

Introduction to Process Technology (NAPTA)

Chapter 1 Process Technology: an Overview

1) Why is it important to ask questions?

- A) Because many industries do not have good standard operating procedures
- B) Because many industries do not have a good training program
- C) Because processes and technology involved are constantly changing and improving
- D) Because your boss will leave you alone

Answer: C

Explanation: A) Incorrect. Ask questions, because processes and the technology involved are constantly changing and improving. Expect to follow a career development plan designed specifically for each position in the process unit. Be motivated to learn. Many industries have multiple process units, which means it could take years to learn all the job positions.

B) Incorrect. Ask questions, because processes and the technology involved are constantly changing and improving. Expect to follow a career development plan designed specifically for each position in the process unit. Be motivated to learn. Many industries have multiple process units, which means it could take years to learn all the job positions.

C) Correct. Ask questions, because processes and the technology involved are constantly changing and improving. Expect to follow a career development plan designed specifically for each position in the process unit. Be motivated to learn. Many industries have multiple process units, which means it could take years to learn all the job positions.

D) Incorrect. Ask questions, because processes and the technology involved are constantly changing and improving. Expect to follow a career development plan designed specifically for each position in the process unit. Be motivated to learn. Many industries have multiple process units, which means it could take years to learn all the job positions.

Page Ref: 2

Objective: 1.1 Explain the framework of the process technology course

Blooms Level: Understand

2) Which of the following is not a reason for a degree in process technology valuable?

- A) It minimize training costs for industry
- B) It creates a safer work environment
- C) It helps train employees in regard to process unit specifics
- D) It shortens your work day

Answer: D

Explanation: A) Incorrect. Education and a degree in Process Technology are becoming more valuable to the process industries. They minimize training costs of entry level employees, create a safer work environment, and train employees in regard to process unit specifics.

B) Incorrect. Education and a degree in Process Technology are becoming more valuable to the process industries. They minimize training costs of entry level employees, create a safer work environment, and train employees in regard to process unit specifics.

C) Incorrect. Education and a degree in Process Technology are becoming more valuable to the process industries. They minimize training costs of entry level employees, create a safer work environment, and train employees in regard to process unit specifics.

D) Correct. Education and a degree in Process Technology are becoming more valuable to the process industries. They minimize training costs of entry level employees, create a safer work environment, and train employees in regard to process unit specifics.

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Objective: 1.1 Explain the framework of the process technology course

Blooms Level: Understand

3) How many courses did a core group of industry representatives create when partnering with local colleges?

- A) 5
- B) 8
- C) 10
- D) 12

Answer: B

Explanation: A) Incorrect. A core group of industry representatives partnered with local colleges to create eight courses.

B) Correct. A core group of industry representatives partnered with local colleges to create eight courses.

C) Incorrect. A core group of industry representatives partnered with local colleges to create eight courses.

D) Correct. A core group of industry representatives partnered with local colleges to create eight courses.

Page Ref: 2

Objective: 1.1 Explain the framework of the process technology course

Blooms Level: Understand

4) Which of the following describes a raw material or intermediate component used to make something else?

- A) Feedstock
- B) Process
- C) Production
- D) Output

Answer: A

Explanation: A) Correct. Feedstock is a raw material or intermediate component used to make something else, like plastic.

B) Incorrect. Process is a system of people, methods, equipment, and structures that creates products from other materials.

C) Incorrect. Production is output, such as material made in a plant, oil from a well, or chemicals from a processing plant.

D) Incorrect. Raw materials are the material sent to a processing unit to be converted into a different material or materials.

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Objective: 1.2 Define what process technology is and what process industries do

Blooms Level: Remember

5) What industry is classified as a process industry?

- A) Oil and gas
- B) Power generation
- C) Food and beverage
- D) All of the above

Answer: D

Explanation: A) Incorrect. The following are examples of process industries: oil and gas, mining, chemicals, pharmaceuticals, power generation, food and beverage, water and wastewater treatment, and pulp and paper.

B) Incorrect. The following are examples of process industries: oil and gas, mining, chemicals, pharmaceuticals, power generation, food and beverage, water and wastewater treatment, and pulp and paper.

C) Incorrect. The following are examples of process industries: oil and gas, mining, chemicals, pharmaceuticals, power generation, food and beverage, water and wastewater treatment, and pulp and paper.

D) Correct. The following are examples of process industries: oil and gas, mining, chemicals, pharmaceuticals, power generation, food and beverage, water and wastewater treatment, and pulp and paper.

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Objective: 1.2 Define what process technology is and what process industries do

Blooms Level: Remember

6) What is a not a key element of the process?

- A) Quality
- B) Safety
- C) Efficiency
- D) Phone access

Answer: B

Explanation: A) Incorrect. Safety, quality, and efficiency are key elements of the process.

B) Correct. Safety, quality, and efficiency are key elements of the process.

