

# PROCESS PLANT TECHNOLOGY ASSOCIATE OF APPLIED SCIENCE DEGREE

A degree in Process Plant Technology provides opportunities for a rewarding and high paying career in the chemical processing industries. Rapid expansion in the energy industry, both in the Rocky Mountain area and across the country, has created high demand for skilled workers. Careers in this field are highly sought-after due to their challenging and rewarding nature, high pay, and opportunities for advancement. See our website at [www.msubillings.edu/careers](http://www.msubillings.edu/careers) (<http://www.msubillings.edu/careers/>) for graduate placement data.

Process Plant Technology graduates will find career opportunities in a variety of industries including petroleum refining, natural gas processing, oil and gas production, biofuels, food processing, chemical manufacturing, power generation, water treatment, and paper manufacturing.

Process Plant Technicians monitor and control chemical processes that upgrade raw materials into higher-value finished products. Finished products include a wide range of materials such as gasoline, diesel, natural gas, crude oil, ethanol, biodiesel, sugar, plastics, electricity, drinking water, and paper.

Process Plant Technology students learn technical, mechanical, and safety details of process plant operations during this four semester program. Topics covered in detail include equipment function and operation; process plant safety; communications, including reading and creating process diagrams; electrical and power systems; process control; environmental protection; chemical principles; boiler operation; advance process operations; troubleshooting; and quality control. Students receive hazardous materials training at the technician level as part of the safety training.

A significant part of the program is dedicated to hands-on training in the Process Plant lab where students operate pilot plant scale processes. Plant simulators give students a realistic understanding of industrial control room activities. The program is complemented with an internship where students experience process plant manufacturing large scale and first hand.

## Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Perform mathematical calculations applicable to process operations.
- Use appropriate verbal and written communication skills in process environment.
- Identify process equipment and state the purpose of the equipment.
- Analyze process conditions / scenarios using process technology concepts and theories.
- Apply knowledge of advanced process operations to specific areas of refineries and chemical plants.

## Required Courses

Code	Title	Credits
BGEN 105B	Introduction to Business	3
CAPP 120	Introduction to Computers	3
COMX 106	Comm in a Dynamic Workplace	3
M 114	Extended Technical Mathematics	3
PPT 101	Fund of Process Technology	4
PPT 102	Fund of Process Technology Lab	1
PPT 120	Environ Awareness	2
PPT 130	Process Diagrams for Proc Tech	2

PPT 135	Instrument & Control Systems	4
PPT 136	Instrument & Controls Lab	1
PPT 151	Process Plant Safety I	2
PPT 161	Process Plant Safety II	2
PPT 175	Process Plant Sciences	4
PPT 176	Process Plant Sciences Lab	1
PPT 207	Boilers, Access & Basic Oprtns	3
PPT 208	Equipment and Operations Lab	2
PPT 210	Equipment and Operations	4
PPT 211	Advanced Operations	2
PPT 212	Advanced Operations Lab	1
PPT 220	Quality Control Practices	2
PPT 225	Plant Investigation	2
PPT 298	Cooperative Educ/Internship	1
TRID 160	Hazrdz Mtrl Tech Gen Trng	3
TRID 185	Intro Industrial Power Systems	2
TRID 186	Intro Indstrl Pwr Systms Lab	1
WRIT 122 or WRIT 121	Intro to Business Writing Intro to Technical Writing	3
<b>Total Minimum Credits</b>		<b>61</b>

Students should check the course descriptions for required prerequisites.

## Suggested Plan of Study

Code	Title	Credits
<b>First Semester</b>		
CAPP 120	Introduction to Computers	3
PPT 101	Fund of Process Technology	4
PPT 102	Fund of Process Technology Lab	1
PPT 130	Process Diagrams for Proc Tech	2
PPT 151	Process Plant Safety I	2
TRID 185	Intro Industrial Power Systems	2
TRID 186	Intro Indstrl Pwr Systms Lab	1
Total		15
<b>Second Semester</b>		
M 114	Extended Technical Mathematics	3
PPT 120	Environ Awareness	2
PPT 135	Instrument & Control Systems	4
PPT 136	Instrument & Controls Lab	1
PPT 161	Process Plant Safety II	2
PPT 175	Process Plant Sciences	4
PPT 176	Process Plant Sciences Lab	1
Total		17
<b>Third Semester</b>		
BGEN 105B	Introduction to Business	3
PPT 207	Boilers, Access & Basic Oprtns	3
PPT 208	Equipment and Operations Lab	2
PPT 210	Equipment and Operations	4
WRIT 121 or WRIT 122	Intro to Technical Writing Intro to Business Writing	3
Total		15
<b>Fourth Semester</b>		

COMX 106	Comm in a Dynamic Workplace	3
PPT 211	Advanced Operations	2
PPT 212	Advanced Operations Lab	1
PPT 220	Quality Control Practices	2
PPT 225	Plant Investigation	2
PPT 298	Cooperative Educ/Internship	1
TRID 160	Hazrdz Mtrl Tech Gen Trng	3
Total		14