

Industrial Process Operator - Associate of Applied Science

Current Compliance Year: 2023-2024

Mid-Cycle Review

Recent Recommendations

Feedback will include recommendations from the last Expedited Review or from your most recent review by your school or college. You may not see any feedback or recommendations until you have completed your first full or mid-cycle review.

Response to Previous Recommendations (if any):

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Student Learning Outcomes

The previous Student Learning Outcomes Assessment has been submitted as its own report. Going forward you will use the following prompts to discuss the success of your most recent SLOA plan and address your assessment activities since your last SLOA report (typically the past two years or since your last program review).

Learning outcomes feedback from last review:

Feedback will be provided once you have completed a full or mid-cycle review.

Discuss your SLOA findings, changes you are making and what you hope to see as a result:

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| <ul style="list-style-type: none">1) Summary of Learning Outcomes discussion<ul style="list-style-type: none">a) SLOA 1: Safety Awareness<ul style="list-style-type: none">i) Test results show that student learning outcomes were met in safety awareness areas. Material is adequately covered. We performed safety awareness skills evaluations in both an introductory course, and a capstone course. Results above 75% target.b) SLOA 2: Operating Procedures<ul style="list-style-type: none">i) Students have successfully demonstrated the required skills. Material is adequately covered. Results above 75% target.c) SLOA 3: Records of Process Events<ul style="list-style-type: none">i) Students demonstrated the ability to maintain accurate and meaningful process records. Students demonstrated the ability to use quality tracking tools to analyze data. Results above 75% target.d) SLOA 4: Read and Interpret Piping & Instrumentation Drawings (P&ID's)<ul style="list-style-type: none">i) Students demonstrated the ability to read and interpret P&ID's. This material builds from semester-to-semester, and culminates in Operations (PRT 231) and Troubleshooting (PRT 250) class projects. Students are demonstrating excellent skills with P&ID's. Results above 75% target.e) SLOA 5: Equipment Knowledge<ul style="list-style-type: none">i) Students demonstrated knowledge on the fundamentals of a wide variety of process equipment. In addition, they demonstrated knowledge of the mechanical details on process instrumentation, and the fundamentals of major processing systems. Material is being adequately covered. Student response, and |
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test results, indicate that the hybrid delivery method has been effective in this area. Results above 75% target.

Faculty members

Discuss the curricular changes made based on assessing your SLO. If you haven't made any curricular changes, please explain why not and address what you did notice in the review, including strengths of your curriculum through the assessment of your outcomes:

Discussion of Curricular Changes

a) SLOA 1: Safety Awareness:

i) Expand safety skills evaluation for each pertinent course in the Process Technology major courses. Adding additional safety permit exercises (industry standard).

b) SLOA 2: Operating Procedures

i) Continue adding skill evaluations (procedure related) into the Instrumentation and Operations classes, focusing on the use of safe operating procedures.

ii) Procedure writing assignment in the Operations course is very successful.

c) SLOA 3: Records of Process Events

i) PRT 255 students demonstrated good skills with data graphing. All students demonstrated the ability to maintain accurate and meaningful process records, no changes necessary.

d) SLOA 4: P&ID Skills

i) PRT 101 and PRT 231: Communicate workforce expectations for students around P&ID skills in these classes.

ii) PRT 230: Improved effectiveness of P&ID drawing exercises/labs as demonstrated by student descriptions of particular process operations of a system.

e) SLOA 5: Equipment Knowledge:

i) Activities have been developed and we are continuing to develop more hands-on activities in the introductory courses. These are improving retention of the material and aiding students through application.

ii) Equipment identification exercises have been implemented and are improving student comprehension.

f) Textbook changes made in PRT 110, PRT 130, PRT 140, PRT 230, PRT 231, PRT 255. The new textbooks are all current North American Process Technology Alliance (NAPTA) official textbooks and keep our curriculum lined up with the NAPTA endorsement criteria. PRT 101 is currently using NAPTA textbook.

Are communication outcomes embedded in the SLOA Plan?

As of 2017 all Baccalaureate programs were required to embed the communication outcomes within their SLOA Plans, this is optional for non-Baccalaureate programs.

Not Embedded

Student Success

To access the Student Success Dashboard please sign into a UA computer with VPN connection (if not on campus). You will need your UA credentials and it is best accessed with the most updated version of Chrome, Edge, Firefox or Safari browsers; Internet Explorer is not supported. You will

need to filter the data to see your programs. If you need assistance in finding the data for your programs, please contact your data liaison or Julia Manfredini in the PAIR office.