C) Incorrect. Safety, quality, and efficiency are key elements of the process.

D) Incorrect. Safety, quality, and efficiency are key elements of the process.

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Objective: 1.2 Define what process technology is and what process industries do

Blooms Level: Understand

7) What is another term for raw materials?

- A) Input
- B) Unit
- C) Stock
- D) Product

Answer: A

Explanation: A) Correct. Raw materials are sometimes called input or feedstock.

B) Incorrect. A unit is an integrated group of process equipment used to produce a specific product or products.

C) Incorrect. Raw materials are sometimes called input or feedstock.

D) Incorrect. A product is the desired end components from a particular process.

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Objective: 1.2 Define what process technology is and what process industries do

Blooms Level: Understand

8) Which of the following is not a common duty of a process technician?

- A) Controlling equipment
- B) Monitoring equipment
- C) Troubleshooting equipment
- D) All of the above

Answer: D

Explanation: A) Incorrect. Process technician duties can include controlling, monitoring, and troubleshooting equipment.

B) Incorrect. Process technician duties can include controlling, monitoring, and troubleshooting equipment.

C) Incorrect. Process technician duties can include controlling, monitoring, and troubleshooting equipment.

D) Correct. Process technician duties can include controlling, monitoring, and troubleshooting equipment.

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Objective: 1.3 Identify the duties, responsibilities, and expectations of the process technician

Blooms Level: Understand

9) What is not a method for a process technician to ensure customer satisfaction?

- A) Emphasis on production
- B) Emphasis on operations
- C) Continuous improvement of operations
- D) Following the organization on social media

Answer: D

Explanation: A) Incorrect. A process technician ensures customer satisfaction by applying quality principles to all activities performed, with an emphasis on production, operations, and continuous improvement of those operations.

B) Incorrect. A process technician ensures customer satisfaction by applying quality principles to all activities performed, with an emphasis on production, operations, and continuous improvement of those operations.

C) Incorrect. A process technician ensures customer satisfaction by applying quality principles to all activities performed, with an emphasis on production, operations, and continuous improvement of those operations.

D) Correct. A process technician ensures customer satisfaction by applying quality principles to all activities performed, with an emphasis on production, operations, and continuous improvement of those operations.

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Objective: 1.3 Identify the duties, responsibilities, and expectations of the process technician

Blooms Level: Understand

10) How are employees in the process industry awarded for job excellence?

- A) Promotions
- B) Dental insurance
- C) Retirement plans
- D) Health insurance

Answer: A

Explanation: A) Correct. Employees in the process industries are generally rewarded for job excellence through salary increases, promotions, and bonuses. Job benefits usually include health and dental insurance, profit sharing, and retirement plans.

B) Incorrect. Employees in the process industries are generally rewarded for job excellence through salary increases, promotions, and bonuses. Job benefits usually include health and dental insurance, profit sharing, and retirement plans.

C) Incorrect. Employees in the process industries are generally rewarded for job excellence through salary increases, promotions, and bonuses. Job benefits usually include health and dental insurance, profit sharing, and retirement plans.

D) Incorrect. Employees in the process industries are generally rewarded for job excellence through salary increases, promotions, and bonuses. Job benefits usually include health and dental insurance, profit sharing, and retirement plans.

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Objective: 1.3 Identify the duties, responsibilities, and expectations of the process technician

Blooms Level: Remember

11) What type of degree is most commonly recommended when hiring a process technician?

- A) Associates degree
- B) Bachelors degree
- C) Masters degree
- D) Process technician certificate

Answer: A

Explanation: A) Correct. Today's process technicians must deal with more automation and computerization than workers in the past. Fewer people are now required to work as process technicians due to advances in technology. Today's workers must have more education and be more highly skilled. A two-year Associates degree is recommended.

B) Incorrect. Today's process technicians must deal with more automation and computerization than workers in the past. Fewer people are now required to work as process technicians due to advances in technology. Today's workers must have more education and be more highly skilled. A two-year Associates degree is recommended.

C) Incorrect. Today's process technicians must deal with more automation and computerization than workers in the past. Fewer people are now required to work as process technicians due to advances in technology. Today's workers must have more education and be more highly skilled. A two-year Associates degree is recommended.

D) Incorrect. Today's process technicians must deal with more automation and computerization than workers in the past. Fewer people are now required to work as process technicians due to advances in technology. Today's workers must have more education and be more highly skilled. A two-year Associates degree is recommended.

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Objective: 1.3 Identify the duties, responsibilities, and expectations of the process technician

Blooms Level: Understand

12) Which of the following workplace conditions is the most rare that a process technician can expect?

- A) Indoor and outdoor work
- B) Working 9-5 only without overtime
- C) Lifting some heavy objects
- D) Working in their hometown with no travel

Answer: B

Explanation: A) Incorrect. Process technicians might expect outdoor positions that require working all types of weather.

