BOG Graduate Program Review
Spring 2022

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This year the Graduate Council reviewed 20 graduate programs at WVU-Morgantown. The following pages consist of the recommendations and rationales for the review decisions for the programs listed below.

WEST VIRGINIA UNIVERSITY
Audiology, AuD, WVU*
Educational Leadership-Higher Education Administration, MA, WVU
Accountancy, MAcc, WVU*
Computer Science, MS, PHD, WVU
Mathematics, MS, PHD, WVU
Safety Management, MS, WVU
Speech-Language Pathology, MS, WVU*
Aerospace Engineering, MSAE, WVU*
Civil Engineering, MSCE, WVU
Chemical Engineering, MSCHE, WVU
Engineering, MSE, WVU
Electrical Engineering, MSEE, WVU
Energy Systems, Engineering, MSESE, WVU
Industrial engineering, MSIE, WVU
Mechanical Engineering, MSME, WVU
Mining Engineering, MSMINE, WVU
Materials Science and Engineering, MSMSE, WVU
Petroleum and Natural Gas Engineering, MSPNGE, WVU
Software Engineering, MSSE, WVU

*Accredited Programs

WVU Board of Governor's Program Review

Executive Summary – Academic Year 2021-2022

Graduate Programs

- 12 programs were continued at the current level of activity
- 6 programs were continued with specific action
    - 5 actions were assigned to assessment of student learning
    - 3 actions were assigned around achieving viable enrollment
- 1 program was recommended for further development or discontinuance

Program	Follow-up actions recommended
MA Educational Leadership	Revise learning outcomes, evidence of assessment
MS Computer Science	Revise learning outcomes, evidence of assessment
MSAE Aerospace Engineering	Revise learning outcomes, evidence of assessment
MSCHE Chemical Engineering	Enrollment, completion, learning outcomes, evidence of assessment
MSEE Electrical Engineering	Enrollment
MSESE Energy Systems Engineering	Further development or discontinuance
MSMINE Mining Engineering	Evidence of assessment

Follow-up Actions Assigned in Previous Years

- 8 programs had follow-up actions reviewed
- 1 program was discontinued
- 3 programs resolved their issues
- MS Recreation, Parks, and Tourism Resources did not resolve concerns about its enrollment
    - Will be asked to follow-up again each of the next two years

Program	Follow-up action status
MA Educational Psychology	Discontinued
MA Special Education	Resolved: faculty, enrollment
MS Animal and Nutritional Sciences	Not resolved: learning outcomes
MS Animal Physiology	Not resolved: learning outcomes
MS Forestry	Resolved: website inconsistencies
MS Recreation, Parks, and Tourism Resources	Not resolved: enrollment
MS Resource Economics Management	Resolved: enrollment
PhD Animal Sciences	Not resolved: learning outcomes

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

Doctorate of Audiology (AuD)

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

- ⦿ Yes
- ○ No
- ○ Not specially accredited; no national accrediting body
- ○ Not specially accredited; there is a national accrediting body

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The program aligns with WVU's mission, vision and values. The Doctorate of Audiology program at WVU is the only program that offers this degree in West Virginia. The program prepares individuals to meet the needs of citizens in West Virginia and beyond relative to education and healthcare.
Graduates from this program meet the certification and licensure requirements nationally and in West Virginia to work within educational and healthcare settings to improve the communication of those with hearing and balance disorders so that they can effectively participate in their daily living activities. The need for the program to prepare audiologists is critical due to the shortage of audiologists in West Virginia as well as nationally.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program did not have any issues with infrastructure resources.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program has adequate faculty to meet the mission of the program and did not experience any issues during the review period to negatively impact faculty's ability to be productive in terms of their teaching, research, and service

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes

○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The Doctorate of Audiology program has recently initiated admissions after a two-year pause (2019-2020 and 2020-2021 academic years) due to discussions related to the feasibility of continuing the program due to a lack of faculty and need to invest in clinical equipment to appropriately prepare students for clinical practice. As result, the enrollment has fallen over the past five years with an average enrollment of approximately 28 students (range = 35-19). The current cohort which began in fall 2021 had 10 students. It is expected that these cohorts will increase to 15 as a result of the move to SOM and the transition to a 3-year program as opposed to the previous 4-year program. Now that the transition to SOM has completed and with the completion of the new clinical and academic facilities during the 2021-2022 academic year, the program plans to increase the number of applicants during the next admission cycle (i.e., 2022-2023) to ensure that cohorts of 15 are enrolled so that maximum enrollment is 45 across the three cohorts. Despite the pause in admissions over the past 5 years, an average of 7 students graduated each year (range = 6-9). There are no issues with high DFW courses within the program. During the past three years, graduates have achieved 100% employment and have been successful in passing of the Praxis Examination.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes

○ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes

○ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

○ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program conduct an annual review utilizing the feedback from previous year's student's performance on academic and clinical evaluations of knowledge and skills, survey of external supervisors regarding students' preparedness, survey of current student regarding clinical preparedness, Praxis performance as well as survey of alumni and their employers. The information gathered are evaluated by the faculty to identify the strengths and opportunities for improvement. In addition, faculty evaluate the research and practice recommendations regarding current and future trends within the field. The data along with research regarding current practice trends are integrated to identify needed changes within the academic and clinical training process. The assessment process identified several issues that needed improvement including insufficient knowledge relative to vestibular assessment and treatment and lack of appropriate clinical experience. These issues were resolved upon implementing additional training and establishing new sites for clinical experience which would increase the opportunity for students to be better prepared for their residency.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

Prior to July 2021, the program was located within the College of Education and Human Services (CEHS). However, due to the cost of the clinic and program, an administrative decision was made to move the Department of Communication Sciences and Disorders (CSD) to the School of Medicine (SOM). As part of the transition to School of Medicine and to address the feedback from all constituents, the previous 4-year program was revised to become a 3-year program. The newly implemented 3-year program has students beginning clinic during the second semester. Additionally, the academic courses have been redesigned to focus on assessing clinical skills as well as academic knowledge and the integration of simulation has been added with increased access to the STEPS lab. The completion of the new WVU Speech, Language, and Hearing Clinic in spring 2022 which includes new audiology equipment will provide students with the state of the art facility to practice clinical skills. The first cohort of the 3-year program was enrolled in fall 2021 and the new program will be assessed beginning in spring 2022.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
◉ No

Q8.1. What is the recommendation for this program?

◉ Continuance at the current level of activity
○ Continuance at the current level of activity with specific action
○ Continuance at a reduced level of activity
○ Identification of the program for further development
○ Development of a cooperative program
○ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

MA Educational Leadership - Higher Education Administration

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

◉ Not specially accredited; no national accrediting body

○ Not specially accredited; there is a national accrediting body

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The program aligns with WVU's mission, vision, and values. The MA ED in Higher Education Leadership is an online program with a diverse students population, which they intentionally recruit along the racial, economic, gender, and sexual identity and is committed to the transformation of higher education and engagement within WV communities and institutions through courses such as Diversity Issues in HIED, Women & Gender in HIED, Colleges & Communities (a service-designated course), Land-GrantUniversities, and International Higher Education to name a few. The program provides "valued solutions to real-life problems" through student internship experiences and a host of other on and off-campus projects in which students work with a mentor to respond to real-world problems and/or improve university practices and student experiences. The program seeks to develop new institutional leaders, practitioners, and researchers to serve and advance a wide range of institutional roles.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program has adequate and accessible infrastructure resources. The program has no significant issues related to student accommodations, classroom scheduling, adequate technological infrastructure, adequate technological support, and adequate physical infrastructure. The program also has adequate faculty necessary to meet the mission of the program.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program has adequate faculty necessary to meet the mission of the program. There were also no significant negative effects on the faculty's ability to be productive in terms of their teaching, research, and service during the review period. All faculty in the program had academic credentials qualifications.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

- 🔘 Yes
- ⭘ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The student enrollment trends are healthy and steady. The program has 32 students in Fall 2020, with the highest number of students being in Fall 2019 with 34 students and the lowest being in Fall 16 with 25 students. The number of graduates from the program has been steady, with the highest being in AY 2019-2020 with 17 students and the lowest being in AY 2018-2019 with 11 students, and the average graduate per year is 13 students. The average completion time for the last five years is 1.94 years with the highest being in AY 2016-2017 with 2.5 years and the lowest being in AY 2020-2021 with
1.63 years. High D/F/W courses were not applicable. The graduates of the program are hired at institutions across the US across student affairs positions in advising, success, admissions, diversity, athletics, and assessment as well as non-profit organizations such as the Obama Foundation. Some graduates also pursue doctoral degrees in Higher Education at various Universities including WVU. The program has established a student organization "WVU Higher Education Student Association" (WVU HESA) during this review cycle.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

○ Yes

● No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

● Yes

○ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

● Yes

○ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program assesses itself on the basis of the student learning outcomes. The program has created a set of 5 new Student Learning Outcomes (SLO) and each of the SLOs is tied to particular classes. Each year one SLO is assessed through student work and portfolios. For Example, the program will assess SLO 1 in 2022 through HIED 648: History of Higher Education. The program does provide a concrete assessment plan with evidence based on its assessment strategy. The program does identify minor changes to the program related to assessment. They are - Learning Outcomes published in the catalog are not the actual learning outcomes utilized by the program. The program has created new student learning outcomes. The program is being edited in the CIM system as part of a function review and once approved the new student learning outcomes will be submitted in CIM for approval to reflect the changes in the Catalog page. - The HIED 785 course which addresses the new student learning outcome 5 was approved through the CIM system with a new permanent course number.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

The program does not provide any summary of improvements made to the program.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
◉ No

Q7.4. This program meets the Program of Excellence criteria for "distinction" as follows:

The program is not seeking the Program of Excellence distinction

Q7.5. This program meets the Program of Excellence criteria for "faculty" as follows:

The program is not seeking the Program of Excellence distinction

Q7.6. This program meets the Program of Excellence criteria for "graduates" as follows:

The program is not seeking the Program of Excellence distinction

Q7.7. This program meets the Program of Excellence criteria for "curriculum and assessment" as follows:

The program is not seeking the Program of Excellence distinction

Q8.1. What is the recommendation for this program?

