - Designed to lead naturally to the PEOs
  - Assess/evaluate some fraction yearly.
- **Assessment → Continuous improvement**
  - Collect meaningful data to evaluate performance indicators (PIs)
  - Assess PIs for outcome attainment → information → COAs for change
  - Implement change
  - Assess its effects and level of success (“closing the loop”)
  - Repeat all the above
  - Periodically check and adjust both Student Outcomes and PEOs



# **Student Outcome 8 – Maps to Courses and FEE topics**

**On completion of the chemical engineering program, our graduates will be able to:**

Understand the chemical engineering curriculum, including:

1. Chemistry,
2. Material and energy balances,
3. Safety and environmental factors,
4. Thermodynamics of physical and chemical equilibria,
5. Heat, mass, and momentum transfer,
6. Chemical reaction engineering.
7. Continuous and staged separation processes.
8. Modern experimental and computing techniques,
9. Process dynamics and control, and
10. Process design.

# Assessment Instruments

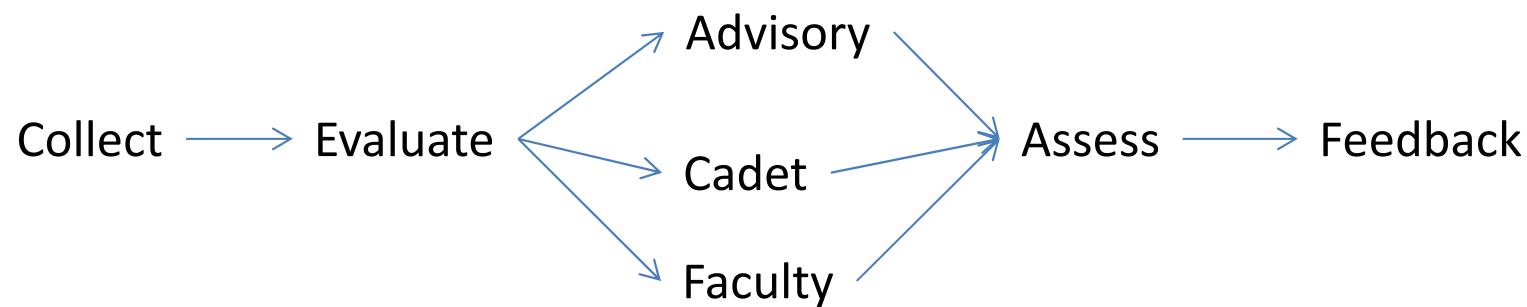
## Performance Data

Embedded Indicators  
Transcripts  
FE Exam

## Program Surveys

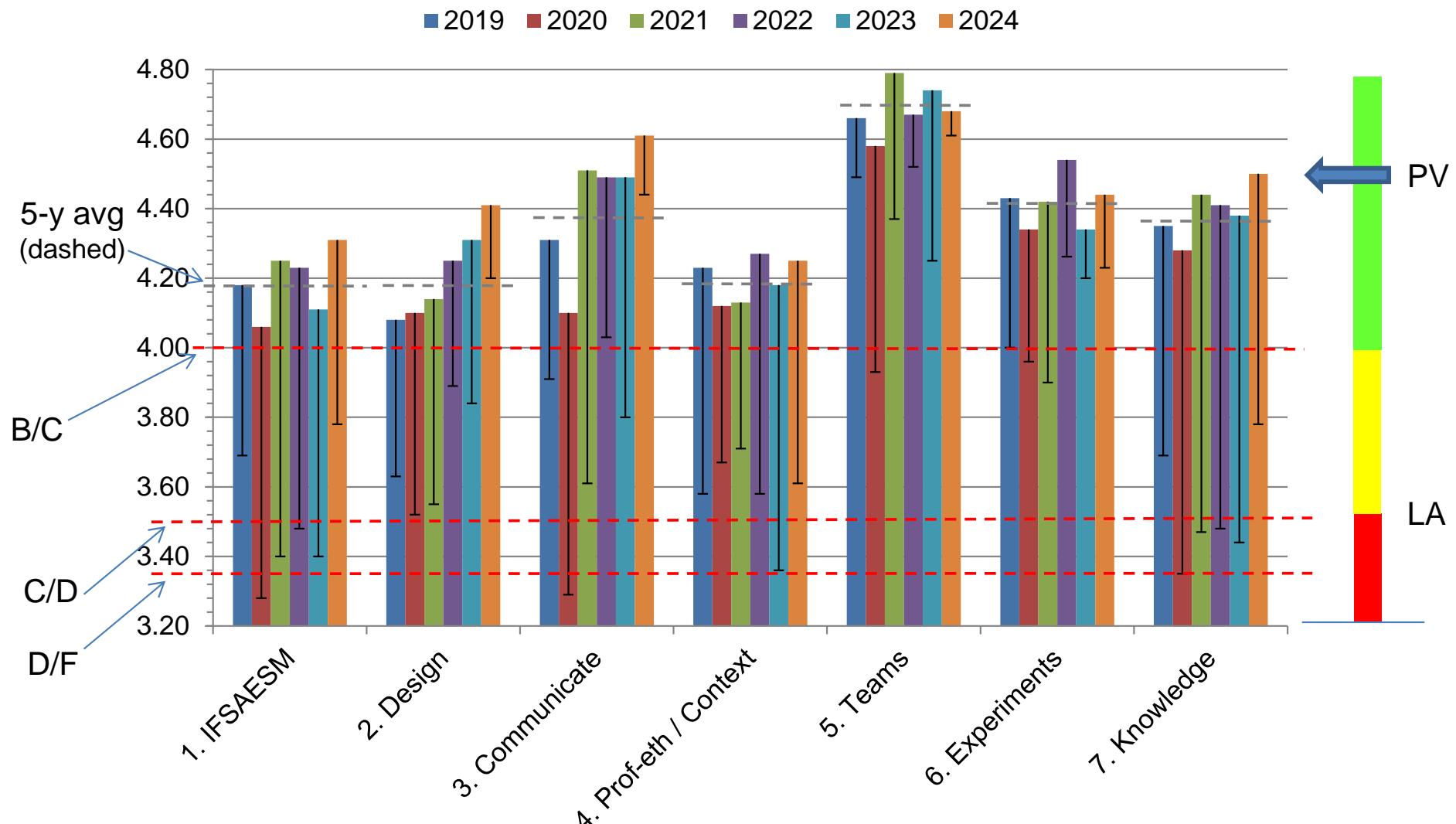
Advisory Board  
Faculty  
Cadets

## Process



# Performance on Embedded Indicators

## Program Averages AY2019 to AY2024



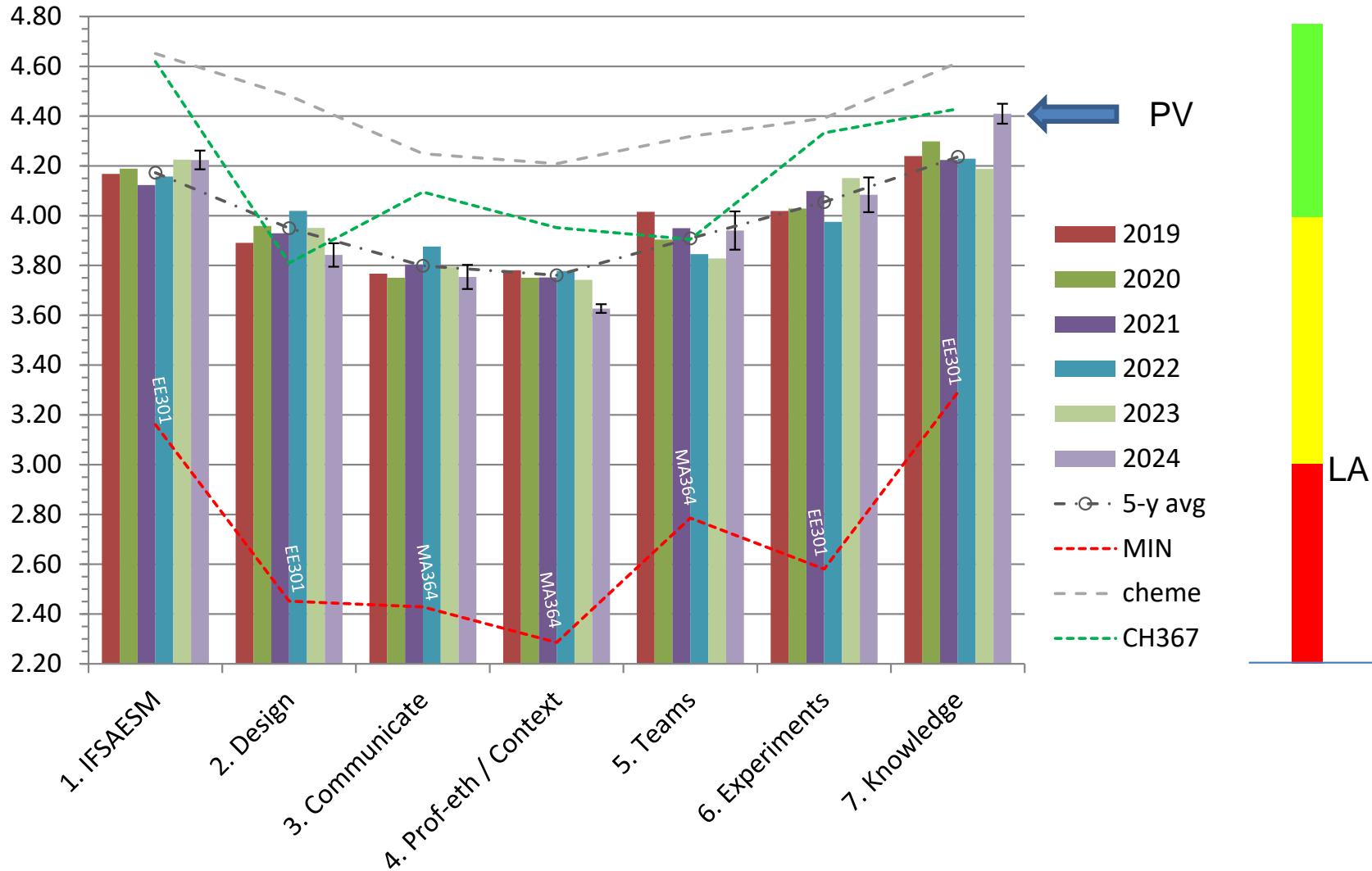
- Expected levels of attainment are the 5-year averages.
- All indicators are in the green and trending upward.
- Cadets are doing very well in all embedded indicators.
- Error bars are minimum scores from course assessments.

