

Date: March 9, 2020

To: Cathy Sandeen, Chancellor

From: John Stalvey, Interim Provost 

Cc: Denise Runge, Dean, Community & Technical College
Henry Haney, Associate Professor, Process Technology, Kenai Peninsula College
Jeffrey Laube, Associate Professor, Process Technology, Kenai Peninsula College
William Howell, Assistant Professor, Process Technology, Kenai Peninsula College
Richard Kochis, Assistant Professor, Electronics Technology, Kenai Peninsula College
Gary Turner, Director, Kenai Peninsula College
Susan Kalina, Vice Provost for Academic Affairs
Claudia Lampman, Vice Provost for Student Success

Re: **AY20 Expedited Program Review Findings – Industrial Process Instrumentation AAS, Process Technology AAS, and Petroleum Technology UC**

I have reviewed the dean's findings and the completed Expedited Program Review Template for the Industrial Process Instrumentation AAS, Process Technology AAS, and Petroleum Technology UC. The Provost's Office did not receive an Optional Program Response Form from the program.

Recommendations

My recommendation is to accept the decision and recommendations of the dean with the additional commentary that the program produce a plan to meet the needs of the Anchorage community for the hands-on courses. An interim progress report on all recommendations is due to the dean by March 1, 2021. The dean will submit a review along with the program's interim progress report to the provost by April 1, 2021. Unless otherwise noted at that time, the next Program Review will be included in the regular ongoing program review schedule.

Decision

Recommend Continuation

Date: February 2, 2020

To: John Stalvey, Interim Provost

CC: Gary Turner, Director, Kenai Peninsula College

From: Denise Runge, Dean

Re: AY20 Expedited Program Review Findings

Program/s in this review: Industrial Process Instrumentation (AAS), Petroleum Technology (UC), Process Technology (AAS)

Specialized accrediting agency (if applicable): none

Campuses where the program is delivered: Kenai Peninsula College

Members of the program review committee:

- Henry Haney, Associate Professor, KPC
- Jeffrey Laube, Associate Professor, KPC
- William Howell, Assistant Professor, KPC
- Richard Kochis, Assistant Professor, KPC

Centrality of Program Mission and Supporting Role The Industrial Process, Petroleum Technology, and Process Technology programs are well-aligned with the mission of UAA, CTC, and the Kenai Peninsula College campus. The programs meet a clear workforce need, preparing individuals who obtain employment in high-wage jobs within the resource extraction industries. Alaska currently experiences nearly forty job openings per year, and installer/technician salaries in Alaska average \$50,000 to \$70,000, according to Alaska Department of Labor data.

Program Demand (including service to other programs), Efficiency, and Productivity

Demand for the program has fluctuated during the review period, and fell sharply in 2018 and 2019. At its peak in 2015 the programs had 319 majors taken together, but by 2019 there were only 169. In terms of instructional productivity, the programs together generated 329.5 student credit hours per full time equivalent faculty in 2019, with an average class size of 12.9. Combined, these courses had a cost per credit hour of \$284.9, bringing tuition revenue per credit hour of \$211.6, for a ratio of .74. Looking only at the Process Technology (PT) courses, they were even more efficient, with a cost of only \$231.8 per credit and revenue of \$211.6, for a ratio of .91, indicating that these programs generally cover or nearly cover their costs. The AAS in Process Technology (along with its pre-major) accounts for 129 of the total majors. Overall the programs are experiencing slightly declining enrollment and some excess capacity, with moderate costs.

Program Quality, Improvement and Student Success The program faculty note in their review the very strong and ongoing support received from industry. This provides clear evidence of the program's quality. Student success in the program is also high, particularly if considered in light of post-graduation outcomes. The program faculty reported specific examples of successful students, as well as overall numbers of graduates who are still working within the industry. These results are significant and attest to both the quality and the focus of the program. The extensive use of internships, on-campus interviews, and faculty mentoring efforts are all supporting factors in the program's success.