Data Liaisons

Each school or college has a team of Data Liaisons to help you analyze the data provided in the portal and may be able to help you see your data in multiple contexts. You can find a list of data liaisons on the resources page for Program Review.

The college or school level committee will also have access to this data with the goal that by providing these visualizations data availability will be increased.

Data supplied within the dashboard linked below is intended for Academic Program Review and not for any other purpose.

Student Success Data Dashboard

Previous Feedback

Feedback will be provided once you have completed a full or mid-cycle review.

Student Success Data Trends: (please indicate the trends that apply to your program)

Decline in majors, Decline in degrees awarded, No change in persistence, No change in pass rates
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If equity gaps were found in any of your disaggregated student success data, please explain how you plan to address those gaps. Please contact your data liaison or make an appointment with Julia Manfredini to learn more about analyzing your data.

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Optional Data Explanation

Feel free to share more of your thoughts on the data provided.

The number of majors in the program is down from previous years. It seems this is due to negative public information about this career and job opportunities, and to a lack of proper advertising and information about this program and career outlook. Based on industry contacts to our program looking for employees, there are at least twice as many jobs available as compared to our number of graduates.

High Impact Practices

According to the AAC&U, High-Impact Educational Practices “have been widely tested and have been shown to be beneficial to college students from many backgrounds.” UAF is particularly interested in Undergraduate Research and/or Scholarly Activity because it is one of our mission fulfillment indicators, but all of these researched High-Impact Educational Practices should be reflected in your program’s student learning outcomes and curriculum.

Previous Feedback

Feedback will be provided once you have completed a full or mid-cycle review.

High-Impact Practices Used in this Program

Please use the following fields to discuss how your program is using the high-impact practices, successes and known issues and solutions, or ways you are considering incorporating them in the future. If you are not using any of the high-impact practices listed, please use the “Other or None of These,” field to share what your program is doing to help students be successful.

High Impact Practices that currently apply to your program:

Capstone Courses and Projects, Internships, Collaborative Assignments and Projects

Collaborative Assignments & Projects

Process Technology students perform many collaborative exercises and projects throughout the Process Technology program. This is to provide additional training with leadership skills, team dynamics and efforts (crew experience).

Undergraduate Research**Diversity/Global Learning****ePortfolios****First-Year Seminars & Experiences****Writing-Intensive Courses****Service-Learning and/or Community-based Learning****Internships**

Process Technology students can do internships for credit and many industry partners offer internship opportunities for the students.

Capstone Courses & Projects

The Process Technology program has capstone courses offered in the last semester of the program. These are the PRT 231 Operations and PRT 250 Troubleshooting courses. These courses put all of the students knowledge and skills to the test to accomplish activities and projects in these courses.

Other or None of these (explain)

Submission

Submitter & Collaborator Names

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Submitter Email

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College or School Review Committee

The college or school committees set the tone for helping each program feel seen during this process. We have provided you with strength-based feedback tags to attach to this program review. Please select as many as applicable.

Overall Recommendations

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Explanation of Recommendations

The review panel acknowledges the time and effort that went into preparing the mid-cycle program review for the Process Technology program. The review panel also appreciated that the program had a strong assessment plan, made a clear linkage between the SLOA plan and curricular changes, and identified relevant HIPs (high-impact practices) for preparing students for the workforce.

Many of the comments for the Process Technology AAS and Instrumentation Technology Certificate are the same because, outside of the student success data, the program reviews were nearly identical. SLOA plans are very similar or identical for the undergraduate programs (both programs contained 7 SLOs). It is essential that different programs have different outcomes - if students are intended to learn the same things, how are the programs differentiated? Something to resolve, per some of the guidance below, for the full-cycle review in two years.

Learning Outcomes Feedback

Requires Minor Revision

Student Learning Outcomes Assessment Feedback (tags)

Strong alignment with SLOA plan

Student Learning Outcomes Assessment Feedback (narrative)

The program provided 7 SLOs for the Process Technology AAS SLOA plan. The review panel offers the following recommendations to improve upon the program's SLOAs:

- SLO #s 1-5 were appropriate as measures of student learning. These SLOs identify courses where data is collected; however, they can be revised to be more specific as to what they collect and how each one would meet the outcome of "demonstrating knowledge".
- SLO # 6 is a program outcome and not tied to student learning. The program is encouraged to retain this measure of outcome assessment for their own internal tracking purposes (just not use it as part of program review).
- SLO # 7 is related to general education courses and not measured/assessed by the program.
- Per guidance from the NWCCU for accreditation purposes, they recommend that degree programs have between 3-5 SLOs per program. The review program recommends retaining SLO #s 1-5 and eliminating SLO #s 6 and 7. This would bring the total number of SLOs down to 5, which is consistent with the NWCCU-recommended SLO range.