# End-of-Semester Surveys

## Program Averages from AY19-24

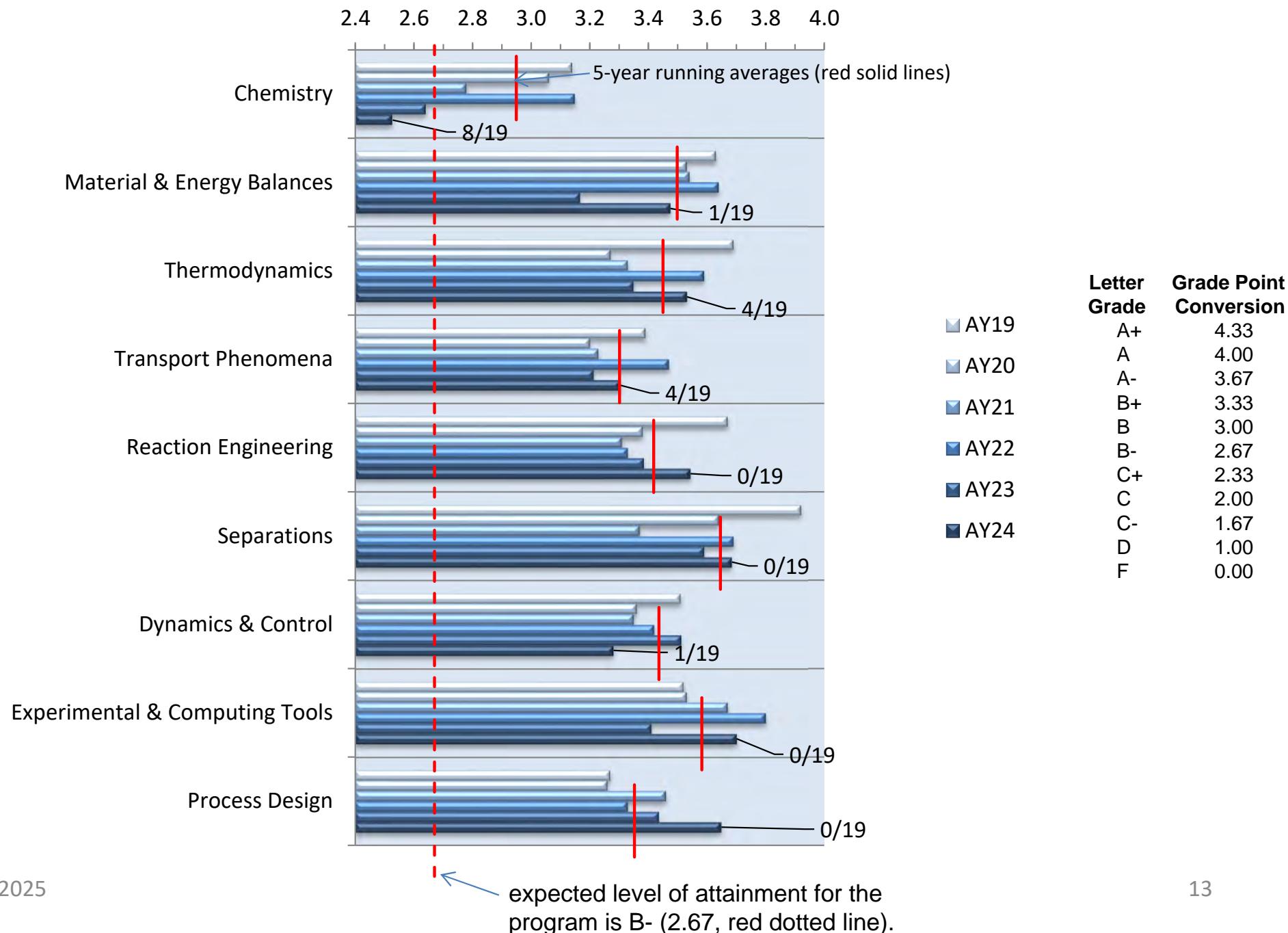
Error bars are standard deviations.

Expected level of attainment is the 5-y average



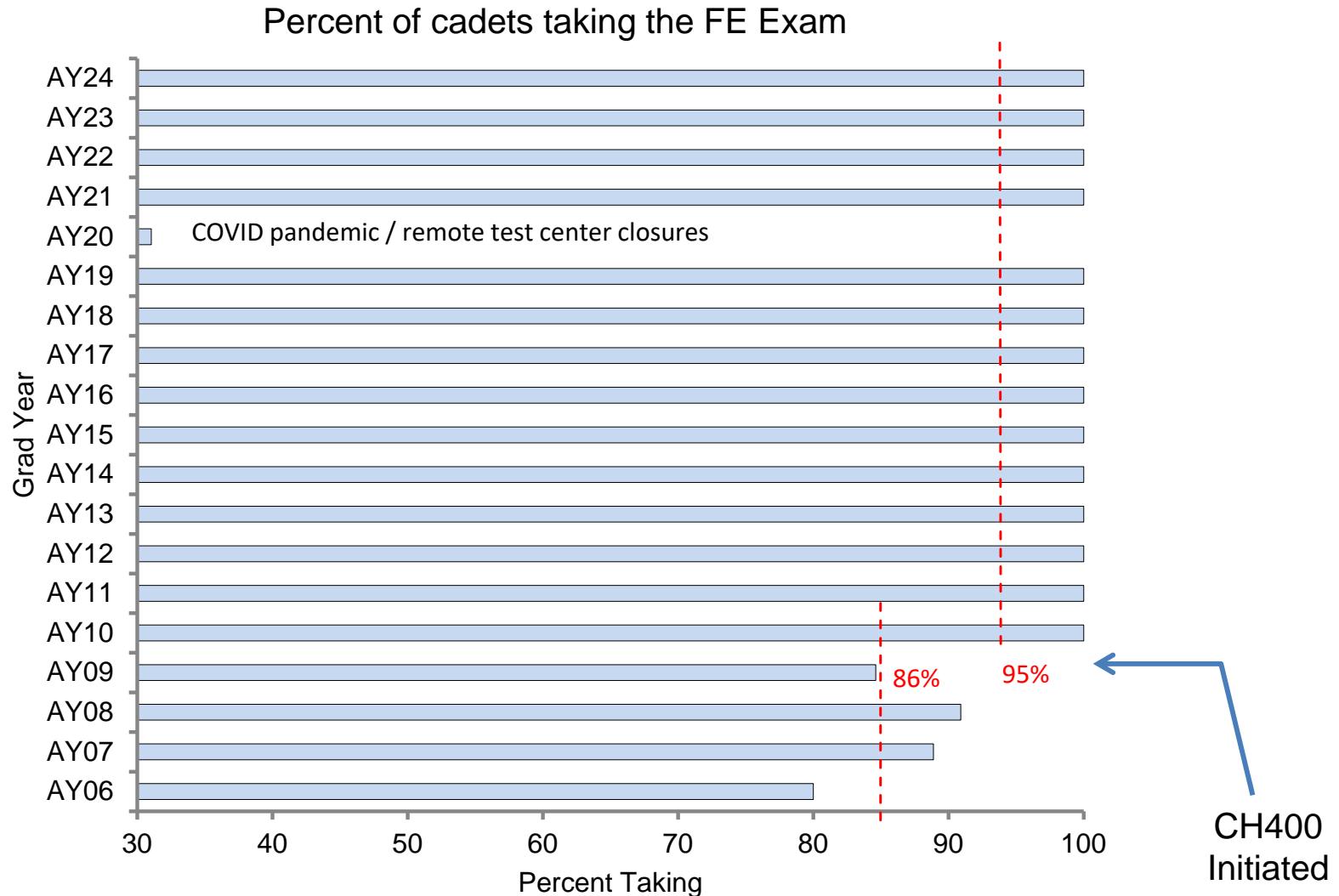
# Topical Outcomes Evaluation

Student Outcome 8: Understanding of the Chemical Engineering Curriculum  
 Average GPA from Transcripts, AY2019 to AY2024



# Fundamentals of Engineering Exam

Student Outcome 7: Acquire and apply new knowledge as needed, using appropriate learning strategies



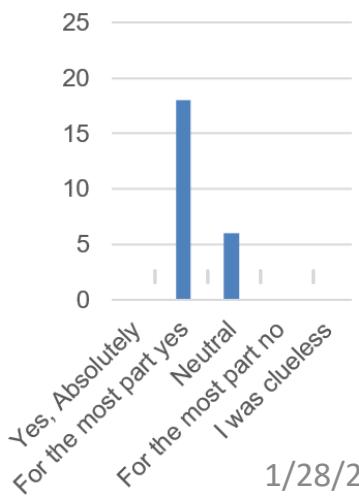
National, (+/- ~1%):