○ Continuance at the current level of activity
◉ Continuance at the current level of activity with specific action
○ Continuance at a reduced level of activity
○ Identification of the program for further development
○ Development of a cooperative program
○ Discontinuance

Q8.2. Provide an explanation of what follow up action(s) should be taken by the program, what response is expected to the Council (if any), and when. Typically reports are due at the end of the same calendar year when the program review was submitted.

Examples of reports back to the Council often may:

1) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts).
2) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data.
3) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan.
4) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan with additional interim follow-up reporting.

By December of 2023, submit a follow-up report that: 1) Demonstrates that the program has published its updated student learning outcomes in CIM and the Catalog. 2) Demonstrates evidence that the program has implemented the assessment plan to assess student learning for those new program learning outcomes.

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

Master of Accountancy (MAcc)

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

● Yes

○ No

○ Not specially accredited; no national accrediting body

○ Not specially accredited; there is a national accrediting body

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The MAcc program plays an integral role in attaining WVU's mission by educating and preparing our MAcc students thereby enabling them to support the state, nation and global capital markets as financial professionals. The MAcc program delivers high quality education and embraces the values of culture, diversity and inclusion to promote professional opportunities between the state, the nation and the world. The above statements are consistent with the Mission statement as established in response to question Q3.3

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

No issues reported. The program has the resources and infrastructure necessary to enable the program's ability to be delivered to its students in a timely manner for their success.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The faculty includes: 2 Adjunct Professors, 4 Assistant Professors, 2 Associate Professors, 4 Professors, 4 Teaching Assoc. Professors and 1 Administrative Associate. All Assistant, Associate and Full Professors members have doctoral degrees and others have master's and CPA credentials. The number of faculty members and their credentials are adequate.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

- ⦿ Yes
- ◯ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> Based on data provided, the number of students is steady and increasing with headcount of 31, 31, 34 and 43 in the last four years (2017-2020). The number of students graduating per year are: 31, 24, 33, and 15. Steady at the beginning but decreasing during the COVID year. The time to graduate (completion) is increasing a bit, 1.0, 1.02, 1.08 and 1.4 in the last 4 years (2017-2020) with the last year clearly being the COVID year. No DFW data to report.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

- ⦿ Yes
- ◯ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

⦿ Yes

◯ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

⦿ Yes

◯ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

WVU's John Chambers College of Business and Economics is accredited by AACSB International, the principal accrediting organization for business schools. Only 5% of business schools worldwide achieve this distinction. The accreditation plan involves a 5 year cycle. The most recent review was in year 2020 and the next review will be in the academic year 2024-2025. The plan is based on the self-assessment of 4 learning outcomes (LO) which are evaluated every two years. The performance index for key courses for each LO (1-4) were ACCT512 (72%), ACCT511 (93%), ACCT571 (100%) and ACCT571 (97%) respectively. In all the LO's the level of attainment meets or exceeds the expectations for years 2018 and 2019. During the review of year 2020, the performance indices for the CPA Exam questions was 77.8% and the improvement in MC Simulations reached 27%, again meeting or exceeding the expectations for year 2020.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

Objective Financial Accounting and Reporting CPA Exam questions reached 77.8%. Standard met; no improvements deemed necessary at this time. MC and simulations (A 20% or greater improvement from Pre- to Post- Test on Mock CPA Exam). Change so ACCT 511 is in the spring and ACCT 551 in the fall semesters; CPA review for both courses in the same semester deemed too strenuous for students. The assessment test will be required for a grade and not extra credit after Spring 2021. The continuous improvement process established by the Accreditation Process, provides an adequate mechanism for maintaining the quality and currency of the program. It would help for the purpose of this review to make the Self-Study Report for accreditation to be made available.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
● No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
● No

Q7.4. This program meets the Program of Excellence criteria for "distinction" as follows:

N/A

Q7.5. This program meets the Program of Excellence criteria for "faculty" as follows:

N/A

Q7.6. This program meets the Program of Excellence criteria for "graduates" as follows:

N/A

Q7.7. This program meets the Program of Excellence criteria for "curriculum and assessment" as follows:

N/A

Q8.1. What is the recommendation for this program?

- ⦿ Continuance at the current level of activity
- ○ Continuance at the current level of activity with specific action
- ○ Continuance at a reduced level of activity
- ○ Identification of the program for further development
- ○ Development of a cooperative program
- ○ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

M.S. Computer Science and Ph.D. Computer Science

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

◉ Not specially accredited; no national accrediting body

○ Not specially accredited; there is a national accrediting body

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The program aligns with WVU's mission, vision, and values to advance education and high-impact research. These programs are rigorous and involve conducting original and relevant research. The research also involves solving challenging problems which contributes to WVU's mission to advance healthcare and prosperity for all.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Yes, they have adequate and accessible infrastructure resources.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The programs were "various aspects of class room teaching, student-faculty interaction, and overall student learning" were impacted by the pandemic. University efforts to reduce these impacts helped these programs.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes

○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The number of students enrolled has increased since 2018. Number of graduates has fluctuated from 7 in 18-19, to 10 in 19-20, to 8 in 20-21. Time to completion has decreased since 18-19 (3.07) and in 20-21 was 1.71. Students have published in very high-impact journals and presented at conferences. Some have received competitive and prestigious scholarships and have accepted employment at leading edge technological companies. It would be useful for future reviews to provide statistics regarding these success: How many/what percentage of students have published, where, and how many articles? How many conference presentations, competitive scholarships, and how many or what percentage of graduates have accepted employment at leading edge technological companies?

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

○ Yes

◉ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

○ Yes

◉ No

Q5.3. Provide a specific critique of the program's learning outcomes.

The learning outcomes in the course catalogue are not the same those those in CIM. In CIM in lists the following learning outcomes " Achieve success and proficiency in the Computer Science profession. Be recognized as leaders. Contribute to the well-being of society." I'm not sure how these learning outcomes would be measured and assessed and their assessment plan doesn't indicate how they would assess them.

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

○ Yes

⦿ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

They mention that the graduate affairs committee evaluates the program and makes changes, there is a final exam with a faculty committee that all students go through, there is a graduation survey, and a core set of courses. However, none of these are connected to their learning outcomes. They do not provide assessment findings from all of these components only that they found a decrease in applications and enrollments. There is no evidence provided related to the outcomes of the final exam, graduation survey, or the grades in the core set of courses. There is no evidence of assessment related to learning outcomes.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

The graduate affairs committee has made only minor changes to the program. Council would like to recommend revising program learning outcomes, developing an assessment plan to assess those learning outcomes, and then presenting the assessment results in the future.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes

◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes

○ Maybe

◉ No

Q8.1. What is the recommendation for this program?

○ Continuance at the current level of activity

◉ Continuance at the current level of activity with specific action

○ Continuance at a reduced level of activity

○ Identification of the program for further development

○ Development of a cooperative program

○ Discontinuance

Q8.2. Provide an explanation of what follow up action(s) should be taken by the program, what response is expected to the Council (if any), and when. Typically reports are due at the end of the same calendar year when the program review was submitted.

Examples of reports back to the Council often may:

1) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts).
2) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data.
3) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan.
4) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan with additional interim follow-up reporting.

By December 2022, the Graduate Council requires a follow-up report that: 1) Demonstrates that the program has revised its learning outcomes and published those to CIM and Catalog; By December 2023, the Graduate Council requires a follow-up report that: 1) Demonstrates evidence of having implemented a meaningful approach to assessment of student learning.

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

MS and PhD in Math

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

◉ Not specially accredited; no national accrediting body

○ Not specially accredited; there is a national accrediting body

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The graduate program in the Department of Mathematics contributes directly to the Mission and Vision of West Virginia University as defined through the five values of Service, Curiosity, Respect, Accountability, and Appreciation. Service: The Department of Mathematics provides instruction to a large fraction of students who attend WVU. Graduate students in the Department demonstrate service to their peers and the people of West Virginia by serving as tutors and as Graduate Teaching Assistants. Because the Department of Mathematics is responsible for such a large fraction of undergraduate teaching at West Virginia University, a dedicated program within the School of Mathematical and Data Sciences, the Institute for Math Learning, focuses exclusively on student learning and the delivery of high-quality instruction. Curiosity: Through mathematics research opportunities, our graduate students work directly with the faculty in their research gaining valuable experience and exploring the cutting edge of their discipline. These experiences highlight the value of obtaining a MS/PhDdegree from an R1 institution. Respect, Accountability, and Appreciation: The Department of Mathematics is committed to making sure that students who earn a MS or PhD degree in mathematics acquire the essential knowledge and skills required to succeed in a wide range of careers that rely on mathematical training.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

There are no issues.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Yes. The increase in the number of remedial courses that have to be taught by faculty in the department has reduced our flexibility in offering required graduate courses for the MS and PhD. To compensate for need to shift faculty resources, we have stretched the existing faculty through the use of overloads for the Tenure Track and Teaching Faculty, through the hiring of a large number of Teaching Instructors (faculty without a terminal degree), through Adjuncts, and by have Graduate Teaching Assistants teach more courses. These various solutions enable us to provide instruction in the core courses required for the MS/PhD degrees in Mathematics.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

- ⦿ Yes
- ○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Total MS and PhD headcount is down 43% over the reporting period. The decrease is most significant in the PhD program and the 20% drop from Fall 2019 to Fall 2020 reflects the complete shutdown of international students due to Covid-19. The MS program enrollment is essentially flat. The department relies heavily on international students for the PhD program and the decrease in Fall of 2021 was even larger. Without international students, the PhD program will need to focus more intensely on recruiting domestic students. This is problematic given the non-competitive level of our stipends for GTAs. Without competitive GTA stipends, we cannot recruit the same number of PhD students as in the past. There is a direct correlation between the number of competitive GTA stipends and the size of the PhD program. We have moved up our application deadline so that mathematics PhD students will have completed applications in time to compete for University level graduate fellowships, we have embarked on a significant recruiting push, and we looking at ways to capitalize on our membership in the new School of Mathematical and Data Sciences to attract more domestic students. Program continuance in both the PhD and MS programs is robust and essentially unchanged over the review period.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

- ⦿ Yes
- ◯ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

- ⦿ Yes
- ◯ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

- ⦿ Yes
- ◯ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Previous assessment reports by the Department of Mathematics focused entirely on learning in the IML courses (below Math 261) and included some assessment of upper division undergraduate majors courses through exist surveys. None of the prior assessment studies or the feedback from the Provost's office addressed graduate program assessment or curriculum development. Therefore, there are no prior assessment studies of the graduate program in mathematics. Future assessment in the department will include graduate program assessment. Similarly, there is no curriculum map for the MS and PhD programs. Quoting Dr. Slimak, "I wouldn't worry about having a curriculum map for your graduate programs for the purposes of BOG program review." Therefore, no curriculum map has been submitted.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

There is lack of assessment plan at the graduate level.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes

◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes

○ Maybe

◉ No

Q8.1. What is the recommendation for this program?

