Name: Paul Dietrich Date: 11 MAY 2021

2021 Advisory Board Surveys

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Name: Paul Dietrich Date: 11 MAY 2021

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

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

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

- [Student Outcome 1] Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- Communicate effectively with a range of audiences.
- Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- Acquire and apply new knowledge as needed, using appropriate learning strategies.

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

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

Name: Paul Dietrich Date: 11 MAY 2021

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

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

Make sure to provide one response per row.

Name: Paul Dietrich Date: 11 MAY 2021

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

FEEDBACK TO BOARD LIMITED BY COVID

Make sure to provide one response per row.

Name: Paul Dietrich

Date: 11 MAY 2021

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

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

I believe That Organic chemistry II should be A part of The curriculum based on 35YRS IN The INDUSTRY

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

Board meetings should resume IN Person or At Least VIA Zoom or Similar

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

Name: Matthew Garvey Date: 05/19/21

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Name: Matthew Garvey Date: 05/19/21

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- Continuous and staged separation operations
- Process dynamics and control
- Modern experimental and computing techniques
- Process design

Name: Matthew Garvey Date: 05/19/21

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

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

Make sure to provide one response per row.

Name: Matthew Garvey Date: 05/19/21

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

Make sure to provide one response per row.

Name: Matthew Garvey Date: 05/19/21

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

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

No suggested course addition. Happy to see success regarding the updated Controls course.

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

No - looking forward to receiving the face to face session with the cadets again next year which of course was not feasible this year.

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

Really excited about the success regarding Student Outcome 6 and the ability to maintain a level of conducting of experiments in remote learning. Congrats on navigating a tough year to the high standard that can always be expected by your program.

Name:_____ Donald Glaser _____ Date:_____ 05/21/21 _____

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Name: Donald Glaser Date: 05/21/21

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- Process design

Name: Donald Glaser Date: 05/21/21

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

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

Make sure to provide one response per row.

Name: Donald Glaser Date: 05/21/21

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

Make sure to provide one response per row.

Name: Donald Glaser Date: 05/21/21

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

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

I do not have any suggestions for new Courses at this time. It is great to see that 2 new Biochem Courses are being added for AY22! Also nice to hear about the success of the updated Controls Course.

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

None at this time! Miss getting together! Look forward to interacting with West Point ChE faculty, other Advisory Board members, and the Cadets!

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

Congratulations on the the unqualified success of your ABET reaccreditation visit - were no short comings! This is great news!

Matt Garvey are also excited to see that your use of our SSI simulation software was recognized as a strength!

Name:_____ Lucy Hair _____ Date:_____ 19 May '21 _____

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Name: Lucy Hair Date: 19 May '21

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- Process design

Name: Lucy Hair Date: 19 May '21

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

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

Make sure to provide one response per row.

Name: Lucy Hair Date: 19 May '21

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

Make sure to provide one response per row.

Name: Lucy Hair Date: 19 May '21

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

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

The curriculum is already crowded - the addition of the bio -engineering courses is a good one. I still feel, as I have before, that only one semester of organic chemistry is inadequate to begin to understand it.

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

In-person if possible. If not, at least some break-out sessions via Zoom with the students, other advisory members, and the faculty.

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

Thanks for the opportunity. Sure hope to meet in person next year.

Another comment is on the drop in students who tried to pass the professional exam this year. Was that because of the hybrid nature of education this past year? What accounts for it?

Name: COL Aaron Hill Date: 05/19/21

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- Process design

Name: COL Aaron Hill Date: 05/19/21

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

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

Make sure to provide one response per row.

Name: COL Aaron Hill Date: 05/19/21

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

Make sure to provide one response per row.

Name: COL Aaron Hill Date: 05/19/21

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

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

From a virtual distance of looking through the slides, it makes sense to continue to pull on the bioengineering thread. I am guessing COL Burpo is well aware of the biomechanical engineering course/elective taught in CME (in fact, I think he has team-taught that course). I mention as that could serve to help provide efficiencies in one way or the other.

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

Hopefully we get to meet in person! If not (God forbid), would it be possible to set up some Teams meetings with some of the faculty and/or cadets?

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

PERSONNEL:
Matt - sorry to see that you're leaving after next year. I'm sure I'll see you around but wish you the very best. Thank you for all your contributions to our mission and community.
Russ - I hope he is not leaving the Academy?!?