# Fundamentals of Engineering Exam

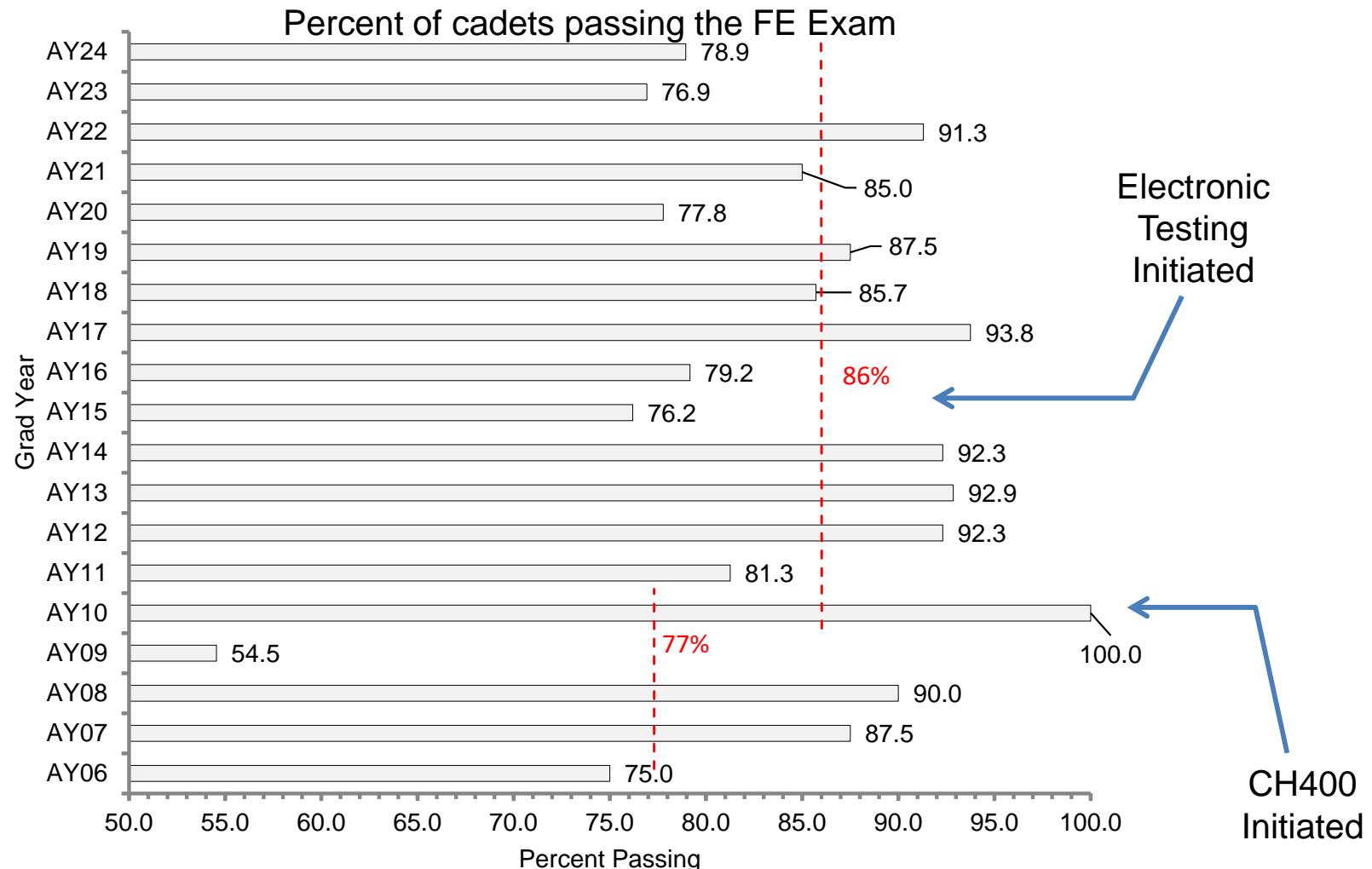
Student Outcome 7: Acquire and apply new knowledge as needed, using appropriate learning strategies

2024	73.2%
2023	70.2%
2022	70.7%
2021	74.0%
2020	74.6%
2019	77.0%
2018	75.0%
2017	74.0%
2016	79.0%
<hr/>	
2015	77.4%
2014	89.0%
2013	86.3%
2012	85.1%
2011	87.0%
2010	87.0%
2009	84.0%
2008	87.0%
2007	87.0%
2006	87.0%

Question 4



1/28/2025

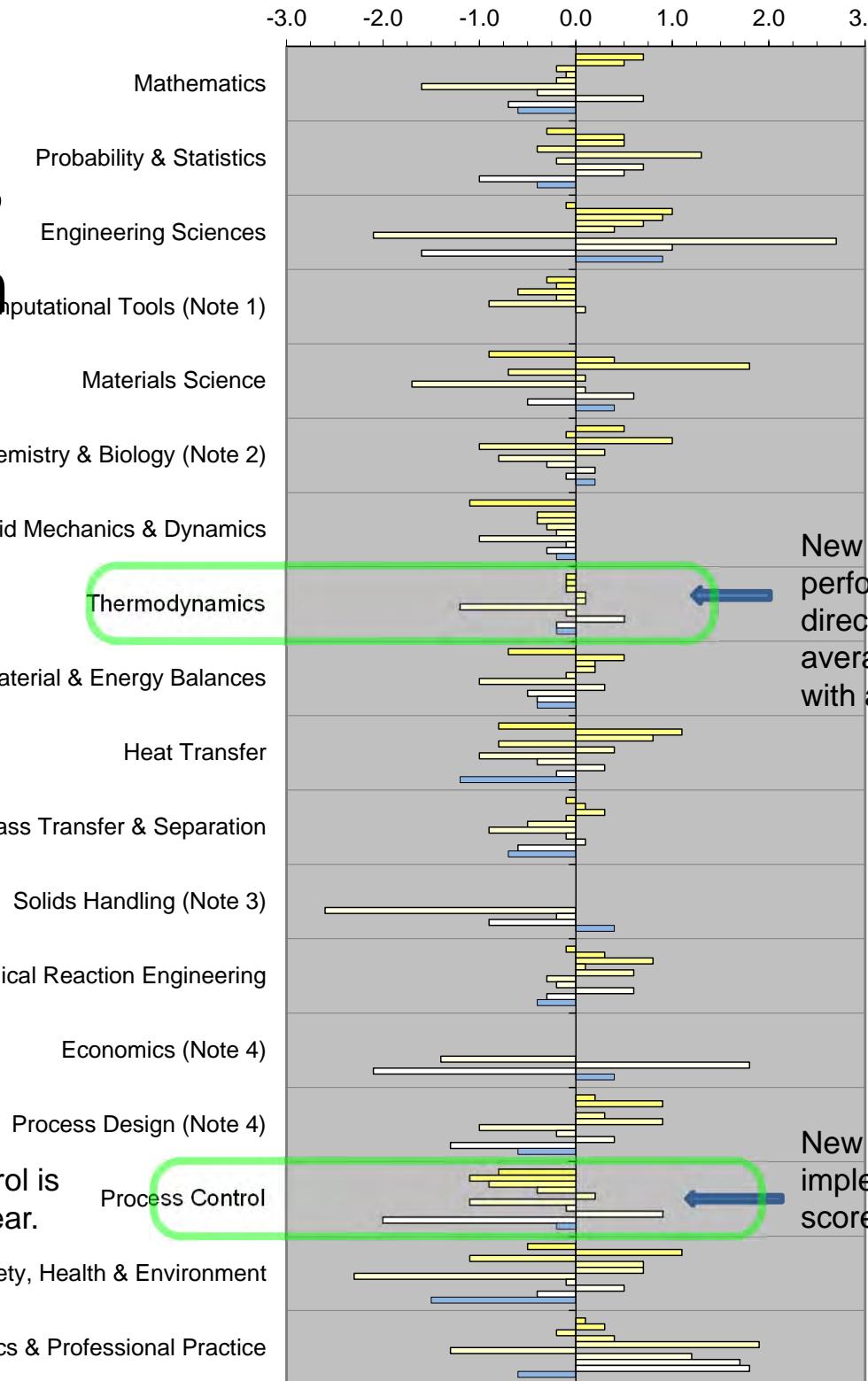


Question 4, Post FEE Survey:  
For the questions on the exam  
that seemed new to you, were  
you able to learn the material  
on the spot?

15

# Topical Outcomes Evaluation

Deviations from National Averages  
AY15 to AY24



- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024

New course added in AY13. Trend in performance continues in the right direction and has been near the national average for several successive years, with a setback in AY20 due to COVID-19

## Notes:

- (1) This topic dropped in 2021.
- (2) “& Biology” added in 2021
- (3) New exam spec in 2021
- (4) “Economics” separated from process design in 2021. Topic was Proc Design & Econ 2020 and before

Process Control is way up this year.

Process Control

New course added in AY16 and implemented in AY19-2. Before that, scores were always very low.