The review panel appreciated the discussion of curricular changes and tying them to the SLOA. The program does not appear to have made any specific changes to the curriculum outside of hybrid course delivery and a change in textbooks.

Following NWCCU guidance, SLOA plans must emphasize "closing the loop" and continuous improvement, ensuring each SLO within the plan is assessed individually to verify alignment with program objectives. If a SLO fails to produce the expected assessment outcome, adjustments to SLO language, substantial changes to the SLO, or revisions to data collection rubrics are necessary to ensure alignment and facilitate program improvement.

Student Success & Equity Feedback

The program identified a decline in majors, a decline in degrees awarded, and no change in persistence or pass rates. The review panel noted the decline in majors from 72 to 42 and degrees awarded from 12 to 8, with a peak of 16 in 2020. There is also a slight decline in GIP from 72 to 53%. No equity gaps were identified, although there does seem to be a higher proportion of male students. The program did not address this in the narrative. The review panel encourages the program to address trends in the data for the full program review in two years.

High-Impact Practices Feedback

The program identified capstone, collaborative assignments, and internships as HIPs and provided a brief description for each category. The review panel would like to see a more in- depth narrative of each HIP, where the HIP fits in the program, whether the HIP is required or optional, and examples of student outcomes derived from each HIP.

The review panel recognizes that the HIPs employed by the Process Technology program are all positive and meaningful in preparing students to enter the workforce.

	2. Each graduate will demonstrate an ability to start up process equipment, shut down process equipment, monitor process equipment, and identify and correct abnormal operating conditions.	Specific test results from PRT 231 and PRT 250 compiled and evaluated by subject area. Simtronics simulator exercise scores for PRT 250 lab exercises. In addition to these scores, key skill evaluations will be compiled from each of these courses to determine an overall rating for student demonstrated performance.	Review results annually with PRT faculty group to determine results and recommendations. Document overall results and continuous improvement recommendations.
	3. Each graduate will have the ability to maintain accurate and meaningful records of process events. He/she will be able to interpret event records to determine any changes required for safe operation of a process.	Specific test results from PRT 250 and PRT 255 compiled and evaluated by subject area. In addition to these scores, key skill evaluations will be compiled from each of these courses to determine an overall rating for student demonstrated performance.	Review results annually with PRT faculty group to determine results and recommendations. Document overall results and continuous improvement recommendations.

	4. Each graduate will have the ability to read and correctly interpret P&ID drawings for basic processes.	Specific test results from PRT 140, PRT 230 and PRT 250 compiled and evaluated by subject area. In addition to these scores, key skill evaluations will be compiled from each of these courses to determine an overall rating for student demonstrated performance.	Review results annually with PRT faculty group to determine results and recommendations. Document overall results and continuous improvement recommendations.
	5. Each graduate will demonstrate knowledge of process equipment such as piping, valves, vessels, tanks, heat exchangers, pumps, compressors, and boilers and heaters.	Specific test results from PRT 101 and PRT 130 compiled and evaluated by subject area. In addition to these scores, key skill evaluations will be compiled from each of these courses to determine an overall rating for student demonstrated performance.	Review results annually with PRT faculty group to determine results and recommendations. Document overall results and continuous improvement recommendations.

	Prepared for Process Technology career	Alumni and employer surveys. Written and/or oral assessment by employers, graduates, and Advisory Committee members about sufficiency of students/graduates to carry out job functions. Written assessment of employers or employer group about skills of employed graduates.	Program head will conduct survey annually and provide information to the program review committee
	Students will meet expected outcomes in communications, computation, and human relations as listed by the core.	Student outcomes provided by core curriculum faculty in WRTNG 111x, WRTNG 213x, COJO 131/141x, MATH 105, SOC 100x, ABUS 154.	Program Head will annually review listed programs to verify that student outcomes meet program requirements. Program review committee will annually assess that student's core curriculum skills are reflected in their PRT work.

<reviewed 2023 Brian Ellingson>