◉ Continuance at the current level of activity

○ Continuance at the current level of activity with specific action

○ Continuance at a reduced level of activity

○ Identification of the program for further development

○ Development of a cooperative program

○ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

MS Safety Management

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

◉ No

○ Not specially accredited; no national accrediting body

○ Not specially accredited; there is a national accrediting body

Q1.3. Explain why the program is not in good standing with its accrediting body. Provide a judgment on whether or not the program is taking adequate action(s) to return to good standing.

The accrediting body is The Applied and Natural Science Accreditation Commission (ANSAC) of ABET. There were five shortcomings: four weaknesses and one deficiency mentioned on Sept 22, 2021. It is noted that there will be a response to ABET in the next month. These corrections will be reflected in the next accreditation review of Sept 2026. The self study review was comprehensively explained.

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The Safety Management program provides opportunities and advanced training to the students and professionals in West Virginia and the surrounding region that are interested in pursuing successful careers as safety professionals. The program graduates possess the necessary knowledge and skills to competently and ethically implement and practice applicable scientific, technical, and regulatory aspects of the safety, health, and environmental profession. A safety internship is required in the curriculum, which helps the students to solidify their classroom training by working on real-life safety problems and scenarios. The Safety Management program at WVU has a near 100% job placement rate. Over the past decade, the graduates of theSafety Management program have been serving the local and regional employers in various capacities as safety professionals, making an active contribution to the prosperity and transformation in West Virginia. The mission of the safety management program is to prepare program graduates to meet the safety mission of any enterprise. This is stated simply as:The safety mission of an organization is to protect, conserve, and improve the resources—people, property, and efficacy—of the organization. TheMaster's of Science with a major in Safety Management is accredited by the Applied and Natural Sciences Accreditation Commission (ANSAC) of ABET.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> There were no significant issues related to adequate and accessible infrastructure resources.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> Currently the faculty seem to have adequate credentials, composition and productivity.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

- ◉ Yes
- ○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> Graduation data: AY 16-17 (35); AY 17-18 (43); AY 18-19 (37); AY 19-20 (37); AY 20-21 (50) Time to completion data: AY 16-17 (1.51); AY 17-18
> (1.52);AY 18-19 (1.74); AY 19-20 (1.31); AY 20-21 (1.61) A general trend in the graduation data is upward. The number of graduates has improved from 35 in 2016-17 to an average of 42 students per year over the past four years. It is expected that the graduation numbers will further improve in the coming years. The majority of the students in the Safety Management program are self-supported and almost all students complete the program using the course work-only option. Typically, students complete 9-12 credit hours per regular semester and take additional classes during summer to complete the required 36 credits in 3 to 4 semesters (including summer). Thus, the average time to completion over the past cycle was around 1.5 years, which i slower than a typical duration of 2 years for an MS degree. There are no high DFW courses within the Safety Management program.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes

○ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes

○ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

○ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

From the self study stated: the most relevant assessment findings are listed below: - Several courses lack the necessary rigor to fully prepare the program graduates to successfully deal with the real-world economic factors (SAFM 528), environmental and personal hazards (SAFM 502), and general safety issues surrounding OSHA standards (SAFM 511). - Additional elective courses in the areas of leadership, healthcare, and construction would provide much-needed training to the program graduates considering the newer trends in the industry - Certified Safety Professionals (CSP) are desired by many employers, and therefore educating our students about the importance of CSP certification and eventually encouraging them to pursue the certification would enhance their prospective job and professional development opportunities.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

Under the submitted self-study: under the "Continuous Improvement" section on pages 72-75, program improvement and/or changes are listed in chronological order. Pages 75-77 (under section "Additional Information"), summarize a few key accomplishments since 2015 based on "Vision2015" - an initiative spearheaded by the faculty in consultation with the SAFM visiting/advisory committee. Course-specific continuous improvements arelisted on pages 77-79 under the section on "Examples of continuous improvements follow"

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes

◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes

○ Maybe

◉ No

Q8.1. What is the recommendation for this program?

◉ Continuance at the current level of activity

○ Continuance at the current level of activity with specific action

○ Continuance at a reduced level of activity

○ Identification of the program for further development

○ Development of a cooperative program

○ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

Speech Pathology

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

◉ Yes

○ No

○ Not specially accredited; no national accrediting body

○ Not specially accredited; there is a national accrediting body

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

This degree program, the MS Speech-Language Pathology degree, aligns with WVU's mission, vision and values in that WVU seeks to prepare individuals to meet the needs of citizens in West Virginia and beyond relative to education and healthcare. Graduates from this program meet the certification and licensure requirements nationally and in West Virginia to work within educational and healthcare settings to improve the communication of those with speech, language, and/or swallowing disorders so that they can effectively participate in their activities of daily living whether that be within the school setting, their workplace, or community. Given the ongoing shortage of speech-language pathologists in West Virginia, as well as nationally, the need for programs to prepare individuals for these jobs is critical. We support, mentor, and engage students to be curious, competent, caring professionals who positively impact the profession and the diverse individuals we serve in West Virginia and beyond.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

There is an issue with the technology available within the classroom to be able to provide courses simultaneously to online and on-campus students. We recently initiated an online speech-language pathology program that was developed in partnership with the WV DOE.We are currently struggling to meet the needs of both programs related to academic instruction because courses were planned to be offered simultaneously on-campus and online. Two issues have been identified. Our cohorts are too large for the classrooms with the necessary technology (i.e.,microphones throughout the classroom).

Additionally, the classrooms that are designed collaborative learning are too small for the on-campus cohorts. As a result, we are currently overloading the terminal degree faculty by having them teach both online and on-campus sections separately. While this short-term solution is available, it is not a sustainable over time. The need for terminal degree faculty to be the instructors of the academic courses is necessary because of the requirement by the accrediting body (CAA) that academic courses in the program be taught primarily by faculty holding a terminal degree. The most cost-effective solution would be to address the physical space rather than hiring more faculty. Therefore, there is a need for a collaborative learning classroom (i.e., moveable tables/desks, tables that seat 6-8 students) that could seat 50 students while having the technology needed for online students to participate.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

We currently have one tenure-track search underway with the faculty member beginning in summer 2022 and are approved to conduct another search for a terminal degree SLP faculty member. If we are able to make these hires, we would be closer to meeting the instructional needs of the MS SLP program as well as the other degree programs within the Division of Communication Sciences and Disorders. However, it will be necessary for salaries to be competitive as well as start-up funds for research due to the shortage of professionals with SLP certification who also hold a terminal degree as defined by our accrediting body (i.e., PhD or EdD) and the recent increase in MS SLP programs being accredited across the nation. Within the SLPcurriculum, there are 14 credits of academic coursework above what is available for our current faculty to teach while also providing services within the WVU Speech, Language, and Hearing Clinic as appropriate for faculty's varying workload agreements. If both of the current faculty positions are filled,the majority of these credits as well as those not currently covered for the BS CSD program would be covered.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes

○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Enrollment in the MS SLP program has continued to grow over the past five years with a headcount of 52 students in Fall 2016 to 68 students during the Fall 2020 semester and increased again with the addition of the online MS SLP program to 83 in Fall 2021 (i.e., 70 on-campus MS SLP students and 13 online MS SLP students). Persistence to degree has been strong, ranging from 96% to 100% as well with an average time to completion of 1.6years (slightly more than 5 semesters). Based on trends at WVU and nationally, there is no reason to expect enrollment in the MS SLP program to decrease. While the time to completion may increase in the future because the online MS SLP program is an 8 semester program and the on-campus program is a 5 semester program. This difference in semesters required for degree completion is because students in the online program work full-time as SLP- Assistants in the WV schools while the on-campus students do not.Therefore, their courseload is not as high as on-campus students resulting in a longer time to complete the degree. The five-year average on number of MS SLP degrees awarded has been approximately 27 degrees annually (range = 26- 30). The number has continued to increase each year since 2018-2019 due to the increase in cohort size in 2016. It is expected that this number will continue to increase over the next few years as on-campus cohorts have increased to 35 annually since the fall of 2020 and the fall of 2021 included 13 online MS SL students.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes
◯ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes
◯ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes
◯ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Standard 5.2 describes how students were previously assessed regarding their knowledge and skills (pages 84-85). Standard 5.3 (pages 86-88)provides a description of the activities completed for ongoing program assessment and Standard 5.4 (page 89) describes the process for ongoing program improvement. The information provided within these two standards provide evidence that the MS SLP program has recently engaged in an intensive and ongoing process of evaluating the academic and clinical training practices to align with recent research on best practices in clinical education as well as assessment of student knowledge and skills so as to inform the revision of this program. The first cohort with the revised and approved MS SLP program began in fall 2021.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

The process is ongoing. On November 5, 2021, the Division of CSD faculty approved revised Program Learning Outcomes for the MS SLP program due to the inability to properly assess student learning with the previous PLOs. With these revised PLOs, clearer methods for assessment are being established and will be reviewed and enacted during the spring 2022 semester. These revised PLOs will permit the program to more effectively establish a curriculum map that identifies where PLOs are introduced, reinforced, and then mastered. The revised PLOs which will be submitted to CIM in December 2021 and are provided below. PLO1: Plan and provide services for speech, language, and swallowing disorders across the lifespan using diagnostic and treatment principles which integrate evidence-based practice as an entry-level clinician. PLO2: Develop a plan for growth in clinical knowledge and skills following, independent, systematic self-reflections to demonstrate skills for lifelong learning. PLO3: Collaborate with clients,caregivers, professionals, and other relevant stakeholders to provide clinical services which align with best practice and legislative requirements. PLO4:Effectively use oral and written communication in service to clients, stakeholders, and the profession

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
◉ No

Q8.1. What is the recommendation for this program?