# **Program Objectives**

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

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

Re-written and approved by  
cadets, faculty, and advisory  
board on AY2024

Published in the USMA  
Redbook, Section 2

## Advisory Board 2024

Original Board Members attending:

No.	Name	Title	Industry - University	Email	Attending?
1	COL(R) Paul Dietrich	Chemical Officer & Refinery Manager	Chemical Officer/Industry	paul@the-dietrichs.com	Yes
2	Prof. Matthew Liberatore	Professor, Chemical Engineering	University of Toledo	matthew.liberatore@utoledo.edu	Yes
3	Prof. Kelly Schultz	Associate Professor, Chemical Engineering	Purdue University	kmschultz@purdue.edu	Yes
4	Prof. Gautham Krishnamoorthy	Professor, Chemical Engineering	University of North Dakota	gautham.krishnamoort@und.edu	Yes
5	Mrs. Kisondra Tanev	Director, Power & Renewables Investment Banking	Bank of America	kisondra@gmail.com	Yes
6	Mr. Kevin Shipe	Account Manager, Chem E (Old Grad '08), Former Automation Engineer	The Graham Company	kevin.a.shipe@gmail.com	Yes
7	Mr. Michael DeForest	Industry, Chem E (Old Grad '07), Senior Director of Operations,	Fortna	michaeldeforest@fortna.com	Yes
8	Mr. Michael Theising	Industry, Chem E (Old Grad '11), Vice President of Operations	Brenntag Group	m.theising@gmail.com	Yes
9	Prof. Susan Daniel	William C. Hooey Director and Fred H. Rhodes Professor of Chemical Engineering	Cornell University	sd386@cornell.edu, Admin Assistant: aks	Yes
10	Prof. Robert Savinell	Distinguished University Professor, Professor of Chemical Engineering	Case Western Reserve University	rfs2@case.edu	Yes
11	Dr. Lucy Hair	Specialist and Chemical Engineer	Jacobs Engineering at Lawrence Livermore National Laboratory	hair1@llnl.gov	No
12	LTC(R) Matthew Armstrong PhD	Associate Professor (Retired LTC) and Principal Engineer	Fluor Marine Propulsion, Schenectady, NY	armstm@udel.edu	NO
13	COL Aaron Hill, PhD, PE	Deputy Head, Department of Civil & Mechanical Engineering	USMA; CME	aaron.hill@westpoint.edu	NO

External panel outside visitors representing the various Represents “constituencies” of the program (civilian and military).

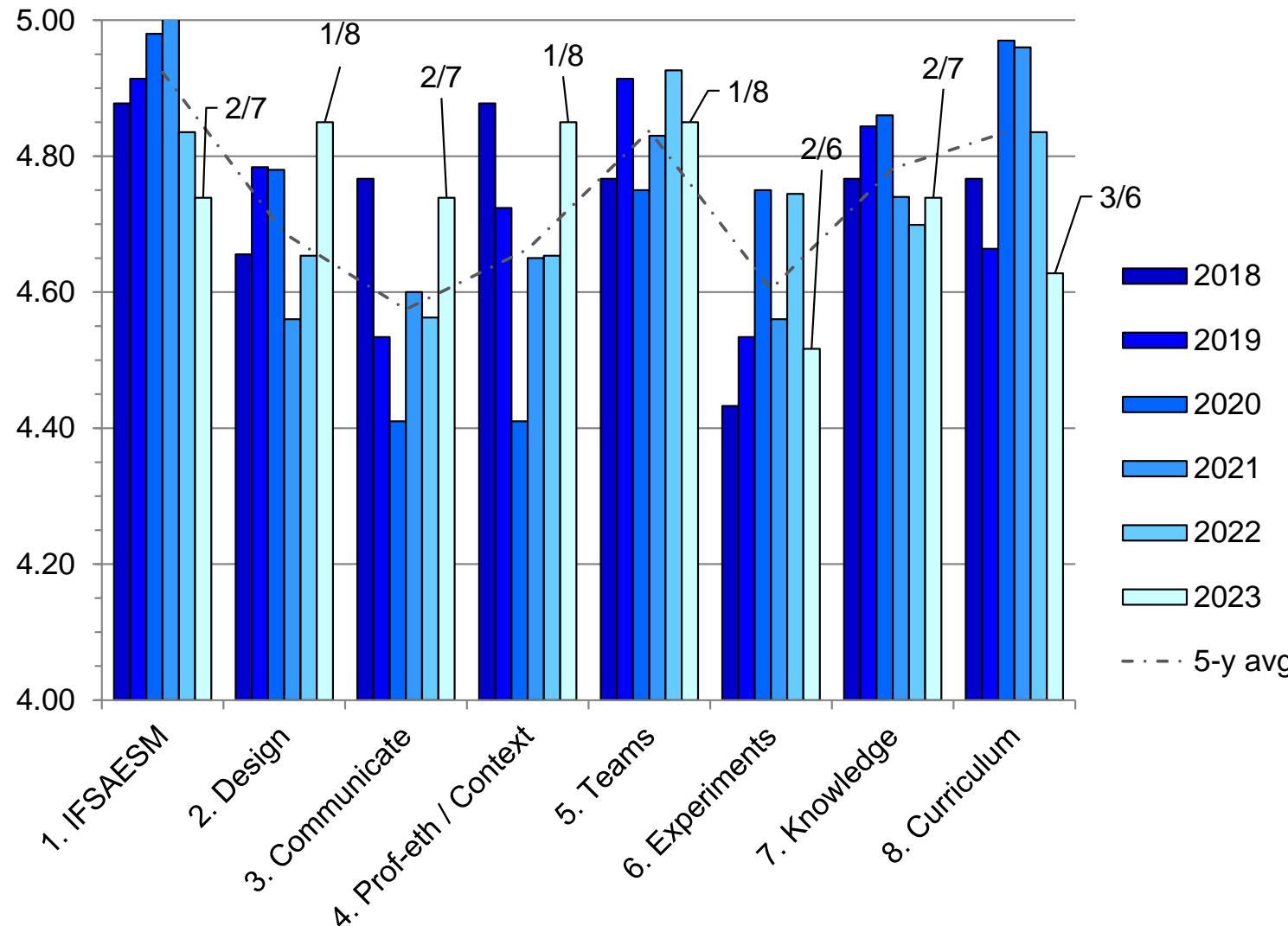
Assists with program educational objectives and assessment.

# Advisory Board Student Outcomes Surveys

## Student Outcomes 1-8

Program Averages from AY18-23

Data labels are response frequencies for 4 or 5 (# of 4s / # of 5s) on the 1-5 Survey Likert Scale  
 Standard deviations range from .00 to .52





# Engineering Technology Accreditation Commission



Please make sure you complete the surveys.

Accredited 1 October 2012 to present

Next Visit – Fall 2026

# **Chemical Engineering Program**

## **Program Assessment Briefing**

January 27, 2025

**United States Military Academy  
Department of Chemistry and Life Science**

# PROGRAM MISSION

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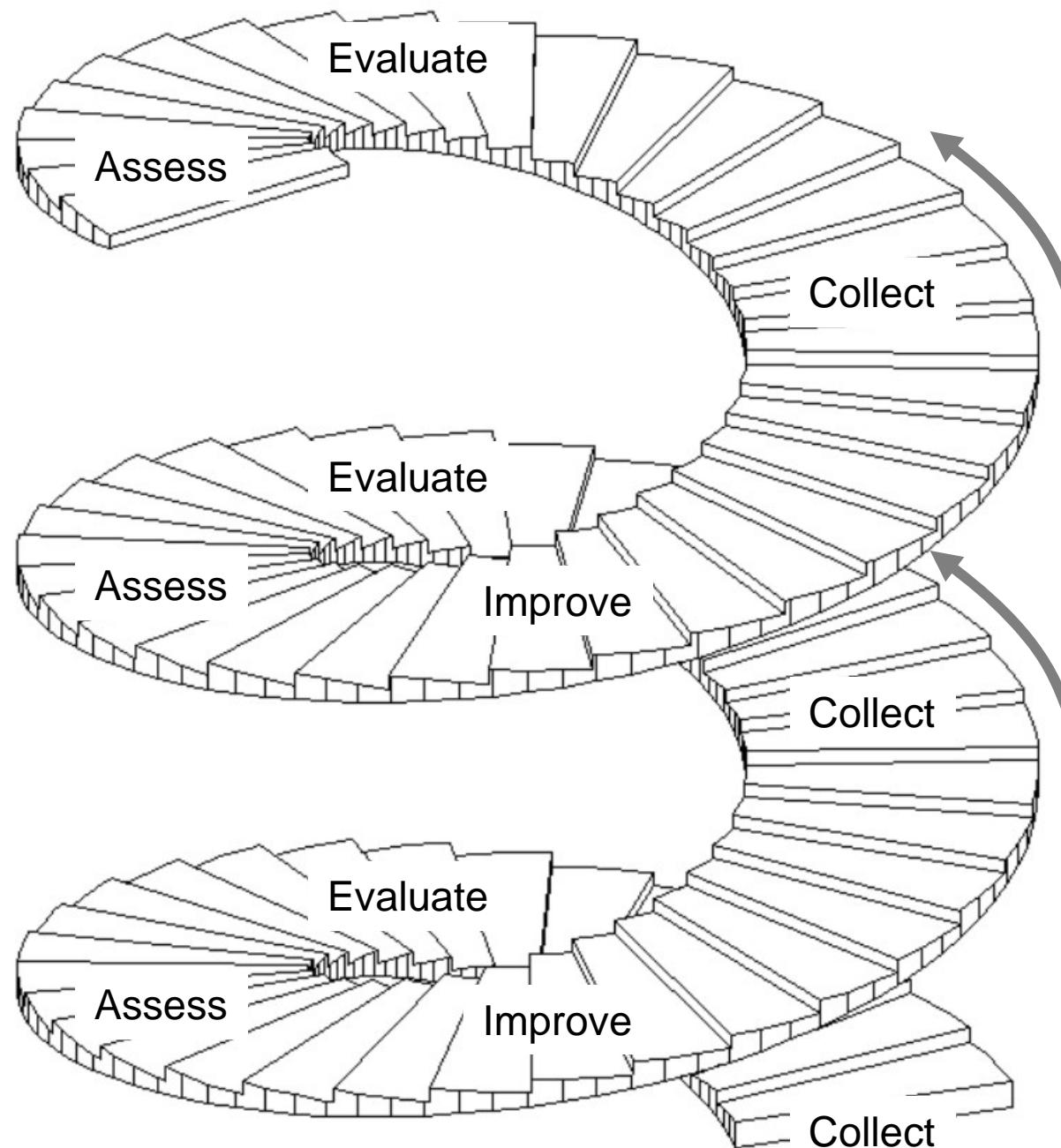
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# Assessment Cycle