Program Duplication / Distinctiveness Duplication/Distinctiveness: UAF also offers programs in Process Technology and Industrial Process Instrumentation. The UAA-KPC programs are unique in that they are offered primarily online, with intensive labs to allow working adults to participate. There are also differences in courses and focus between the programs. In addition, UAA-KPC offers the only Petroleum Technology program.

Commendations and Recommendations Commendations: The program is commended for its work to convert program delivery to more flexible, online and blended methods in order to accommodate working adults and those who reside outside of the KPC service area. Recommendations: The program faculty should continue to work with industry partners to explore additional attendance options for students outside of the Kenai Peninsula area. The program should work with CTC in Anchorage to provide clear information about program availability for those seeking process industry careers.

Decision *Continuation.* Program is successfully serving its students and meeting its mission and goals. No immediate changes are necessary, other than regular, ongoing program improvements.

Submission date: January 31, 2020

Program/s in this review: Process Technology AAS, Industrial Process Instrumentation AAS, Petroleum Technology UC

Specialized accrediting agency (if applicable): N/A

Campuses where the program is delivered: Kenai Peninsula College – Kenai River Campus

Members of the program review committee:

Henry Haney	Associate Professor	KPC
William Howell	Assistant Professor	KPC
Jeffrey Laube	Associate Professor	KPC
Richard Kochis	Assistant Professor	KPC

1. Centrality of Program Mission and Supporting Role

Relevancy of the programs

The Associate of Applied Science in Process Technology program is a highly technical career field incorporating physics, chemistry, electrical, electronic and mechanical concepts. Students are prepared through a two-year program of intensive instruction in which the student is provided with a broad technical knowledge base and extensive hands-on lab experience including troubleshooting, start-up, and normal operating techniques that will directly relate to a variety of field applications for employment as operations technicians in all aspects of process industries, including (but not limited to) petroleum, mining, power generation, chemical manufacturing, renewable energy, and food processing.

The Associate of Applied Science in Industrial Process Instrumentation program is a highly technical career field incorporating mechanical, pneumatic, electrical, electronic and digital control systems. Students are prepared through a two-year program of intensive instruction in which the student is provided with a broad technical knowledge base and extensive hands-on lab experience including start-up, tuning and repair techniques, that will directly relate to a variety of field applications for employment as process instrumentation and automation technicians.

The Petroleum Certificate program is a technical career field incorporating those physics, chemistry, electrical, electronic and mechanical concepts required for employment as entry level operators specifically in oil & gas production and transportation. Students are prepared through a one-year program of intensive instruction in which the student is provided with a broad technical knowledge base and extensive hands-on lab experience including troubleshooting, start-up, shut-down, emergency and normal operating techniques that will directly relate to a variety of on-shore and off-shore oil and gas production and transportation operations.

Roles and supporting roles to other programs

The Process Technology AAS, Industrial Process Instrumentation AAS, and Petroleum Certificate programs provide limited supporting roles:

- The primary role of each program is preparing students for work in the field of their major: PRT, IPIN, Petro-Cert.
- Support roles include mutual courses used in all three programs such as Instrumentation I and II.
- Support roles include certain courses from each program that can be used as electives in one of the other programs with advisor approval.
- An additional supporting role is to provide PRT and IPIN training to dual-degree seeking students.

Partnerships with outside agencies, businesses, or organizations

Kenai Peninsula College is a member of Alaska Process Industry Careers Consortium (APICC) which has recently changed names and is now known as Alaska Safety Alliance.

Kenai Peninsula College is a member and endorsed by the North American Process Technology Alliance (NAPTA).

A contingent of KPC Instructors belong to the International Society of Automation (ISA). They have helped facilitate a student-led ISA Instrumentation Club when there was an interest.

Kenai Peninsula College instructors have voluntarily served in various capacities in all of the above organizations.

Partnerships have been noted through support funding and through job placement coordination, both referenced below.