- ● Continuance at the current level of activity
- ○ Continuance at the current level of activity with specific action
- ○ Continuance at a reduced level of activity
- ○ Identification of the program for further development
- ○ Development of a cooperative program
- ○ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

> M.S. Aerospace Engineering

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

- ◉ Yes
- ○ No
- ○ Not specially accredited; no national accrediting body
- ○ Not specially accredited; there is a national accrediting body

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

> The program explicitly emphasizes economic development and well-being (prosperity) through innovative technological advancements (high-impact research) and state-of-the-art (education) of highly proficient engineers who are well prepared for successful professional practice and civic outreach (leading transformation) in a global business environment (global engagement). Words in parenthesis align with WVU Mission

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> None

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

None

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

● Yes
○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

In the 5-year period Fall 2016 to Fall 2020 included, the MSAE enrollment (major code 3005) decreased with a rate of -2.4% leading to Fall 2020 enrollment of 18 students. BOG Provost data. In the same period, the Ph.D.AE (major code 3006) increased with a rate of 2.0% leading to Fall 2020 enrollment of 16 students (data: ABET Enrollment & Degree.xlsx). In the same period, MSAE program continuance increased with a rate of 8.1% leading to Fall 2020 program continuance of 100%. BOG Provost data. Program continuance is a measure of the % students who are in a particular major and return to that same major from one Fall semester to the next not counting students who graduate. These trends may reflect an emphasis of the faculty to work with Ph.D. students that could be explained by their desire to increase their numbers

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

● Yes
○ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

○ Yes
● No

Q5.3. Provide a specific critique of the program's learning outcomes.

They do not contain criteria to measure performance.

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

○ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

It appears that the evidence of assessment is mostly self-report satisfaction with the program survey and does not provide clear and measurable outcomes with hard evidence of student progress toward those outcomes. In summary, the graduates have adequate to high regard for the education they received. Survey Questions 2—4 correspond to Learning Outcome A (LO-A) that addresses "expertise". Average score = 2.5/3. Question 6 is about LO-C "communication skills". Score = 2.875/3. Question 7 is about LO-D "global and societal context". Score = 2.125/3. Questions 5 and 10 are about LO-B "research". Average score = 2.5/3. Furthermore, the students graduated in the 2016— 2021 did so with an average GPA=3.7, almost uniform for all the graduates, and absent of grade inflation over 5 years, indicating a consistent level of performance of the student as well as consistent level of expectation by the faculty. Questions 1 (specialization), 9 and 10 (path to doctoral studies) are used to learn about career paths favored by the students. Four out of eight students (50%) are intent on pursuing a Ph.D. Only one graduate mentioned his/her preferred doctoral specialty: robotics.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

Develop a more rigorous assessment plan.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes

● No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes

○ Maybe

● No

Q8.1. What is the recommendation for this program?

○ Continuance at the current level of activity

● Continuance at the current level of activity with specific action

○ Continuance at a reduced level of activity

○ Identification of the program for further development

○ Development of a cooperative program

○ Discontinuance

Q8.2. Provide an explanation of what follow up action(s) should be taken by the program, what response is expected to the Council (if any), and when. Typically reports are due at the end of the same calendar year when the program review was submitted.

Examples of reports back to the Council often may:

1) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts).
2) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data.
3) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan.
4) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan with additional interim follow-up reporting.

By December 2022, the Graduate Council requires a follow-up report that: 1) Demonstrates that the program has revised its learning outcomes and published those to CIM and Catalog; By December 2023, the Graduate Council requires a follow-up report that: 1) Demonstrates evidence of having implemented a meaningful approach to assessment of student learning.

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

MSCE - Civil Engineering

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

● Not specially accredited; no national accrediting body

○ Not specially accredited; there is a national accrediting body

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The mission of the graduate program in Civil and Environmental Engineering (CEE) is to prepare students to become competitive practicing engineers researchers and academics. This mission is consistent with WVU's mission, as a land-grant institution, to deliver high-quality education, excel in discovery and innovation, model a culture of diversity and inclusion, promote health and vitality, and build pathways for the exchange of knowledge and opportunity between the state, the nation, and the world. The vision for WVU, as one university, is to be purposeful in our studies and our work to bring needed and valued solutions to real-life problems within the pillars of education, healthcare and prosperity. The graduate program of the Department of Civil and Environmental Engineering supports the University's mission, vision and goals. In recent years the graduate program has focused on sustainable built environment and civil infrastructure contributing novel solutions to pressing worldwide efforts with developments of energy-efficient, ecologically-sound, and sustainable technologies.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program has adequate has accessible infrastructure resources. No problems regarding infrastructure were reported in the self-study.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The department lists seven full professors, seven associate professors, four assistant professors, and one research assistant professor on its catalog page, all of whom have PhDs, and several of whom have the professional PE credential. Faculty are active in research and publishing, and the program provided information on research funding awarded to its faculty. The program notes that the COVID-19 pandemic has had a negative affect on productivity, as it has delayed some projects and kept some international students from arriving on time, but faculty have applied for and been granted to extensions to projects and students have been allowed to postpone their start dates if need be.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes

◯ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The FTE enrollment remained steady over the years 2016 and 2017, but dropped by about 30% over the years 2018, 2019, and 2020. New research funding in 2016 was approximately 4.1 million, but dropped by approximately 40% in 2017 to approximately $2.3 million. As many graduate students are funded by grants, this might explain why the enrollment dropped in the subsequent year 2018. While the research funding amount was higher for 2018 and 2019, the COVID-19 pandemic may have kept enrollment numbers from fully rebounding. Based on the program's data, the enrollment for the year 2021 increased to 31 students. Overall, over the five-year review period (2016 - 2020), the program continuance presented a positive, then steady, and then positive trend. Proposed actions to increase enrollment will include increase of program visibility nationally and overseas and motivation of faculty for securing more external grants that will allow for recruiting and supporting more students in pursuit of their graduate degrees at WVU CEE. Beyond publishing research theses and problem reports, some students also have published their research findings in prestigious peer-reviewed engineering journals such as ASCE Journal of Construction Engineering and Management and Elsevier Construction and Building Materials. Some students presented their work at international or national professional conferences or meeting.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes

○ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes

○ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

○ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program has a very detailed assessment plan that clearly maps aspects of the program to student learning outcomes and program outcomes. In addition to tracking the placement/employment of graduates and the professional achievements of graduates, the program gathers and analyzes data related to admissions, student GPAs, and completion of theses and problem reports. The program also administers a well-designed exit survey and analyzes the results. The evidence collected indicates that the program is meeting stated goals reasonably well. The program has initiated efforts to form clusters of faculty members in the department together with other colleges at WVU, and even other universities in the USA and abroad; it is currently working on several innovative topics, such as sustainable advanced materials, water resources management, environmental mitigation and remediation, automated construction and infrastructure operations, rehabilitation and protection of infrastructure, transportation efficiency and urban development and population impacts. In several of these areas, the program's research has achieved international prominence, contributing greatly to attracting and graduating highly qualified students, who have been able place favorably in the job market upon graduation.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

During the evaluation period, two graduate courses, CE 517 Infrastructure Asset Management and CE 518 Construction Estimating, were added to the program course catalog. A number of CE 593 special topics courses were also offered during the evaluation period. Special topics courses, though not included in university course catalog, provided widened knowledge acquiring opportunities and offering of them is the key step of establishing new courses into program course catalog based on the learning performance and feedback. Additionally, program outcomes were fine tuned to be in consistent with the college missions and job market demands of our graduate students.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
◉ No

Q8.1. What is the recommendation for this program?

◉ Continuance at the current level of activity
○ Continuance at the current level of activity with specific action
○ Continuance at a reduced level of activity
○ Identification of the program for further development
○ Development of a cooperative program
○ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

Master of Science in Chemical Engineering (MSCHE)

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

○ Not specially accredited; no national accrediting body

◉ Not specially accredited; there is a national accrediting body

Q1.4. Is the program seeking specialized accreditation? Why or why not?

The program is not seeking accreditation with ABET. The undergraduate BSCHE program is accredited by ABET. However, the program states that accreditation at the masters level is neither needed nor desirable. Accreditation for the masters program would require meeting all criteria associated with a BS program plus the additional content requirements of an MS program. This would necessitate either requiring all entering students to have a BS degree from an ABET accredited program or replicating all of the content requirements of the BS degree into the MS degree, which is not practicable from the program's perspective. Moreover, requiring an. ABET-accredited BS degree would significantly curtail enrollment, particularly given the number of international student enrolled in the program.

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The program aligns with the university's mission by training graduates to develop engineering skills to tackle real-world challenges and problems in the management of West Virginia's traditional natural resources in natural gas, coal, oil, and biomass for the manufacture of products such as plastics, fuels, energy, pharmaceuticals. These industries are an important part of West Virginia's economy and the MSCHE program aids in workforce development for these industries.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program does not have any concerns regarding the adequacy and accessibility of infrastructure resources.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program affirms that it has adequate faculty necessary to meet the mission of the program and that there have been no significant negative effects on faculty sufficiency during the review period. In addition, the program notes that none of their faculty are qualified by other means than their academic credentials. Beyond these positive affirmations, no additional information or description of faculty adequacy, credentials, composition, and productivity was provided..