# **Definitions**

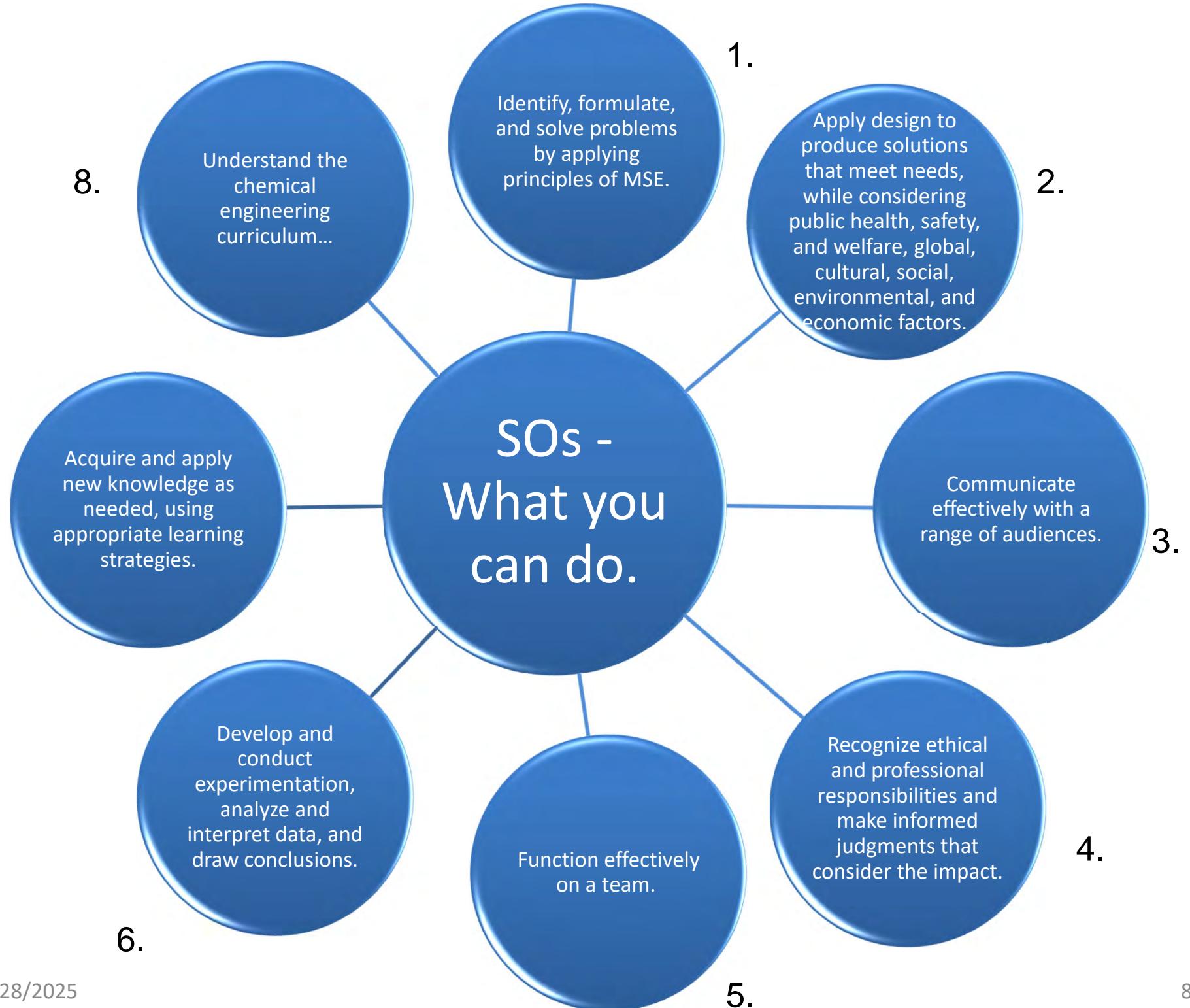
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# **Student Outcome 8 – Maps to Courses and FEE topics**