Specific Workforce development and employment opportunities relevant to the program

Workforce development has become a high priority in the general process industry, industrial process instrumentation and in the oil & gas process sector due to:

- the growing demand across the process industry in both operations and instrumentation for highly trained technicians who have an understanding of modern operating techniques and the growing field of automation control systems such as DCS and SCADA Control Systems.
- the aging and accompanying retirement of oil & gas process industry workforce.

Sources of extramural support and funding for the program

- Chevron Grant Funding has been a source for funding student Process Technology and Industrial Process Instrumentation Scholarships plus for upgrading equipment as needed to keep the program current with continuing developments in industrial instrumentation automation.
- Donations totaling more than \$30,000 from Marathon Petroleum, Agrium, APICC, Construction Industry Program Fund, McKinley Services, and Peak Oilfield Services have been received over the past 3 years, to fund a student group to compete in the NAPTA Process Troubleshooting Competition.
- Donations totaling over \$10,000 per year have been received from Alyeska Pipeline Service Co. and BP for Process Technology Scholarship funding over the past 7 years.
- Hilcorp has donated helicopter flight time to enable multiple student tours to Cook Inlet oil & gas offshore platforms over the past 5 years.
- Support (approximately \$400-500 each time) for the Operator Club and Advisory Committee meetings. Sponsorship donations have come from Exxon, BP, Peak Oilfield Services, Marathon, ASRC, Schlumberger, ConocoPhillips, Nutrien, and others.
- TVEP funds totaling \$110,569 have been received over the past 7 years. These funds have been used to obtain new equipment and to replace certain aged equipment to keep the programs current with industry needs.

High demand job designation

Process Technology and Industrial Process Instrumentation careers have been recognized by University of Alaska as a high demand job opportunity. These types of jobs and associated job skills will see a continued growth in demand as modern operating techniques and associated automation controls increasingly become the method of choice across the general process industry.

2. Program Demand (including service to other programs), Efficiency, and Productivity (7-year trend)

The overall 7-year trend is essentially steady though displaying periodic enrollment variations due to the cyclical nature of Alaska Process Industries.

Seven-year degree awards trend

Both the PRT AAS Degree and the IPIN AAS Degree award trends are directly affected by industry.

- Slow times, with a corresponding possibility of eventual job openings, will cause new students to begin to take classes and will also bring former students back to school who have taken classes previously.
- Periods of increased work and project activity will draw students out of classes into the workforce.

AY20 Expedited Program Review Template

- Veterans have also had an effect upon the data as draw-down of military forces caused many to be discharged and begin taking classes.

These variable conditions create a non-predictable bubble effect in the data that is directly related to work demand in the process industry and a non-consistent pursuit of degree completion by students that is the result of the demands of the process industry.

An additional phenomenon in the current data is the dual-degree option. Some students in the dual-degree program, when presented with a process technology job opportunity will do a bifurcation and graduate with a PRT AAS. They will begin employment and will typically finish up the IPIN AAS over an extended time at one to two classes per semester as their work schedule allows.

Petro-Cert data varies widely due to the following:

- Industry demands for certification to verify training and comply with PSM. This can be an older worker who has had little or no college and no corresponding certification, or an individual who has never worked in the industry and is obtaining certified training to do so.
- PRT and IPIN students at various times will also apply for the Petro-Cert as an added qualification on their resume for knowledge verification for oil & gas work.

Note: PRT calendar data years 2017-2018 reflect additional credits typically in instrumentation, programming or vocational classes taken by students by choice.

IPIN calendar years 2017-2018-2019 reflect additional credits typically in higher math, programming or engineering classes taken by students by choice.

Seven-year major enrollment trend

Both the PRT AAS Degree and the IPIN AAS Degree enrollment trends are directly affected by industry. Media reports have a dramatic effect on enrollment. If the news is perceived to be reporting that Alaska Industry is diminishing and jobs will be scarce, enrollment can fall dramatically. Students do not want to enroll and pursue a degree for which there may not be any jobs.