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes

○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Over the review period, program enrollment has fluctuated between 9 and 19 students. The number of students graduating per year has ranged between 1 and 6 with an average of 3. However, there were no graduates in 2020-21. The program explains that the low enrollments are due to the facts that (a) the program was designed mainly as a feeder program for the doctoral program, (b) there were considerable pre-requisite requirements for students with a bachelor's degree in a field other than chemical engineering. Low graduation number are due in part to the fact that many students transition to the PhD program without bothering to complete the masters. Changes aimed at increasing enrollments include a "4+1" option that allows WVU chemical engineering undergraduates to get a master's degree with an additional year of coursework. In addition, the program has removed additional coursework requirements for students without a bachelor's degree in chemical engineering (e.g., students in physics, chemistry and material science) that should make the program more feasible and attractive. Finally, a new marketing plan has been developed that involves targeted recruiting at chemical engineering programs in the U.S., India, China, Middle East and South America (target areas identified by WVU's Office of International Programs) and departmental open house that provide an opportunity for domestic students to interact with faculty and learn about their research.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

○ Yes

◉ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

○ Yes

◉ No

Q5.3. Provide a specific critique of the program's learning outcomes.

> There are no program learning outcomes in the catalog. There are some general program objectives for all chemical engineering masters programs but these are primarily focused on the PhD program.

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

○ Yes

◉ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program provided no information regarding an assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

There was no information provided regarding improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes

◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes

○ Maybe

◉ No

Q8.1. What is the recommendation for this program?

○ Continuance at the current level of activity

◉ Continuance at the current level of activity with specific action

○ Continuance at a reduced level of activity

○ Identification of the program for further development

○ Development of a cooperative program

○ Discontinuance

Q8.2. Provide an explanation of what follow up action(s) should be taken by the program, what response is expected to the Council (if any), and when. Typically reports are due at the end of the same calendar year when the program review was submitted.

Examples of reports back to the Council often may:

1) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts).
2) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data.
3) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan.
4) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan with additional interim follow-up reporting.

By December 2022, submit a follow-up plan to the Graduate Council that addresses: 1) What the program will do to improve enrollment, including a target enrollment it would like to achieve and a two or three-year timeline to achieve that target; 2) What the program will do to improve degree persistence and completion and to increase matriculation from the master's program to the PhD. 3) How it has revised its learning outcomes and published those to CIM and Catalog. By December of 2023 and 2024, submit a follow-up report on the effects those efforts explained above have had on enrollment, degree persistence, and completion. By December of 2023, submit a follow-up report that demonstrates evidence of having implemented a meaningful approach to assessment of student learning.

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

> Master of Science, Engineering (MSE)

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

○ Not specially accredited; no national accrediting body

◉ Not specially accredited; there is a national accrediting body

Q1.4. Is the program seeking specialized accreditation? Why or why not?

> The accrediting body (ABET) does accredit masters level programs, but it is not desirable or appropriate for the MSE program at WVU. It would create undue burden on the faculty and staff, and employers do not require or seek graduates of an ABET-accredited master's degree for employment. ABET- accredited engineering masters degrees must meet all of the requirements of an ABET-accredited bachelors program, plus advanced requirements appropriate to the graduate program; the undergraduate requirement can be met by requiring an ABET-accredited undergraduate engineering degree for admission, but that would prevent students with a STEM bachelors degree from the program, and would severely limit the number of international students who could enter the degree program. Since all of the undergraduate programs in the Statler College are accredited or are under initial accreditation review by ABET, all the departments in the college have a rigorous program of assessment, evaluation, and improvement. It is not common for US-based universities to seek accreditation from ABET at the MS level if they have programs accredited at the undergraduate level.

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

> The program provides the WVU missions statement and provides a statement for the MSE program. The Master of Science in Engineering provides students with advanced knowledge in engineering and technology that support the economic and developmental needs of West Virginia. Students learn to address complex problems with significant solutions. As a non- departmental program, the MSE leverages resources, allows innovation, and allows students to build a unique portfolio so that they can serve the state and world. This supports the mission, vision, and values of the university.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program reports no significant issues with infrastructure resources.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program does not report any issues regarding faculty adequacy, credentials, composition for productivity.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes
◯ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program enrollment is small, ranging from 2-4 students per year and reports consistent graduation rates. There are no high D/F/W courses in the program. Three of the four students completed a post-graduation survey. One domestic student was employed. Another domestic student was interviewing for a position in industry. An international student reported searching and interviewing for employment. One of the students reported a 3 of 5 for their experience with research advising, indicating that mentoring and advising have an opportunity to improve.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes

◯ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes

◯ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

◯ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program reports that the assessment of performance in the MSE is not tracked separately, and is included in the respective program Master of Science BOG reports. Only the program of study was offered as an assessment plan.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

> The program reports modifying the philosophy of the MSE program during this cycle to include the possibility of using it as a framework for potential new programs. In 2021, new courses were identified that could be used for a degree in Engineering Management, based on the American Society for Engineering Management's Guide to the Engineering Management Body of Knowledge. Statler College has submitted an Intent to Plan for an MS in Engineering Management. The program reports that this approach may be repeated to design potential programs in Environmental Engineering and Engineering Education.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
◉ No

Q7.4. This program meets the Program of Excellence criteria for "distinction" as follows:

> N/A

Q7.5. This program meets the Program of Excellence criteria for "faculty" as follows:

> N/A

Q7.6. This program meets the Program of Excellence criteria for "graduates" as follows:

Q7.7. This program meets the Program of Excellence criteria for "curriculum and assessment" as follows:

N/A

Q8.1. What is the recommendation for this program?

- ⦿ Continuance at the current level of activity
- ○ Continuance at the current level of activity with specific action
- ○ Continuance at a reduced level of activity
- ○ Identification of the program for further development
- ○ Development of a cooperative program
- ○ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

MSEE Electrical Engineering

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

○ Not specially accredited; no national accrediting body

◉ Not specially accredited; there is a national accrediting body

Q1.4. Is the program seeking specialized accreditation? Why or why not?

Although the program could receive accreditation, reporter states that doing so "would severely limit the number of students who could enter the program, create undue burden on the faculty and staff, and employers do not require or seek graduates of an ABET-accredited master's degreefor employment. ABET accreditation for a masters level program requires that all of the criteria of a BS program be met, plus the additional expectations of the advanced level for an MS program. Programs have two options to meet these requirements...Since the majority of our graduate students in the college and program are international, we would likely see enrollments tumble to below 50% of current levels if we required an ABET-accredited BSEE degree. This would have a significant negative impact on the program." Accreditation would also be burdensome and counterproductive to the program, as it would require an overhaul and detract from an important source of enrollment for foreign students who won't have the specific course requirements that an accredited master's program would entail.

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The program aligns with the mission, vision and values of WVU. As the report notes: "Students of this degree program take challenging coursework in Signal Processing, Power Systems, Communications, Control, and Electronics, which produces graduates with the necessary skill set to be competitive in today's economy. They conduct and publish original scholarly research. With research that includes medical informatics and biometrics, graduate of the program promote the well-being of citizens around the state. The Master of Science in Electrical Engineering program has conducted research for West Virginia-based organizations and has resulted in the development of patents and intellectual properties that have formed the basis of startup companies."

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program reports no resource issues.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program checked the box "yes" for "adequate faculty" but also reports some information about negative effects of Covid on faculty productivity, although it does not otherwise provide information about this issue: "Year 2020 started with few COVID-19 cases. New York hospitals were overwhelmed with COVID-19 patients by late spring 2020 and the stock market was falling rapidly. There was a lot of fear about this virus in the population in US and other countries. WVU switched all classes online after Spring break. All faculty members were learning eCampus and zoom. New ways of teaching labs were planned. It had significant negative effects on faculty's productivity in research."

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes
○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Reports no D/F/W issues. However, program does report decrease in graduate enrollment in Fall 2017 over 2016, citing several factors: "Our MSEE enrollment has been affected by US immigration policies, more job opportunities and better salaries in India, better job opportunities and salaries for US students with a BSEE degree, and preference given to PhD students for GTA and GRA positions. We are admitting students from different countries and diversifying our application pool. The new policy will strengthen the PhD program and raise the visibility of Lane Department. We should avoid lowering our standards of admission to raise the number of students in MSEE program. WVU has offered some fellowships for PhDProgram. We should have fellowships for US students for MSEE program." In terms of the numbers: "33 students graduated in Fall 2016 and 15 students graduated in Fall 2017. It has stabilized at 7 students graduating per year. Time to completion has increased from 2.18 years to 4.03 years. Students accept the employment before finishing their degrees due to a strong job market and continue working on their research. Statler College has taken a notice of increase in completion time." The report adds that they are attempting to fix this problem: "We are diversifying our graduate students in MS program. We have seen modest improvement in enrollment for Fall 19 and Fall 20. We have also submitted combined BSEE/MSEE five year program to Statler College."

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes

◯ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes

◯ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

◯ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The major issue is low enrollment and longer time to completion: the program has declined from 60 to 25 since 2016, and is graduating students in the single digits for the last four years. The program has proposed two solutions: (1) diversifying their graduate students (currently most come from India and that poses recruitment challenges because of immigration issues but also because the job market is attractive in India); and (2) A new streamlined BS/MS in EE (5-year program), which is designed to recruit more WVU undergrads: "This combined program will provide incentive for WVU students to complete MSEE degree. MSEE program offers Thesis, Problem report, and coursework option. Students are required to take 11 courses and 1 hour of graduate seminar. We will look at other regional universities requirement for number of hours for MSEE degree with coursework option." It is difficult to know how successful either of these solutions will be. It seems unlikely the program will see enrollments as high as 60 again, but it is hard to say. There is a modest upward trend in enrollment and graduation rates over the last couple of years, but even if successful, it could take several years for their 5- year program or other outreach and talent-pool diversification to show up in enrollment numbers.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

At the moment, the major issue seems to be decline in enrollment. The program has offered several possible fixes for this, including talent-pool diversification and a streamlined 5-year program designed to recruit more WVU students.We should know within a few years whether these initiatives will bear fruit. However, it seems unlikely that prior high enrollments will be reached any time soon. I would encourage close monitoring of the situation over the next several years to ensure that the program remains viable and to see whether other kinds of remedial action may be necessary in the interim.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
⦿ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
⦿ No

Q8.1. What is the recommendation for this program?