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# Assessment Instruments

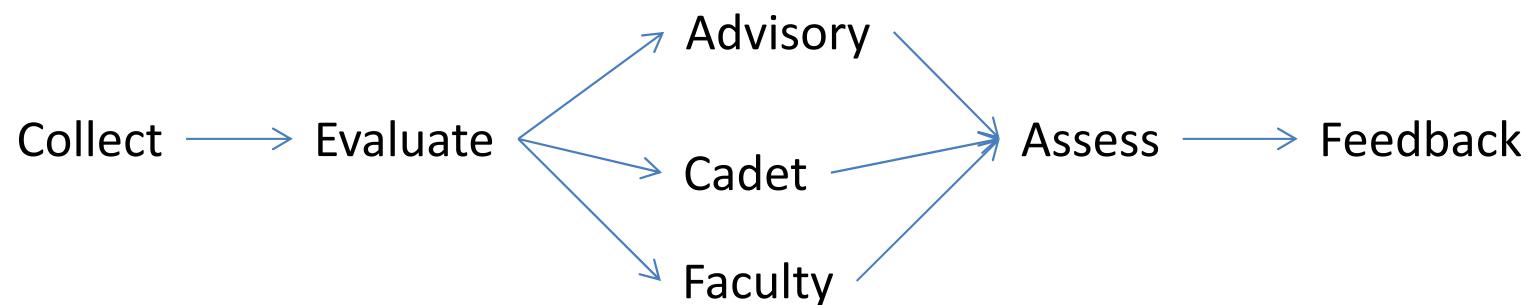
## Performance Data

Embedded Indicators  
Transcripts  
FE Exam

## Program Surveys

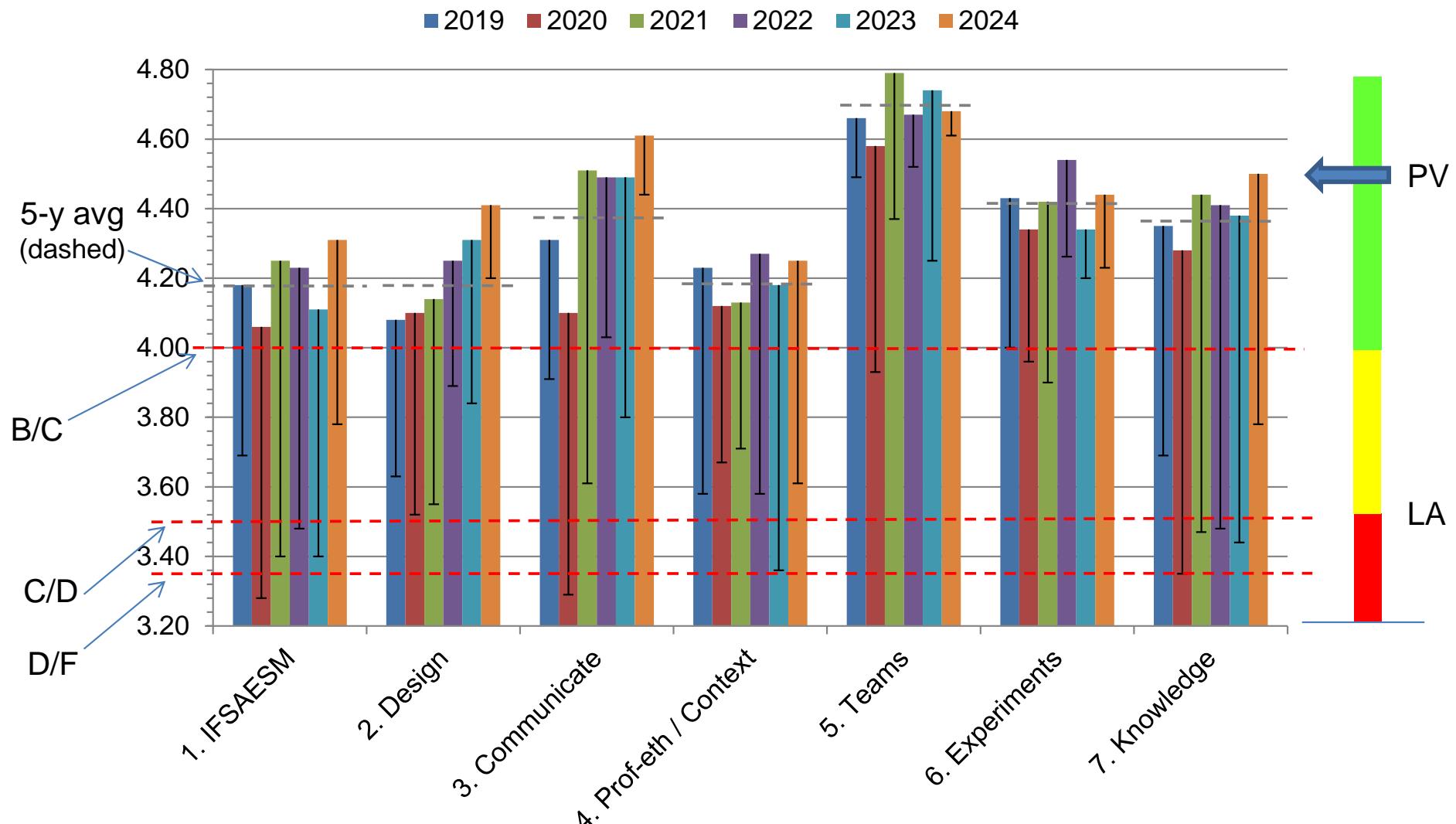
Advisory Board  
Faculty  
Cadets

## Process



# Performance on Embedded Indicators

## Program Averages AY2019 to AY2024



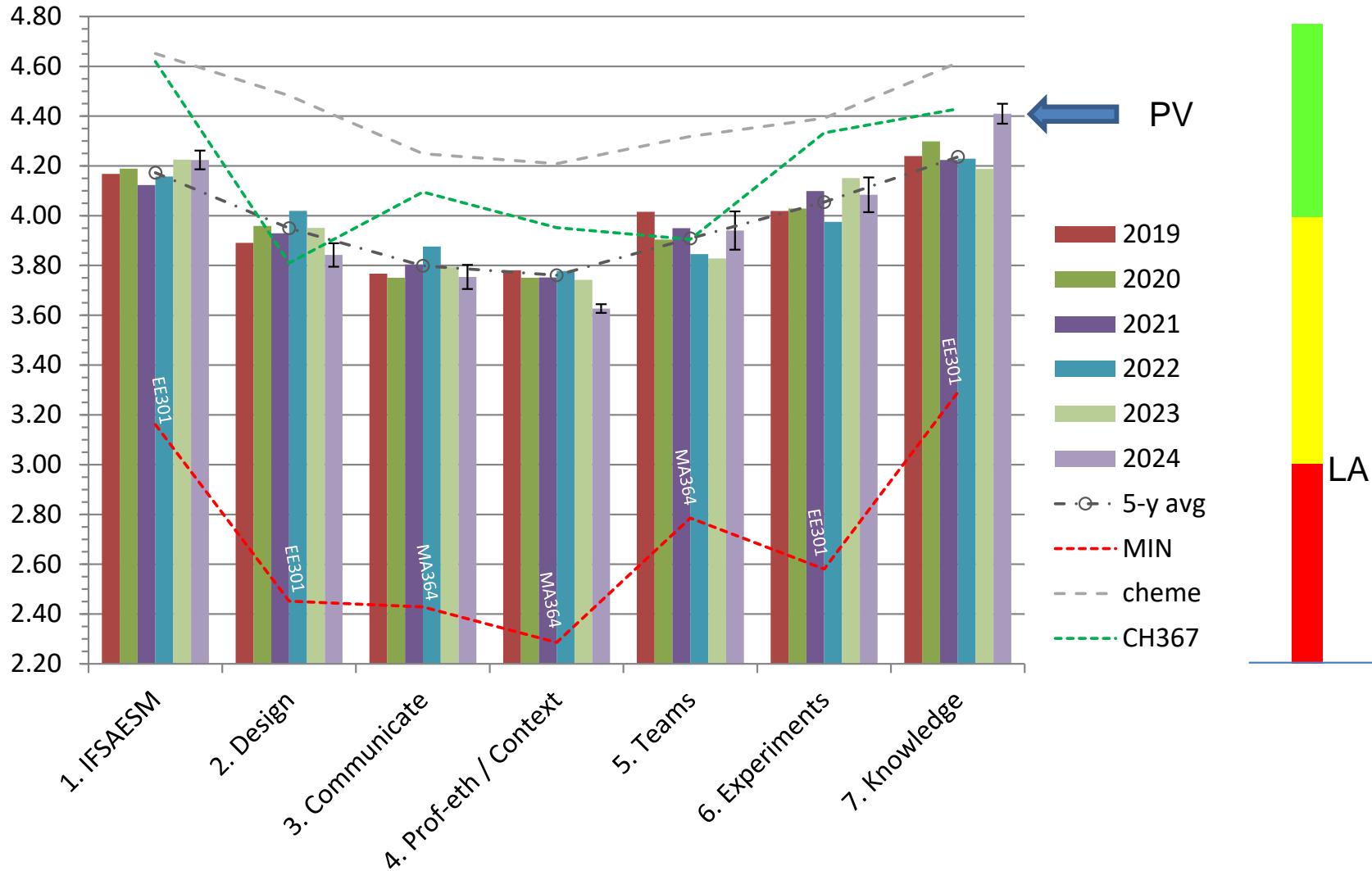
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# End-of-Semester Surveys

## Program Averages from AY19-24

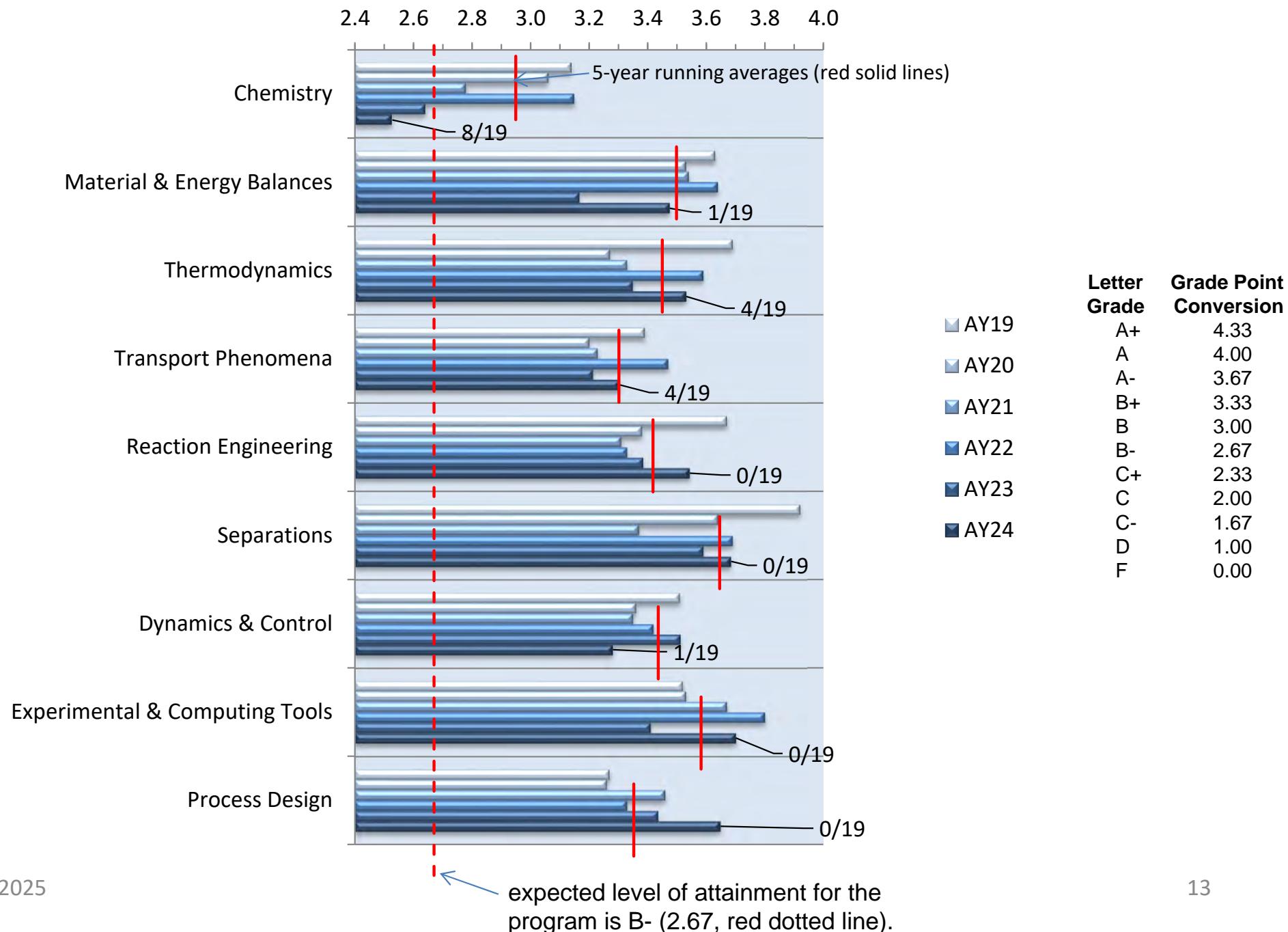
Error bars are standard deviations.