Due to recent ownership changes in North Slope oil and gas production and new fields being brought into production within a 1 to 2-year timeline, demand for trained students should see enrollment numbers increase once again.

Note: As of Fall 2019 the PRT pre-major was suspended and intended for deletion; a teach-out from old catalogs is now taking place.

Course pass rates have been holding steady. Tutoring has helped, but additional improvement should take place in years ahead as course prerequisites are tightened and students are better prepared for core classes.

Seven-year Student Credit Hour (SCH) production trend

Student Credit Hour Production trends can vary widely as witnessed in the data. There is no one single cause for this. However, there are both direct and inherent reasons for variations in the data.

- 2019 - PETR A155 no longer required for IPIN
- 2018-19: The effect of process industry cutbacks and influential media reports about diminishing job opportunities in Alaska's oil & gas industry, plus positive reports about available process industry employment opportunities in lower 48 drew potential students away.
- During all 7 years there were IPIN classes being taken for elective credit by PRT degree-seeking students. The number of students doing this was not consistent but varied from year to year.
- 2017 IPIN SCH total was especially large as this was the first year the Dual-Degree was offered.
- 2019 – low SCH in IPIN (ET and PETR) due to low enrollment. This multi-year low cycle is also causing difficulty for industry as they now need IPIN graduates.

NOTE: Faculty costs are covered through tuition funding

3. Program Quality, Improvement and Student Success

- **Specialized accreditation process and status**
 - NAPTA Endorsement - The North America Process Technology Alliance [NAPTA] performs a very comprehensive audit of process technology programs across North America. This audit endorsement is recognized by both industry and academia. Out of the 70 or so schools that teach process technology, KPC is one of the 20 PRT programs that is endorsed by NAPTA and KPC is rated among the top three PRT schools in the USA.
 - The NAPTA audit for endorsement is performed every three years. The audit is an endorsement and industry recognition, not an “accreditation.” KPC’s last audit was considered of such quality that it was approved to be used as a part of the UAA 2017 PRT program review.
 - KPC also incorporates NAPTA findings into the PRT program assessment plan and provides yearly updates in program assessment reporting.

- **Currency of the curriculum:**
 - 2017: PRT AAS updates to Core courses: PRT A101, PRT A110, PRT A144, PRT A160 and PRT A255
 - 2017: IPIN AAS updates to Core courses: ET A101, ET A102, ET A126, ET A240, ET A241 and ET A243
 - 2019: PRT AAS updates to PRT A130, PRT A140, PRT A230, PRT A231 and PRT A250
 - 2019: IPIN AAS updates to ET A166 and ET A246
 - 2019: PRT AAS Program was updated
 - 2019: IPIN AAS Program was updated
 - 2019: PRT AAS Program Assessment was updated
 - 2019: IPIN AAS Program Assessment was updated
 - 2019: PRT AAS “Pre-Major” was suspended
 - The KPC PRT AAS and IPIN programs integrate current state-of-the-art technology, up-to-date resource materials and instruction, and industry consultation to ensure students a relevant and demanding curriculum.
 - Industry Operators and Instrumentation Technicians will visit classes on occasion and regularly participate in the quarterly Operator’s Club and Advisory Committee meetings to apprise students of industry expectations, procedures, and changing technologies.
 - Former students also visit classes when available to relate workforce experiences.
 - Core faculty maintain credentials, linking expertise to the currency of the curriculum.
 - Assistant Professor Richard Kochis has a Professional Engineer License and has worked as a design and manufacturing engineer for Hewlett Packard/Agilent. His experience includes VLSI design, analog design, digital design and manufacturing support of flash memory testers. He has authored and received ten US patents.
 - Associate Professor Jeffrey Laube holds multiple degrees including earning a recent master’s Degree plus he has 20 plus years of Process Industry experience. Professor Laube has been invited over the past 7 years to deliver dozens of workshops at national conventions and in-State conventions on how to develop and deliver quality process technology instruction.
 - PRT AAS and IPIN AAS programs also employ adjuncts and term instructors who are both former and/or current Industry Technicians or Engineers with a combination of AAS, BS, and MS Degrees plus up to 40 years of hands-on experience.