○ Continuance at the current level of activity

◉ Continuance at the current level of activity with specific action

○ Continuance at a reduced level of activity

○ Identification of the program for further development

○ Development of a cooperative program

○ Discontinuance

Q8.2. Provide an explanation of what follow up action(s) should be taken by the program, what response is expected to the Council (if any), and when. Typically reports are due at the end of the same calendar year when the program review was submitted.

Examples of reports back to the Council often may:

1) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts).
2) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data.
3) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan.
4) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan with additional interim follow-up reporting.

The Graduate Council requires that: 1) By December 2022, the program submit a follow-up report detailing efforts to improve its enrollment and a target enrollment to be reached by fall 2025. 2) In December of 2023, 2024, and 2025, submit a follow-up report providing data on how enrollment in the program has been effected by those efforts.

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

MS in Energy Systems Engineering

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

○ Not specially accredited; no national accrediting body

● Not specially accredited; there is a national accrediting body

Q1.4. Is the program seeking specialized accreditation? Why or why not?

No, the MSESE is not seeking accreditation through the ABET. The stated reason is that ABET requires that all the criteria of a BS program be met in addition to the criteria of the MS. In their opinion, this would reduce enrollment as well as place undue work on the faculty to substantially revise the curriculum. The reasoning provided by the department to not seek accreditation seems logical.

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The program provides a statement that details how they are consistent with WVU's mission, values and vision. A program specific mission statement is also provided.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program reports no significant issues during the review period. Based on the responses, the program feels they have the adequate faculty and infrastructure resources to deliver the program to its students in a timely manner.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program reports that they have: adequate faculty necessary to meet the mission of the program; there have been no issues during the review period that had significant negative effects on faculty's abilities or productivity.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

- ⦿ Yes
- ○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> During the review period, enrollment dropped 20.6%/year, leading to 1 student enrolled in Fall 2020. Although only 1 student is concerning, the report describes the possible reasons for this decline (the Covid19 pandemic likely contributed to this decline). During the review period, graduation dropped by 18.2%/year, and the time to degree increased 7.4%/year. Reasons for these trends include the fact that the targeted audience of the program did not seem to materialize. This led to a revision of the original structure of the program to include alternative options to the problem-report structure, including coursework only option and a thesis option. The faculty feel these additional modalities will have a positive impact on their ability to recruit new students into the program. There were no high D/F/W courses in the program's portfolio. The report includes an Excel sheet that lists student graduation GPAs. In addition, 9 out of 11 graduates of the program had a job start immediately after graduation.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes

◯ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes

◯ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

◯ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The report currently lacks an assessment plan or evidence of assessment of tis students/graduates. There is an Excel sheet included that lists how many students have graduated, and the GPA at the time of graduation. It is suggested that the program develop an assessment tool and/or exit survey to be delivered to their graduates, which can be used to acquire data on the program.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

> The program was originally conceived as a problem-report only program. The coursework and thesis options were added during the current review period. The thesis option was added to specifically address the greater than expected number of students that could not complete their degrees without financial support. The program notes that research funding was not sufficient to support a large number of students. The report includes a curriculum map for the original problem-based modality; however, there are no curriculum maps included for the new coursework only option or the thesis option.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes

◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes

○ Maybe

◉ No

Q8.1. What is the recommendation for this program?

○ Continuance at the current level of activity

○ Continuance at the current level of activity with specific action

○ Continuance at a reduced level of activity

◉ Identification of the program for further development

○ Development of a cooperative program

○ Discontinuance

Q8.3. Provide an explanation of what follow up action(s) should be taken by the program, what response is expected to the Council (if any), and when.

The Graduate Council recommends that either: 1) The MS in Energy Systems Engineering be discontinued, or, Submit a follow-up report by December 2022 that demonstrates that: 2) The program is assigned dedicated faculty, 3) The program is assigned to a permanent departmental home in the Statler College, 4) There is a target enrollment for the program to achieve by fall 2025; follow-up reports each December between now and fall 2025 detailing what improvement there has been to program enrollment, 5) The program has revised its student learning outcomes in CIM and Catalog, By December 2023, submit a follow-up report that: 1) Shows evidence of having implemented a meaningful approach to assessment of student learning.

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

MSIE Industrial Engineering

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

○ Not specially accredited; no national accrediting body

● Not specially accredited; there is a national accrediting body

Q1.4. Is the program seeking specialized accreditation? Why or why not?

It is not seeking specialized accreditation, and provided the following explanation: "The undergraduate Bachelor of Science in Industrial Engineering (BSIE) program is accredited by ABET. This is an indicator that we employ an accredited quality improvement process in the department. ABET does accredit masters level programs, but it is not desirable or appropriate for the MSIE program at WVU. It would severely limit the number of students who could enter the program, create undue burden on the faculty and staff, and employers do not require or seek graduates of an ABET-accredited master's degree for employment. ABET accreditation for a masters level program requires that all of the criteria of a BS program be met, plus the additional expectations of the advanced level for an MS program. Programs have two options to meet these requirements. First, entering students could be required to have an ABET-accredited bachelor's degree, thus ensuring that the BS-level criteria have been met. Second, the program could replicate all of the criteria present in an undergraduate program at the masters level. Since the majority of our graduate students in the college and program are international, we would likely see enrollments tumble to below 50% of current levels if we required an ABET-accredited BS degree. This would have a significant negative impact on the program."

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The MSIE aligns with the mission of WVU through its advanced engineering programs, which "provides training on diverse engineering topics including but not limited to manufacturing, production planning and control, supply chain and optimization and ergonomics," which is relevant to the growth and management of business enterprises and organizations in diverse fields such as "healthcare, finance, manufacturing, transportation, construction, retail, government." Students "conduct innovative research, which typically involves testing a hypothesis by using experimental control, data collection and analysis, systems/computer model development and validation," which is published and/or disseminated "in peer-reviewed publications and/or international conferences."

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program does not report any issues with adequate infrastructure.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program did not complete this section of the survey, although they checked the boxes indicating that they believe they have adequate faculty and that they have nothing negative in that regard to report. Moreover, the program has recently hired two faculty members and is in the process of hiring three more.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

- ● Yes
- ○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Program reports that its IENG 542 core course is a high DFW class. The program explains this by pointing to students with "varied backgrounds – many come from non-industrial engineering disciplines such as mechanical engineering, petroleum engineering, electrical engineering, etc..It is important to
note that one of the semesters with relatively high numbers of DFW for IENG 542 was spring 2020. This is the semester when the mode of instruction and testing was changed abruptly due to COVID-19. The student performance in IENG 542 improved in spring 2021. If the DFW trend in IENG 542 continues in the future then in addition to IENG 350, IENG 343 (undergraduate level Production Planning and Control) will be added as a pre-requisite for IENG 542."
In the last few years, it has enrolled 20-25 students and has between 7-12 graduates per year, with an average time to complete the program of roughly two years. The program reports that "A general trend in the graduation data is upward. The number of graduates has improved from 3 in 2016- 17 to an average of 10 students per year in the past four years. The average time to completion over the past cycle is around 1.8 years, which is slightly lower than a typical duration of 2 years for an MS degree." Program also reports high levels of student success in awards and good employment after graduation.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes

◯ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes

◯ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

◯ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program has an assessment plan and provided evidence via student exit surveys of the program. Students generally gave the program high marks, but had some suggestions for improvement, for example in the area of faculty development. The program noted that it has recently hired two new professors in operations research and that they currently have three ongoing faculty searches. The program also added several new courses in response to student demand and also modified the program in response to student requests for more early opportunities for research. In regards to other improvements, the report notes: "The IMSE Department moved to the Engineering Sciences Building (ESB) in 2016. This move allowed the department to significantly (more than tripled) increase its student laboratory space. A dedicated graduate student lab with over 30 workstations was added to the departmental facilities. Many MSIE students also have their workstations in the research labs – Industrial Ergonomics lab, Smart Manufacturing lab, Additive manufacturing lab, Industrial Assessment Center. In order to keep the computing facilities up to date, the IMSE department has a 4-year computer regeneration plan in place. Under this plan, every year 10-12 new computers are purchased and/or replaced."

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

As mentioned, the report notes planned upgrades to technology underway, new faculty hires and changes to its program offerings in response to student demand.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
◉ No

Q8.1. What is the recommendation for this program?

- ⦿ Continuance at the current level of activity
- ◯ Continuance at the current level of activity with specific action
- ◯ Continuance at a reduced level of activity
- ◯ Identification of the program for further development
- ◯ Development of a cooperative program
- ◯ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

> MS Mechanical Engineering (MSME)

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

○ Not specially accredited; no national accrediting body

⦿ Not specially accredited; there is a national accrediting body

Q1.4. Is the program seeking specialized accreditation? Why or why not?

> The MSME program is not seeking accreditation due to the following: 1) enrollment limitations on the number of students in the program; especially since a majority of the students are international; 2) burden on the faculty by negatively impacting faculty productivity; 3) ABET accreditation on the masters level is not required for employment; and 4) having accreditation would involve a significant overhaul and redesign of the MS program and additional coursework for students without an ABET-accredited BS degree.

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

> The MSME degree program is consistent with mission of the Department of Mechanical and Aerospace Engineering which in turn is consistent with the mission, vision and values of WVU, explicitly emphasizing economic development and well-being (prosperity) through innovative technological advancements (high-impact research) and state-of-the-art (education) of highly proficient engineers who are well prepared for successful professional practice and civic outreach (leading transformation) in a global business environment (global engagement).