ABET: Congratulations on your ABET accreditation!

FEE: Well done on the % pass rate. While not the be all end all, I think the FEE does serve as one indicator of the success of a program. Great job!

Ethics and Communication: Two areas where I would expect cadets to be phenomenal. I found it puzzling to see them perform relatively lower in these areas.

Name: Matthew Liberatore Date: 05/05/21

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

- 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

Name: Matthew Liberatore Date: 05/05/21

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

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

Make sure to provide one response per row.

Name: Matthew Liberatore Date: 05/05/21

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

Make sure to provide one response per row.

Name: Matthew Liberatore Date: 05/05/21

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

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

Adding the new bio-related courses seems to align well with the other programs at USMA.

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

In person if at all possible so more natural interactions between advisors, cadets, and faculty can take place.

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

A small concern on faculty number for AY24 and beyond. Most public institutions of higher education have similar concerns after significant COVID-related budget cuts. Keeping the issue at the forefront with leadership is important.
Providing flexibility on technical elective(s) on Slide 57 is worth considering to allow cadets a few more options as the curriculum is very intense. Chemistry or Materials courses would both seem appropriate.
Slide 64 is an impressive list of research accomplishments and other professional development of the chemical engineering cadets.
Data provided are very comprehensive and succinctlyanalyzed and summarized. Well done.

Name: Kelly Schultz Date: 6/11/2021

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

Name: Kelly Schultz Date: 6/11/2021

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

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

Make sure to provide one response per row.

Name: Kelly Schultz Date: 6/11/2021

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

Make sure to provide one response per row.

Name: Kelly Schultz Date: 6/11/2021

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

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

I think the addition of the new bio-based courses are interesting. I think it would be really interesting to have a biomaterials course outside of the topic just being covered in the modeling course. There is a lot of core materials and chemical engineering in biomaterials that I don't think is covered elsewhere (like polymers, mass spec, etc.), so this could be of interest to the cadets and build their fundamental knowledge. I do like the movement in this direction and the move to add courses.

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

N/A

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

N/A

Name: Kevin Shipe Date: 04/23/21

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Name: Kevin Shipe Date: 04/23/21

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Name: Kevin Shipe Date: 04/23/21

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

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

Make sure to provide one response per row.

Name: Kevin Shipe Date: 04/23/21

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

Make sure to provide one response per row.

Name: Kevin Shipe Date: 04/23/21

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

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

I am interested to see how the new Biomedical courses are implemented and how the cadets that decide to take them perform as well as if it opens up new fields post-USMA/post_Army for them to consider and move into. I don't have any suggestions for new courses at this time.

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

This year was obviously odd because of COVID-19 restrictions and precautions. WE adapt and overcome. Hopefully next year, we will be able to at least meet virtually, if not in person.

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

I have additional questions around the FE participation for AY-20. Was this percentage low due to COVID-19 restrictions or was there a lack of enthusiasm for the importance of this certification? Also, I'm interested in how the changing environment affected the overall performance and training of the cadets in the program. If performance suffers greatly because of an event like this, what needs to be done to ensure a high performance standard is maintained and achieved even in an environment affected by the events of the past year.

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Name:_____ Date:_____

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

The cadets in the program are able to:	Strongly Disagree		Neutral		Strongly Agree
• Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.					✓
• Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.					
• Communicate effectively with a range of audiences.				✓	
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• Develop and conduct appropriate experimentation, analyze, and interpret data, and use engineering judgment to draw conclusions.					
• Acquire and apply new knowledge as needed, using appropriate learning strategies.					
• Have attained a thorough grounding in and working knowledge of the chemical engineering curriculum.					

Make sure to provide one response per row.

Name:_____ Date:_____

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.					✓
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- Process design

Name: Patrick Underhill Date: 04/25/21

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

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

Make sure to provide one response per row.

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

Make sure to provide one response per row.

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

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

In the elective sequence on materials, both classes sound more related to hard materials. Is there interest in soft materials to complement the courses in Thermal Fluids Systems?

There was a note about numerical methods electives. It was not clear if this would be for 1st Class, or if it would be best after Applied Math and before Control.

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

Nothing in particular.

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

Students seem to continue to have lower grades in Organic Chemistry, though that is not uncommon for chemical engineers.

Grades in the Laboratory course dropped from AY 16 to AY18. Are these just natural variations from year to year, or are there changes to be made to help get back to AY16 levels?