- **Innovative program design**
 - With the closure of the former Kenai Peninsula College-Anchorage Extension Site campus the PRT and Petro-Cert programs developed and began offering courses in face-to-face, online, and in blended formats to meet workforce training needs in all locations across the state, and to accommodate the variety of shift work schedules of many students enrolled in the programs. These programs can now essentially be taken via distance except for intensive labs.
 - Approximately 25% of the IPIN program is available in a distance offering. The remaining program courses are available face-to-face classes due to the “hands-on” nature of the instruction plus the requirements for learning the specific job skill.

- To enhance learning technical concepts, all programs have a variety of classes that are video recorded “live” so remote students have a sense of being in class with others, can hear the emphasis the instructor is putting on certain subject matter plus students can replay the video recording as often as necessary to review difficult technical concepts.
- Weekend lab intensives on campus were developed to give remote students access to the state-of-the art technical process equipment housed at KPC’s Career and Technical Education Center and to develop needed industry teamwork skills.
- The program utilizes extensive Simtronics in its online and F2F classes to create real-world operator simulations that prepare students for experiences in the work environment.
- **Availability and indications of quality of distance offerings (e.g., Quality Matters, C-RAC standards, etc.):**
 - GER’s are available in a distance format.
 - All PRT AAS and Petro-Cert courses can be taken via distance offering, or through a modified blended format, with the exception of the hands-on labs that are taught F2F.
 - IPIN AAS has the following core courses (in addition to GER’s) available in a distance format: PRT A140, PRT A144, and PRT A130. These courses are shared with the PRT program.
 - All other IPIN Program courses are taught in the classroom or the lab. This is due to the nature of the technical material being taught that requires hands-on instruction utilizing highly technical equipment. It should be noted many of the IPIN classes makes use of the blended format and provide recorded lectures online in Blackboard.
 - Some IPIN courses are taken as PRT Electives by students with an interest in Process Instrumentation.
 - Current Quality Matters certified process technology courses include: PRT A101, PRT A130, PRT A250 and PRT A280.
- **Program Student Learning Outcomes assessment: Describe your key findings, actions taken to improve student learning, and evidence that these actions are working.**
 - New procedures, methods, and equipment have been rapidly entering the Process Industry in the past 20 years. The changes have accelerated in the past 10 years due to DCS (Distributed Control Systems) and SCADA (Supervisory Control and Data Acquisition). These Automation Systems have changed the way Process Operations are controlled. The increased emphasis on Safety and Environmental awareness have also changed how operations are conducted. The Process Industry is forecast to continue transitioning in the foreseeable future. Past program assessments have noted the need to include this type of training and to stay current with industry practices.
 - PRT, IPIN, and Petro-Cert assessment programs have been updated in 2019.
 - Currently all core courses in these programs are assessed on a rotating 3-year cycle but can be assessed more frequently when necessary.
 - Instructors keep in contact with Industry Representatives through the NAPTA Audit reviews, Operator Club and Advisory Committee meetings, class tours and through personal contacts to ascertain if program subject matter is up to date and accurate.
 - The result of Assessment reviews and Industry interaction was the cause for both PRT and IPIN programs to be updated in 2019.
 - The PRT program is already in planning to go through a minor program update in 2020-2021 due to assessment and industry changing needs.
 - The Petro-Cert will be going through a Program update in 2020 also due to assessment and industry needs.
 - The “continuous improvement” is working and is verified by graduates being hired and being recruited directly for employment prior to graduation.
- **How well the program is doing on Student Success and what it is doing to facilitate it.**
 - Students are provided tours to operating industry facilities.