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> Based on the no responses to the questions, the program has adequate and accessible infrastructure resources.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> Based on the responses, the MSME program has: 1) adequate faculty and composition necessary to meet the mission of the program; 2) do not have any faculty who are qualified by other means than their academic credentials; and 3) has not experienced a negative effect on the faculty's ability to be productive in terms of teaching, research, and service.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes
○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Student enrollment trends, number of graduates and time to completion throughout the 5-year period (2016-2020) tended to decrease based on the number that graduate, change majors or leave the program. This is attributed to the:1) strong job market in mechanical engineering as a strong market leads to low enrollment and graduations; and 2) an increase in time to completion. Because of the increase in time to completion the program will monitor and evaluate issues that might be delaying the student's progress (not known if the issue adequately resolved as appears still in progress). No DFW courses were identified. Despite the decrease in enrollment, number of graduates and increase in time to completion, student success has been quite notable in this 5-year period for combined MSAE, MSME and MSMSE with 14 Awards, 15 Fellowships, 1 Research Grant, 3 Internships, 2 Scholarships, and 5 Recognitions of excellence, all from external entities.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes

◯ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes

◯ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

◯ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The assessment plan appears to be based on the attainment of learning objectives via coursework assessment based on GPA and research theses success by the AEC committee as direct means. The indirect comes from an exit questionnaire upon graduation based on confidence levels related to the learning outcomes. Despite the 33% return rate of the questionnaire, confidence is adequate to high for learning objectives, coursework expertise and research skills, with an increase in those intent on pursuing a PhD (48%). Coursework GPA is high (3.72) indicating a consistent level of performance and faculty expectations. Improvement related to assessment was the addition of 500 level courses to modernize the course offerings and to allow the most promising Senior students to take courses for graduate credit. This helped with recruiting efforts for those students to remain at WVU and pursue a MSME degree.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

No information was provided (N/A was the response). A recommendation would be to continue to monitor why completion rates for the MSME program have increased.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes

◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes

○ Maybe

○ No

Q8.1. What is the recommendation for this program?

◉ Continuance at the current level of activity

○ Continuance at the current level of activity with specific action

○ Continuance at a reduced level of activity

○ Identification of the program for further development

○ Development of a cooperative program

○ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

MSMINE

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

○ Not specially accredited; no national accrediting body

◉ Not specially accredited; there is a national accrediting body

Q1.4. Is the program seeking specialized accreditation? Why or why not?

While the BS is accredited by ABET, the program is not seeking accreditation from ABET for the MS program. The justification is sound. An ABET MS seeking student must either have an ABET-accredited BS degree or the program can replicate BS criteria at the MS level. Employers do not seek nor favor those graduating with an ABET-accredited MS degree. The burdens on student (hold an ABET BS) and faculty/program (offer modified curriculum) make this unattractive. The program could collect evidence from peer institutions/programs to further support their justification if necessary.

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The department and program are aligned with WVU's mission, vision, and values. The department provides education, research, and service experiences that are inclusive and promote diversity. Their endowment is used to off-set educational costs for many first-generation and working college students. The department trains its students to support the state and federal mining activities including but not limited to health, safety, and coal utilization.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program does not report inadequacies or ongoing issues related to infrastructure resources.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program believes they have adequate faculty for their research, teaching, and service mission. All faculty qualify based on standard University approved academic credentials. The program cites several factors that have impacted student enrollment: COVID and negative public perceptions of mining. The program implies that they are now focused on international recruiting as a means to address the latter issue. It is not clear how faculty productivity has been impacted either positively or negatively during the past 5-years.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes

○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program has maintained consistent enrollment (6-8 students) and program continuence (75-100%) over the past 5-years. The MS time-to- completion was around 2-years from 2016-2020 although the past year saw a 2-fold time increase. This outlying data point should be reevaluated in future years to ensure negative trends are addressed in a timely manner. The program notes no problematic high D/F/W courses. The program notes that students have received recognition for meritorious research and scholarship from internal and external sources with nine specific awards/scholarships identified for academic years 2020 and 2021. Many MS graduates transition to the PhD program as well as gain employment in public and private entities. There are no quantitative measures showing levels of post-degree academic continuation (PhD) or employment presented.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes

○ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

○ Yes

◉ No

Q5.3. Provide a specific critique of the program's learning outcomes.

It is not clear to me why there are 10 well-articulated, specific outcomes for the MINE PhD program but only 2 rather general outcomes for the MINE MS program.

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

○ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The program does not have a formal assessment process and relies on individualized faculty/student advisement and mentoring to achieve program LOs. Additionally the program does not have a curriculum map. This is generally fine for a graduate program that caters to individualized student career objectives. Other than the general response regarding student outcomes, however, no other assessment findings are presented. The program should consider ways to assess formatively (eg., yearly student/committee meetings or yearly survey of student achievement) and summatively (eg., exit interview and post-MS career tracking).

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

> The program has diversified their curriculum and research to meet the needs of the domestic/international labor market. They have also sought to expand collaborative research across the Statler college and externally to increase career-specific student training opportunities. They plan to continue these efforts into the future while carefully tracking the short-term and long-term projected labor markets.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
● No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
● No

Q8.1. What is the recommendation for this program?

○ Continuance at the current level of activity
● Continuance at the current level of activity with specific action
○ Continuance at a reduced level of activity
○ Identification of the program for further development
○ Development of a cooperative program
○ Discontinuance

Q8.2. Provide an explanation of what follow up action(s) should be taken by the program, what response is expected to the Council (if any), and when. Typically reports are due at the end of the same calendar year when the program review was submitted.

Examples of reports back to the Council often may:

1) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts).
2) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data.
3) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan.
4) Ask the program to resubmit any section of weakness from the program review (entire sections or particular prompts) with additional supporting evidence and/or data as well as a comprehensive action plan with additional interim follow-up reporting.

> The Graduate Council requires that: 1) the program follow-up with a report due by December 2023 that documents the progress it has made to designing and implementing a more systematic and meaningful approach to assessment of student learning.

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

M.S. Material Science and Engineering

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

○ Not specially accredited; no national accrediting body

● Not specially accredited; there is a national accrediting body

Q1.4. Is the program seeking specialized accreditation? Why or why not?

The program does not plan to seek accreditation from ABET citing that students who apply to the Master's level program would need to have graduated from a ABET accredited Bachelor's program. Most of the program's current students hold a Bachelor's from international schools and would not be eligible for admission into this program. Thus, may deter applications and limit enrollment.

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

The program seems to be aligned with the mission, vision, and values of WVU.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

No problems noted in this department.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

No information was provided in the self-study related to Faculty Credentials, Composition, and Productivity. It could be that this was not provided because no additional faculty were required for this specific program and this information was provided elsewhere. However, this reviewer would like to see a brief summary in future reviews of the faculty teaching in each program.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

○ Yes
● No

Q4.2. What was inaccurate?

The current requirements are not loaded to the 2021-22 catalog. However the program plans to have them published in the 2022-23 catalog. Program elements accurately published on the webpage. The web page includes enrollment requirements, requirements for majors and areas of emphasis, and provides a suggested plan of study.

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The program has low student enrollment for fall 16- fall 20 are 5,5,2,4, and 7 respectively. Program continuance is stable and time to completion averages 2 years. The program reports no courses with High DFW. The program plans to recruit BS-MS&E graduates from the 13 universities in our region that offer a BS-MS&E degree to increase enrollment.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes
○
   No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes
○
   No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes
○
   No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The Department assesses the level of attainment of the Learning Outcomes (LO) by MS-MS&E students by assessing the learning outcomes both in their coursework and in their research theses, as well as by responses to questionnaires from students graduated during the period of review.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

The program has simplified the 9 learning outcomes into 4 learning outcomes that addres expertise, research, communication skills, and global and societal context. They are using from course work in addition to responses to questionnaires from graduates of the program. The assessment of graduates includes publications, path to doctoral studies, advanced career path, and employment.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
◉ No

Q8.1. What is the recommendation for this program?

◉ Continuance at the current level of activity
○ Continuance at the current level of activity with specific action
○ Continuance at a reduced level of activity
○ Identification of the program for further development
○ Development of a cooperative program
○ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

M.S. in Petroleum and Natural Gas Engineering

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

○ Not specially accredited; no national accrediting body

◉ Not specially accredited; there is a national accrediting body

Q1.4. Is the program seeking specialized accreditation? Why or why not?

No. The undergraduate PNGE program is accredited by ABET. This is an indicator that we employ an accredited quality improvement process in the department. ABET does accredit masters level programs, but it is not desirable or appropriate for the MSPNGE program at WVU. It would severely limit the number of students who could enter the program, create undue burden on the faculty and staff, and employers do not require or seek graduates of an ABET-accredited master's degree for employment. Further details are provided in the report and are deemed sufficient.

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

MSPNGE is the only program of its kind in West Virginia. The Department of Petroleum and Natural Gas Engineering (PNGE) continuously aims to align itself with the mission of WVU; to deliver high-quality education, excel in discovery and innovation, model a culture of diversity and inclusion, and build pathways for the exchange of knowledge and opportunity between the state, the nation, and the world. It does so by furnishing the oil and gas industry with a cadre of highly qualified petroleum engineers, and by discovering and developing new techniques and processes for the efficient and economical extraction of oil and gas resources consistent with human health, ethics, safety, and environmental needs; by giving professional advice and by providing technical assistance to West Virginia's industry professionals, government entities, and citizens in matters concerning the extraction and field processing of petroleum and natural gas; and by disseminating scholarly and technical knowledge through publications, presentation, seminars, and short courses relevant to the needs of West Virginia and the industry worldwide.

