
Process Technology

The mission of the Process Technology program is to equip students with entry level knowledge in the machinery of the various process industries, the science behind that equipment, the operation and maintenance of that equipment, the ability to troubleshoot it. Students will learn the automated controls in plant systems. Students will learn how to effectively communicate with fellow workers through speech and written communication using computer skills.

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LENGTH OF COURSE

The program is taken in either a one-year block (2 semesters) resulting in an ATC certificate in Process Technology or,

A 2-year block (4 semesters) resulting in college credits toward a University of Alaska Associate of Arts Degree

1 semester, 540 hours

2 semesters, 1080 hours

3 semesters, 1620 hours

4 semesters, 2160 hours

ENROLLMENT

The Fall semester begins the first week of September.

The spring semester begins the first week of January

TRAINING HOURS

The school day Begins at 8:30 am and ends at 4:30 pm

Required Courses

Semester 1:

PRT 101, Introduction to Process Technology

18 weeks, 126 hours

This course is an introduction to process operations in industry. An overview of general information, processes, procedures and equipment a process technician will encounter in the workplace.

PRT 110, Introduction to Occupational Safety, Health, and Environmental Awareness.

18 weeks, 126 hours

Safe workers and a healthy environment are a major concern in the process industries. You will study the various hazards that a technician might

encounter, and the various regulations enacted by government agencies such as OSHA and others to protect the environment and those who work in the process industry.

Applied Business/Human Relations

18 weeks, 90 hours

Human relations are critical to business and personal success. You will study how attitudes, self- concepts, personal communications styles affect worker interactions, team building, and leadership development.

Pre-Algebra

18 weeks, 99 hours

It's not possible to enter a technical field in the modern world and not have an understanding of basic everyday math. Students will learn basic number operations, how to read data and graphs, how to measure and calculate rates among other concepts. All critical in the process field!

Introduction to Academic Writing

18 weeks, 99 hours

The need for clear, concise communication is of the utmost concern in a field where poor communication can have catastrophic implications. This course is designed to develop clear writing using a recursive process.

Semester 2:

PRT 130, Process Technology 1, Equipment
18 weeks, 126 hours

This course provides an overview of the equipment, process drawings, auxiliary equipment and tools used in the process industries.

PRT 140 Industrial Process Instrumentation
18 weeks, 126 hours

Instrumentation is a study of the complex and highly technical, yet logical automated controls in the various processes. Computerization is the method of today and the student will gain a thorough understanding of controls and instrumentation.

PRT 255 Quality Concepts for the Process Industries.
18 weeks, 99 hours

The history of quality and the forefathers of quality who led us to where we are today. The use of statistics in quality. Improvement strategies and root cause analysis. Insight into dealing with customers and how all of these topics tie together.

Fundamentals of Oral Communication
18 weeks, 90 hours

This course explores the fundamentals through the study and practice of interpersonal and small group communication and the composition and delivery of short speeches.

Algebra 1
18 weeks, 99 hours

Algebra 1 moves out of the concrete number world and into general, more useful concepts that apply to real world situations. Students will learn graphing lines and interpreting slopes and how slopes relate to real situations and how knowing the slope of a function, they can predict what might happen next. An introduction to statistics is included along with a review of pre-algebra.

Semester 3:

PRT 144, Industrial Process instrumentation II

18 weeks, 126 hours

Instrumentation II is a continuation of PRT 140. It deals with advanced control schemes and digital controls. It also investigates a trouble shooting aspect of the various components of a control loop. Symbols, drawings, Signal transmission and conversion, advanced control schemes and programmable logic controls.

PRT 230, Process Technology II: Systems

18 weeks, 126 hours

The student will learn the basics of the physical processes that take place in a plant along with the chemistry involved. There is much science! Challenging but satisfying. Topics like refrigeration, furnaces, distillation, water treatment and more.

Academic Writing II

18 weeks, 99 hours

A writing workshop designed to reinforce essay composition and introduce students to the practice of writing for academic purposes. It introduces basic research writing skills including conducting research, taking notes, paraphrasing, summarizing, direct quotations.

Chemistry in Complex Systems

18 weeks, 99 hours

This course assumes the student has no background in Chemistry. It covers topics such as, but not limited to measurements, atomic theory, bonding, Stoichiometry, states of matter, solutions, acids and bases, and nuclear chemistry

Semester 3: (cont'd)

Intermediate Algebra or math elective

18 weeks, 99 hours

A continuation of Algebra but more in depth. Functions and graphs, linear and quadratic Equations, polynomial functions, exponential and logarithmic and applications

Semester 4:

PRT 231 Process Technology 3, Operations

18 weeks, 120 hours

The emphasis in *Operations* is on Effective written communication, process drawings, complying with safety policies, abnormal operations, shut down, start up, and normal operations of a plant.

PRT 250 Process Trouble Shooting

18 weeks, 99 hours

Troubleshooting process operations and various problems. Indicators, variables and controllers along with a formal process of Troubleshooting. Examples will reflect current needs in the industry.

PRT 160 Oil and Gas Production

18 weeks 99 hours

A survey of oil and gas production including the geology involved, the economics of developing a reservoir, the legal aspects, drilling and production technology, safety and environmental concerns

Physical Science 1

18 weeks 120 hours

Physical science is a broad discipline concerned with natural phenomena of the earth, atmosphere and space. It encompasses a variety of fields that include astronomy, chemistry, geology, physics, atmospheric science, and oceanography.

Computer Applications

18 weeks 99 hours

Computer applications is designed to familiarize students with word processing spreadsheets and database applications through the use of the popular Microsoft Office Suite.