Expected level of attainment is the 5-y average



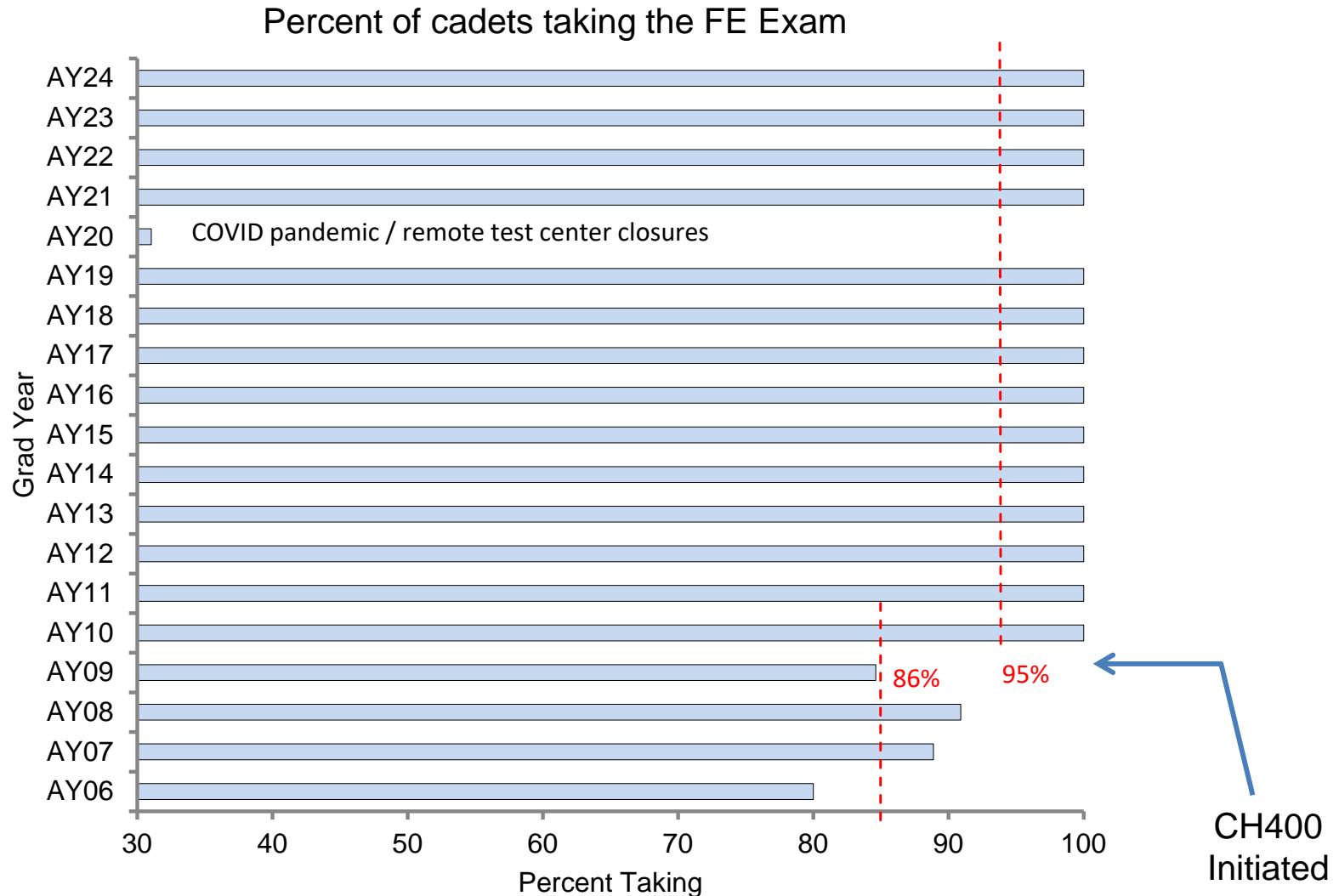
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Student Outcome 8: Understanding of the Chemical Engineering Curriculum  
 Average GPA from Transcripts, AY2019 to AY2024



# Fundamentals of Engineering Exam

Student Outcome 7: Acquire and apply new knowledge as needed, using appropriate learning strategies



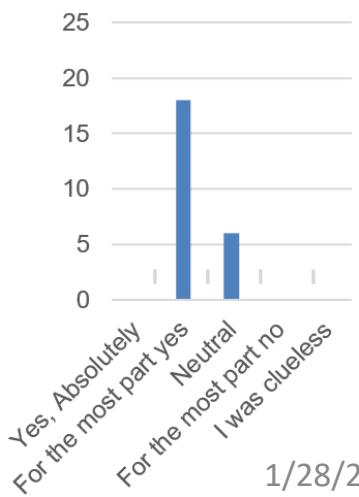
National, (+/- ~1%):

# Fundamentals of Engineering Exam

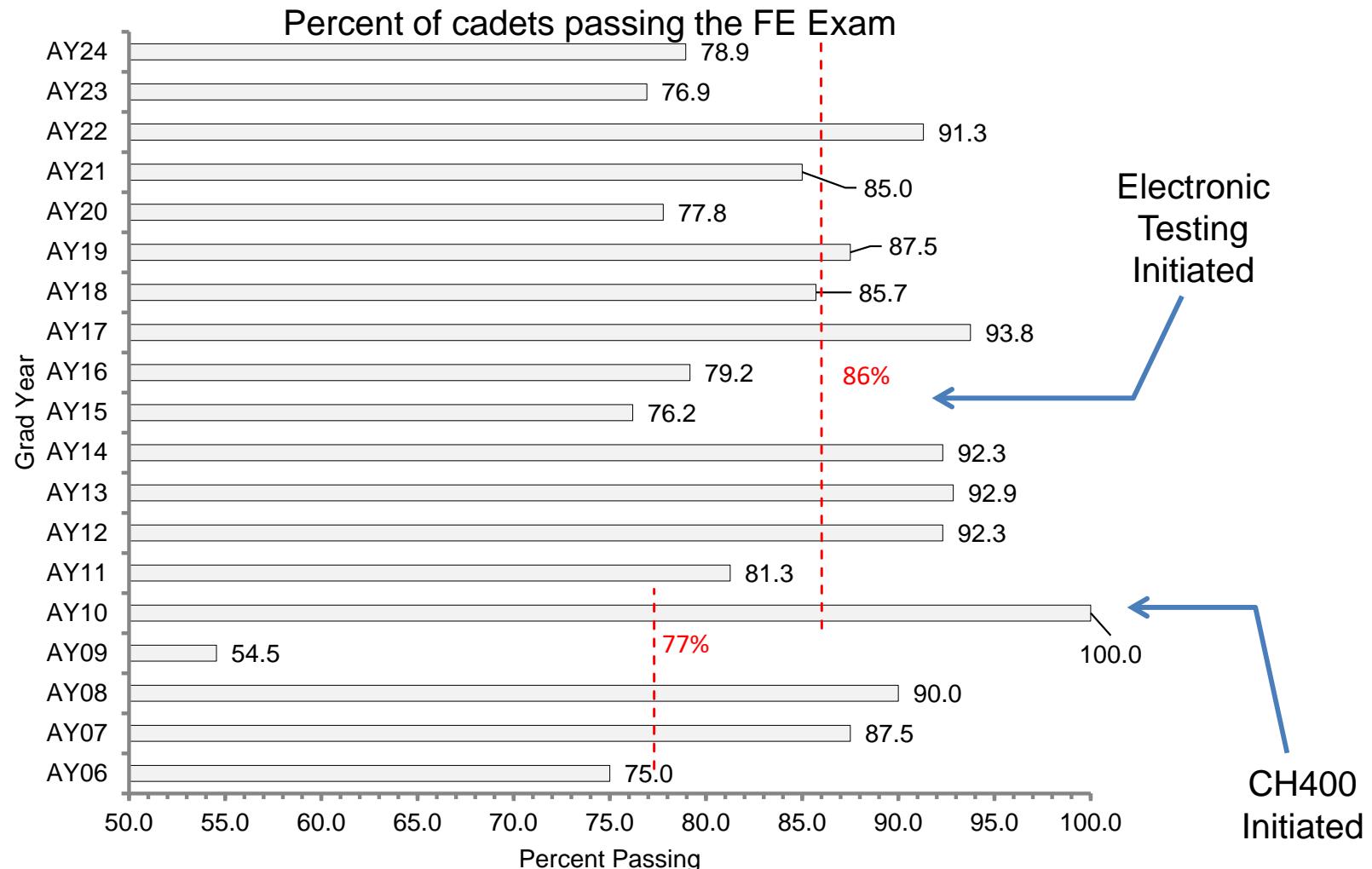
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2009	84.0%
2008	87.0%
2007	87.0%
2006	87.0%