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> In short, yes. The program appears well funded, supported by productive faculty, excellent research labs and facilities, and monetary support from industry.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

> The PNGE undergraduate program experienced a high influx of students in 2015-2017 causing the undergraduate enrollment to exceed beyond our capacity for a number of years and drained our resources. The total number of faculty during that period consisted of five or six including new faculty members, who had limited teaching load for the first three years of their contract. Furthermore, two of the faculty have been on approved family and medical leaves recently. Finally, COVID-19 pandemic changed everything. The strain on the department, caused by all these factors, affected the faculty workload as well as the research productivity. The PNGE undergraduate program enrollment has declined from its peak in 2015 and now it is closer to our actual capacity. Furthermore, the impact of the COVID-19 has been mitigated to a large extent. Consequently, it is the expectation that the faculty productivity will improve.

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes

○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The ratio of the number of graduates to enrollment varies from 0.33 to 0.57 and on average it is 0.43 for the past five years. The "Time to Completion" varies from 1.55 to 3.75 years and on average it is 2.27 years for the past five years. It should be noted that the number of graduates as well as the "Time to completion" for AY 17-18 are higher than the expected ranges. This was caused by working engineers/professionals who were part-time students in the program. Additionally, some of students admitted to the MS program did not have a degree in Petroleum & Natural Gas Engineering and were required to take prerequisite courses to complete their MS degree. If we exclude AY 17-18 statistics, the averages drop to 0.39 and 1.9 years.
These numbers are well within the expected ranges for the program.

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes
○ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes
○ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes
○ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

The Department has been through considerable downturn in enrollment in the last 3-4 years which is well articulated and explained in the an attached Academic Transformation Report and the Graduate Programs Assessment Report. Reasons for lower than usual enrollment are explained with; 1) Departmental changes (including faculty faculty/medical leaves), 2) Cyclical interest in programs of this kind that follows the mood in society oil and natural gas, 3) COVID and associated problems related to VISAs for many of the department's foreign students, and 4) enrollment decline being similar to the trends experienced by similar departments in other universities. The two reports do provide adequate plans moving forward many which include environmental adjustments beyond the Department (e.g., COVID19), increased interest in programs of this nature, and a more manageable size of undergraduate student body.

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

The Program Review provides adequate insight into the MS Program in Petroleum and Natural Gas Engineering provided by the Statler College of Engineering and Mineral Resources. This is a small department encompassing 6 faculty and is only 1 of 4 such programs in the country, and the only one in WV. Given the small number of faculty, variation in undergraduate enrollment and a renewed focus on PhD level recruitment, the challenges with recruitment into the program outlined in the report appear well documented and articulated. Plans for improvement moving forward are also clear and well taken.

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes
◉ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes
○ Maybe
◉ No

Q8.1. What is the recommendation for this program?

- ◉ Continuance at the current level of activity
- ◯ Continuance at the current level of activity with specific action
- ◯ Continuance at a reduced level of activity
- ◯ Identification of the program for further development
- ◯ Development of a cooperative program
- ◯ Discontinuance

Q1.1. Program Designation and Name (such as: B.A. in English or M.S. in Forensic Science)

Software Engineering (MSSE)

Q1.2. If the program is specially accredited, is it in good standing with its accrediting body?

○ Yes

○ No

○ Not specially accredited; no national accrediting body

◉ Not specially accredited; there is a national accrediting body

Q1.4. Is the program seeking specialized accreditation? Why or why not?

I could. not find any documentation in the program's self study; however, I also reviewed the MS program in Industrial Engineering, and their rational was that the undergrad program in Industrial Engineering was accredited and many of the same standards applied to the grad program, so they elected not to put it up for accreditation. I suspect the same might be true for Software Engineering since it's in the same College.

Q1.5. Provide a brief explanation of how the program is aligns with WVU's mission, vision, and values.

If the program has been out alignment with the mission, vision, or values, provide a judgment on whether or not the program is taking adequate action(s) to return to alignment with the mission and/or values.

All seems in order concerning the program's mission. An interesting sample from their self-study: "Delivery of high-quality education - The program delivers distance education to working professionals in the software industry proven by our rankings. The 2022 Master's Programs Guide ranks the MSSE Program 2nd in the Top 10 Most Affordable Online Master's in SE. The 2022 Intelligent.com Best Online SE Degree Programs ranks the program 3rd in the nation."

Q2.1. Briefly explain if the program has adequate and accessible infrastructure resources.

If the program has had issues in this area, briefly explain those issues, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

No problems noted in this department. All seems in excellent shape.

Q3.1. Provide a brief summary of faculty adequacy, credentials, composition, and productivity.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Faculty seems in excellent shape. Especially impressive were this entry in the self study: "Jeffrey T. Edgell, is VP and CTS at TMC Technologies of Fairmont with over 30 years of progressive experience in software engineering and instructor for the SENG 550 Object Oriented Design course. - BS in Computer Science from WV Wesleyan College - MS from Stevens Institute of Technology -Post graduate studies in Computer Science at Deakin University - Taught classes at WVU, WVWC, and CMU - Speaker for: - The Group of Seven (G7) at The Hague Netherlands - South Korean Ministry of Defense - Australian Ministry of Defense - Navy Logistics Integration Conference. Kenneth Costello, MSSE is Senior Engineer, Engineering Services Group Lead for NASA IV&V Facility with over 25 years of progressive experience and instructor for SENG 530 Verification and Validation. Worked on NASA flight software covering: - the space shuttle - the International Space Station -Rover missions to Mars - Low Earth orbiting systems - Deep space systems - Trusted autonomy seminar lead His focus is on verification and validation of mission and safety critical software and participates, as past vice- chairman, in the IEEE Working Groups for the Standard for Verification andValidation of Systems." Excellent credentials!

Q4.1. Are program elements accurately published in the Catalog and other web-based resources? This includes program enrollment requirements, expected time to completion, requirements for majors and areas of emphasis, etc.

◉ Yes

○ No

Q4.3. Provide a brief summary of student enrollment trends, number of graduates, time to completion, high D/F/W courses, and student success (creative or research endeavors, presentations, publications, grants or scholarships, recordings, exhibitions, performances, etc.)

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Enrollment is steady and consistent. From the self study: "The program headcount for Fall 2016 – Fall 2020 are 45, 41, 40, 47, and 35, respectively. These represent a relatively consistent enrollment over this past reporting period. Fall 2020 was in the middle of the current global pandemic which impacted the learners and prospective learners' financial statusas well as other aspects mentioned later. The program continuance for Fall 2015-16 through Fall 2019-20 are 85.20%, 85.20%, 71.00%, 86.70%, and 75.90%, respectively." In terms of graduation: "The program graduates by Academic Year starting with AY 2016-17 are 18,10, 11, 19, and 13, respectively. The graduation cycle is consistent with the three-year cycle found in the program enrollment data. This program indicator is consistent with the program enrollment patterns and part-time learner patterns of completing the program every 2½ - 3 years. The program learners are already working full-time in the software engineering industry while pursing the MSSE degree. Therefore, post-graduate placement does not have the typical meaning for the program graduates. Based on the 2017 AlumniSurvey, over 89% of the program Alumni had senior technical level positions or higher. The program faculty receive SEIs each time they teach a class.The program annual response rate from learners for 2017 – 2020 is 57%, 58%, 63%, and 64%, respectively."

Q5.1. Are the program's learning outcomes accurately published in the Catalog?

◉ Yes

◯ No

Q5.2. Are the program's learning outcomes appropriate to the degree level and type, reasonable in number, and clear and measurable?

◉ Yes

◯ No

Q5.4. Generally speaking, do the program's learning outcomes ensure students collect, analyze, and communicate information, master modes of inquiry or creative work, and develop skills that are adaptable beyond the program?

◉ Yes

◯ No

Q5.5. Provide a brief summary of the program's assessment plan, evidence of assessment, relevant assessment findings from this cycle, and program change and/or improvement related to assessment.

If the program has had issues in any of these areas, briefly explain the issues the program has had in this area, what steps have been taken to address those issues, and provide a judgment on whether the issues have been adequately resolved.

Comprehensive assessment plan. It includes a survey for alumni as well as recent grads to assess, among other thing, whether they've received employment and how well their coursework has prepared them for the job market. A sample from their self study: "In the program's 2017 alumni survey (Attachment 1), 83% of the respondents stated they received a salary increase after graduation, 61% stated they received a higher position, and 72% were given extra responsibilities. 61% were in a junior technical position prior to graduation and now 89% of respondents are in a senior technical or management position with 6% of those at an executive level position. 56% of the respondents received over a10% increase after completing the program and 22% of those received over a 20% increase with 89% currently making a salary over $80,000 per year."

Q6.1. Provide a brief summary of improvements made to the program over this review cycle and what plans the program has initiated for future improvements.

If the Council would like to provide recommendations to the program for areas of future improvement, include those here.

Improvements/changes include: "As a result of the program assessments, we have: 1) Improved most of the program courses to include a standardized program template that aligns to the QM standards and assists instructors in creating their course within eCampus framework. - Evidence: Template available in e-Campus that aligns to QM standards. 2) Improved linkage between course and module objectives and assessments making it clearer how the learners assessments align to the course objectives that ultimately align to the overall program learning outcomes. - Evidence: Graduate Exit Interviews made during the program transition period. One example, some learners stated they noticed the improvements in courses by standardizing. 2) Consolidated learner/instructor interaction into eCampus instead of across e-mails, etc., learners would turn in most assignments via e-mail but now do so within eCampus. - Evidence: Graduate Exit Interviews included statements from learners that they appreciated having all of the assignments and grades in one location. 3) Improved feedback to learners on a timely basis. - Evidence: Within each eCampus course, dates are provided when assignments are graded and can be graded directly within the Learning Management System (LMS) by each instructor making it easier."

Q7.1. Is the program seeking the Program of Excellence distinction?

○ Yes

⦿ No

Q7.2. Do you believe the program should be awarded the Program of Excellence distinction?

○ Yes

○ Maybe

● No

Q8.1. What is the recommendation for this program?

● Continuance at the current level of activity

○ Continuance at the current level of activity with specific action

○ Continuance at a reduced level of activity

○ Identification of the program for further development

○ Development of a cooperative program

○ Discontinuance