- Process Technology Internships are available periodically, depending upon the specific company. BP, Alyeska Pipeline, Hilcorp, and ConocoPhillips have all had periodic internships.
- Industrial Instrumentation Internships have been rare with the industry due to the nature of the technical work and experience required. Hilcorp hired instrumentation interns in the summer of 2017 and has verified they will be seeking two PLC focused Instrumentation interns and one intern for general Instrumentation during summer 2020.
- The Operators Club and Advisory Committee invites a wide variety of industry representatives to attend meetings and also sponsor lunch. These meetings are designed to get feedback from industry as well as student/industry networking. Interactions over lunch and during the student skills demonstrations after the business meeting are excellent opportunities for the students and employer representatives to meet and converse with one another.
- The PRT, IPIN and Petro-cert programs also take time to teach students how to get connected, where to apply, to ensure student success in terms of becoming employed.
 - Many companies call the college asking for students to submit resumes for upcoming permanent and temporary employment. The program has a data base of approximately 2,300 students who have approved employment notification opportunities to be sent to their email. An example of this service has recently taken place in January 2020. A major oil & gas contracting company is anticipating up to 40 contract operator positions to come open. To fill this need, they are targeting students who have a Process Technology degree (or are currently in the program) and asking them to submit resumes. They have requested an email (approved by them) be sent out to all those on the email list. This has been sent and is showing results as hiring has begun.
 - Students often do not know where to begin looking for process technology or Instrumentation employment. The program helps students to become successful job finders by making them aware of potential opportunities.
 - Companies want KPC program graduates to apply as they know they have high quality job skill preparation. In the past six months numerous oil and gas companies have contacted KPC with expectations to hire more than 40 PRT and IPIN students and graduates.
- **Student support (e.g. How does your program handle academic advising?)**
 - Students have regular access to the department Chair Henry W Haney and to the faculty advisors, Richard Kochis, Jeffrey Laube, and William Howell. Advising is done on campus during office hours. Jeffrey Laube offers advising 7 days a week via phone. IPIN and PRT Instructor are also available for advising when necessary.
 - Students in Anchorage have regular access to Lynda Kreps, the full-time administrative assistant at the Anchorage Extension Site. She works directly with the Programs to provide program administration, test proctoring, limited advising and recruitment.
 - KPC Learning Center employs a student tutor in the area of Instrumentation, usually a second-year major.
- **Student accomplishments such as successful institutional honors, exit exam pass rates and subsequent enrollment.**
 - National Troubleshooting Skills Competition - The ability to troubleshooting effectively is considered one of the most advanced skills in the process degree. A national troubleshooting skills competition has been held for the past six years. Schools are required to compete in qualifying tests rounds to be invited to the national competition. KPC has participated in every national competition, returning with one First Place Award, three Second Place Awards, and two Third Place Awards. This is a worthy testimony of our students' knowledge and ability when competing with their peers.
 - Note: students in the following examples are identified by number not by name.
 - Student # 1 has one class left to complete to graduate with a PRT AAS. Student was working on the North Slope, doing very well and moving up in positions within their company. However, they felt they would really like to work in a refinery. They applied

for an opening and scored one of the highest scores out of 200+ candidates and were immediately hired. They are currently doing very well in his new position.