Question 4



1/28/2025

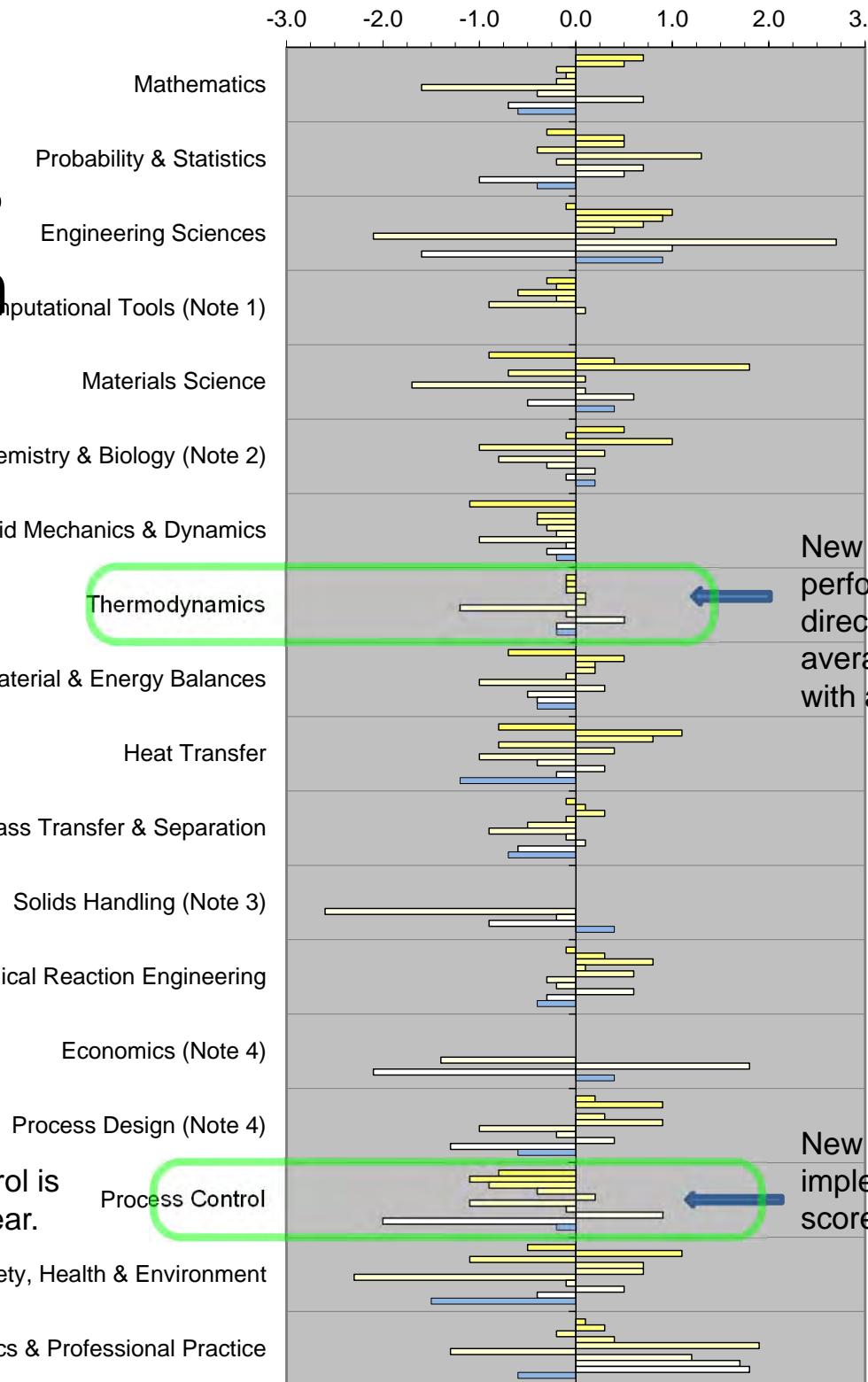


Question 4, Post FEE Survey:  
For the questions on the exam  
that seemed new to you, were  
you able to learn the material  
on the spot?

15

# Topical Outcomes Evaluation

Deviations from National Averages  
AY15 to AY24



New course added in AY13. Trend in performance continues in the right direction and has been near the national average for several successive years, with a setback in AY20 due to COVID-19

Process Control is way up this year.

Process Control

## Notes:

- (1) This topic dropped in 2021.
- (2) "& Biology" added in 2021
- (3) New exam spec in 2021
- (4) "Economics" separated from process design in 2021. Topic was Proc Design & Econ 2020 and before

New course added in AY16 and implemented in AY19-2. Before that, scores were always very low.

Expected level of attainment is the national average (0.0 line)

# **Program Objectives**

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

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

Re-written and approved by  
cadets, faculty, and advisory  
board on AY2024

Published in the USMA  
Redbook, Section 2

## Advisory Board 2024

Original Board Members attending:

No.	Name	Title	Industry - University	Email	Attending?
1	COL(R) Paul Dietrich	Chemical Officer & Refinery Manager	Chemical Officer/Industry	paul@the-dietrichs.com	Yes
2	Prof. Matthew Liberatore	Professor, Chemical Engineering	University of Toledo	matthew.liberatore@utoledo.edu	Yes
3	Prof. Kelly Schultz	Associate Professor, Chemical Engineering	Purdue University	kmschultz@purdue.edu	Yes
4	Prof. Gautham Krishnamoorthy	Professor, Chemical Engineering	University of North Dakota	gautham.krishnamoort@und.edu	Yes
5	Mrs. Kisondra Tanev	Director, Power & Renewables Investment Banking	Bank of America	kisondra@gmail.com	Yes
6	Mr. Kevin Shipe	Account Manager, Chem E (Old Grad '08), Former Automation Engineer	The Graham Company	kevin.a.shipe@gmail.com	Yes
7	Mr. Michael DeForest	Industry, Chem E (Old Grad '07), Senior Director of Operations,	Fortna	michaeldeforest@fortna.com	Yes
8	Mr. Michael Theising	Industry, Chem E (Old Grad '11), Vice President of Operations	Brenntag Group	m.theising@gmail.com	Yes
9	Prof. Susan Daniel	William C. Hooey Director and Fred H. Rhodes Professor of Chemical Engineering	Cornell University	sd386@cornell.edu, Admin Assistant: aks	Yes
10	Prof. Robert Savinell	Distinguished University Professor, Professor of Chemical Engineering	Case Western Reserve University	rfs2@case.edu	Yes
11	Dr. Lucy Hair	Specialist and Chemical Engineer	Jacobs Engineering at Lawrence Livermore National Laboratory	hair1@llnl.gov	No
12	LTC(R) Matthew Armstrong PhD	Associate Professor (Retired LTC) and Principal Engineer	Fluor Marine Propulsion, Schenectady, NY	armstm@udel.edu	NO
13	COL Aaron Hill, PhD, PE	Deputy Head, Department of Civil & Mechanical Engineering	USMA; CME	aaron.hill@westpoint.edu	NO

External panel outside visitors representing the various Represents “constituencies” of the program (civilian and military).

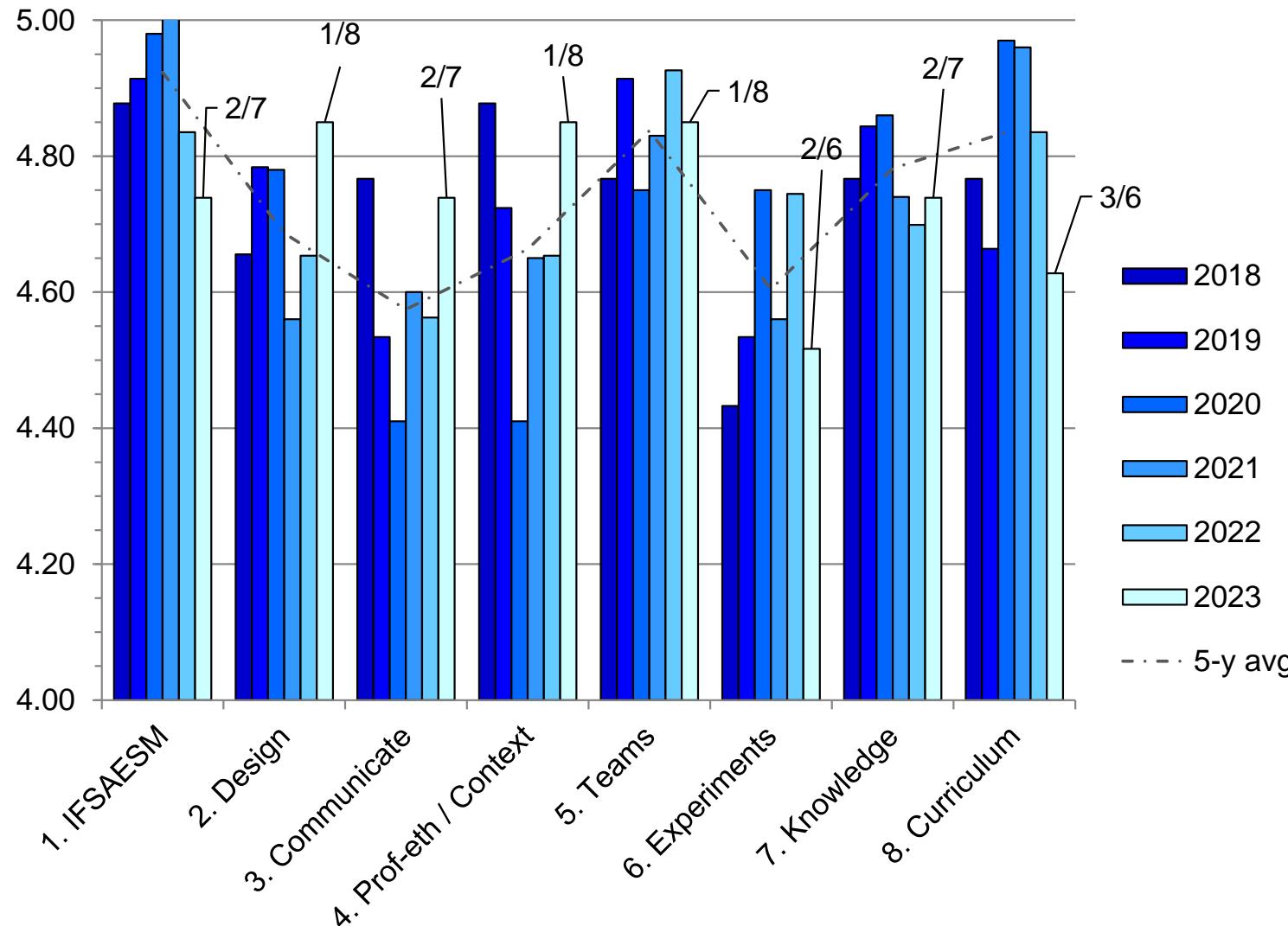
Assists with program educational objectives and assessment.

# Advisory Board Student Outcomes Surveys

## Student Outcomes 1-8

Program Averages from AY18-23

Data labels are response frequencies for 4 or 5 (# of 4s / # of 5s) on the 1-5 Survey Likert Scale  
 Standard deviations range from .00 to .52





# Engineering Technology Accreditation Commission



Please make sure you complete the surveys.

Accredited 1 October 2012 to present

Next Visit – Fall 2026