- Student # 2 is a “dual-degree” student who applied as an Instrument Tech/Operator at a refinery. In their hands-on skills and knowledge testing they earned the highest score ever and were hired immediately. Student is continuing to do very well and moving up in the company.
- Student # 3 who was in their last semester, applied with a contracting company for operations work on an offshore platform. They scored well on their skills testing and were hired before graduation. Company worked with student to allow them to complete their courses and graduate. Student is doing well and about to be certified as a fully qualified offshore operator.
- Student # 4 was an Instrumentation major who also graduated with a Process Degree and a Petro-Certificate. They began working for a local instrumentation contracting company on small projects. They were then recruited to work as the primary Instrument Tech in one of the Southcentral Alaska oilfields. It should be noted this opening happened because the former Instrumentation Tech on that location -- who was also a KPC graduate in both Instrumentation and Operations -- was promoted into the Operations area to fill another vacancy.
Student # 5 came from a background as a trained baker working successfully on the North Slope. They graduated from KPC with a dual-degree in Process Technology and Industrial Process Instrumentation. They were recruited by a major oil and gas company and were promoted many times, eventually to the board operator position. They are now being trained to become one of the “commissioning first-line supervisors” in charge of starting up new process systems for the company.
- 2013 Graduating Class. In 2013 a major oil & gas company recruited a large percentage of the graduating Process Technology class to become the commissioning team and eventual “operations crew” at a new project location on Alaska’s North Slope. Eleven entry-level operators were hired and ten of those were from the KPC Process Technology program. Some of these former students are doing very well, having been promoted and are now earning in excess of \$200,000 per year.

• **Other**

- Industry donations - Over the past three years industry has donated about \$10,000 per year in support of the travel needs of KPC PRT program. These funds are used to travel to events like the National Troubleshooting Skills Competition and national conferences.
 - Partner # 1 has already donated \$9,000 for 2020 travel expenses to the UA Foundation fund for PRT.
 - Partner # 2 has consistently donated \$10,000 per year (for more than the past 7 years) to be used for process industry degree scholarships.
 - Partner # 3 gives out \$10,000 per year to KPC scholarships for Process Technology students.
 - Various other industry partners have sponsored the KPC Operator’s Club quarterly meetings (at a cost of about \$400/meeting).
- Industry Hiring
 - Numerous industry partners come to KPC to hire our PRT and IPI graduates for both internships and entry-level jobs. Companies that have made trips to KPC and presented to students about job openings over the past seven years include: BP, Exxon, ConocoPhillips, Blue Crest Energy, Alaska Slope Regional Corporation, Agrium, Peak Oilfield Services, Tesoro, Andeavor, Marathon Petroleum, Hilcorp, Little Red Services, Glacier Oil, Cook Inlet Energy, CH2MHill, Alyeska Pipeline, Enstar, Petro Star, Brooks Range, Big G Electric, Udelhoven, ISCCO, Baker-Hughes, and Schlumberger.
 - State of Alaska DOLWD data on employment of KPC Process Technology graduates
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- The Institute of Social and Economic Research - University of Alaska Anchorage published a recent report that after five years 86% of Process Technology graduates were working and averaging \$105,627. It should be noted that in the report, of all UAA degrees (certs though Masters) offered, the Process Technology AAS degree earned the top average wage.
- There has also been distance recruiting:
 - Major Seafood Processors in the Aleutian's have on numerous occasions attempted to recruit Instrumentation Technicians.
 - Major oil & gas operators in the Gulf of Mexico offshore production platforms have recruited KPC students. Each of these recruiters' comments are the same: they called KPC because they had heard about the "quality" of the KPC graduates.
- It is noteworthy that looking back from 2000 to 2017 one company hired a total of 194 Interns and 184 Entry Level Operators from KPC graduates. This is an average of approximately 11 students per graduating class with just one company, in one process industry.
- The OSH program, though now under CTC, still has a strong working relationship with the PRT, IPIN, and Petro-Cert programs. Many PRT students like to take OSH courses for elective credit as the OSH courses provide them with a much higher safety awareness.

4. **Program Duplication / Distinctiveness**

There are two schools in Alaska that teach Process Technology and Industrial Process Instrumentation. One is with UAA CTC located at KPC KRC. The other is through UAF CTC.

The programs are similar in some regards but have different emphasis and degrees.

KPC emphasizes upstream oil & gas operations both on-shore and off-shore, all aspects of production including natural gas storage.

KPC also emphasizes downstream processes including transportation, refining, chemical plant and LNG plant operations, utilities (including power production and industrial wastewater treatment).

KPC offers the only two-year degree in Industrial Process Instrumentation.

KPC offers the only one-year Petroleum Certificate.

KPC offers the PRT AAS as a fully online program except for the required Lab Intensives.

Note: It is not uncommon for students who have begun at UAF CTC to transfer to KPC-KRC due to the advantages and opportunities listed above. Their UAF credits are then petitioned for transfer to the KPC PRT, IPIN or Petro-Cert programs.

5. **Summary Analysis**

The Process Technology AAS, Industrial Process Instrumentation AAS and Petroleum-Certificate programs mission at Kenai Peninsula College is to provide an education opportunity for all Alaskans who would desire to participate in the Alaska Process Industry workforce as an Operator Technician or as an Instrumentation Technician or both.

Kenai Peninsula College has proven programs in Process Technology, Industrial Process Instrumentation and a Petroleum Certificate that are highly rated by our peers across North America. The programs are recognized nationally, but the PRT, IPIN and Petro-Cert programs focus is centered locally within the State of Alaska and the Alaska Process Industry workforce needs.

We are continuing to research and implement what are proving to be best practices for teaching technical academic and hands-on skills instruction required for Process Technology, Industrial Process Instrumentation, and the Petroleum Certificate to students who live and work in isolated off-road locations, remote road-connected areas, and city dwelling urban students. We are also continuing to look for ways to best facilitate instruction and learning for students who are working fulltime and do not have the opportunity to attend school in person. This has resulted in working with and accommodating a variety of work schedules: 40 hrs./week, 1/1, 2/2 etc.

The KPC PRT, IPIN, and Petro-Cert programs have led the way in the changing methods of instruction and are continuing to find means to make PRT, IPIN, Petro-Cert programs technical education accessible for all in the

State of Alaska. The result has been a proven consistent record of producing high quality graduates who are ready to begin work and/or begin their site-specific training in one of the Alaska Process Industries.

The changes we have implemented over the past seven years (intensified in fall 2018 due to the closure of KPC AES) are already producing expanded opportunity with positive results that were not previously available using former methods of classic instruction. Industry demand for graduates continues to increase though it is affected by the Alaska economy, the volatility of the Alaska Process Industry, and the cyclical nature of oil & gas demand.

There are continued challenges:

1. PRT program - how best to set up lab Intensive schedules so that all may attend in spite of adverse work schedules or remote locations. This may require breaking out the Lab as a separate 1-credit course that could be taken at a more convenient time.
2. IPIN program – how best to serve those remote or working students who need to take core-classes that require extensive “hands-on” in-class training.
3. Complete the Petro-Cert program rewrite so that students can obtain a one-year certificate that can be used for PSM verification of industry foundational training that will be accepted and endorsed by Industry for students seeking entry employment. Educate students that this is a “first” step towards obtaining their PRT AAS or IPIN AAS or both.
4. Increase marketing and awareness of the programs through direct and indirect recruiting. This is becoming increasingly important. According to the Alaska Department of Labor / Research and Analysis Section in January 2019 there were approximately 9,600 people employed statewide in the oil & gas sector. Taking just this one part of the overall Alaskan Process Technology employment. The Programs at KPC are not training up enough people as “replacements” for retirees. A low 1% retirement rate would require 96 replacements each year. This does not include those needed for new oil & gas projects statewide and does not include other process areas such as mining, power generation and other processes.
 - a. Such marketing could be effectively increased, for example, simply by listing the programs on the UAA and CTC websites pages where they are not currently shown and can be difficult to find.
5. Program Quality:
 - a. Continue to maintain a high level of PRT instruction worthy of the NAPTA Endorsed College rating and acknowledged by involved industry partners.
 - b. Continue to look to ways to improve the IPIN programs through industry input.
 - c. Continue to seek ways to improve academic and experiential learning that results in improved student success.
 - d. Continue to move core PRT courses through to Quality Matters certification.