B) Correct. Process technicians might expect working shift work.

C) Incorrect. Process technicians might expect lifting some heavy objects.

D) Incorrect. Process technicians might expect a potential for working away from home for long periods of time.

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Objective: 1.4 Describe working conditions in the process industries

Blooms Level: Understand

13) Which agency is charged with ensuring safe workplace conditions by education of employees, supervision, and company administration?

- A) EPA
- B) OSHA
- C) Department of Energy
- D) PSM

Answer: B

Explanation: A) Incorrect. OSHA works under the direction of the Department of Labor (DOL). This agency is charged with ensuring safe workplace conditions by education of employees, supervision, and company administration.

B) Correct. OSHA works under the direction of the Department of Labor (DOL). This agency is charged with ensuring safe workplace conditions by education of employees, supervision, and company administration.

C) Incorrect. OSHA works under the direction of the Department of Labor (DOL). This agency is charged with ensuring safe workplace conditions by education of employees, supervision, and company administration.

D) Incorrect. The Process Safety Management (PSM) standard was enacted when accidents and incidents continued to occur, releasing toxic and other types of hazardous chemicals, and sometimes causing injury and death to employees.

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Objective: 1.4 Describe working conditions in the process industries

Blooms Level: Understand

14) How can quality be defined?

- A) A product or service that has a competitive edge
- B) A product or service free of deficiencies
- C) A product or service that will satisfy some needs
- D) A product or service that reduces waste

Answer: B

Explanation: A) Incorrect. Quality is an important part of the process industries. Quality has two major definitions: (1) a product or service free of deficiencies; and (2) the characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

B) Correct. Quality is an important part of the process industries. Quality has two major definitions: (1) a product or service free of deficiencies; and (2) the characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

C) Incorrect. Quality is an important part of the process industries. Quality has two major definitions: (1) a product or service free of deficiencies; and (2) the characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

D) Incorrect. Quality is an important part of the process industries. Quality has two major definitions: (1) a product or service free of deficiencies; and (2) the characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

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Objective: 1.4 Describe working conditions in the process industries

Blooms Level: Understand

15) What is the "sun-up" effect?

- A) When a person's natural time clock is different from work hours
- B) The mental low point that occurs between 2-6am
- C) The mental low point that occurs between 2-6pm
- D) When the person wakes up when the sun rises, no matter how sleep deprived the person is

Answer: D

Explanation: A) Incorrect. The "sun up effect" is where a person wakes up when the sun rises, no matter how sleep deprived the person is.

B) Incorrect. The "sun up effect" is where a person wakes up when the sun rises, no matter how sleep deprived the person is.

C) Incorrect. The "sun up effect" is where a person wakes up when the sun rises, no matter how sleep deprived the person is.

D) Correct. The "sun up effect" is where a person wakes up when the sun rises, no matter how sleep deprived the person is.

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Objective: 1.4 Describe working conditions in the process industries

Blooms Level: Understand

16) What is an example of physical health issue not a mental health that can occur if shift work is not handled well?

- A) Irritability
- B) Depression
- C) Lack of exercise
- D) Lack of a social life

Answer: C

Explanation: A) Incorrect. If not handled well, shift work can affect emotional health resulting in increased irritability and a tendency toward depression and a lack of social life or healthy leisure activities.

B) Incorrect. If not handled well, shift work can affect emotional health resulting in increased irritability and a tendency toward depression and a lack of social life or healthy leisure activities.

C) Correct. If not handled well, shift work can affect physical health resulting in high rates of alcohol, drug, and tobacco use, overeating, lack of exercise, and long-term sleep disturbances.

D) Incorrect. If not handled well, shift work can affect emotional health resulting in increased irritability and a tendency toward depression and a lack of social life or healthy leisure activities.

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Objective: 1.4 Describe working conditions in the process industries

Blooms Level: Understand

17) How do process industries impact the community?

- A) They take jobs away from the area
- B) They increase the standard of living
- C) They increase the supply of available housing
- D) They always pollute the water supply

Answer: B

Explanation: A) Incorrect. Process industries impact our communities by helping the economy. Industries bring jobs into the area, create greater commerce, and increase the standard of living in part due to the higher wage bracket paid by these types of positions. New industry arriving in a community often creates a growth of housing and supporting businesses to help sustain its operation. Management representatives work with community representatives to promote and foster good relationships and transparency in all actions that could affect air and water quality in the geographical area surrounding the plant site. Great effort is taken to ensure the environmental footprint is minimized.

B) Correct. Process industries impact our communities by helping the economy. Industries bring jobs into the area, create greater commerce, and increase the standard of living in part due to the higher wage bracket paid by these types of positions. New industry arriving in a community often creates a growth of housing and supporting businesses to help sustain its operation. Management representatives work with community representatives to promote and foster good relationships and transparency in all actions that could affect air and water quality in the geographical area surrounding the plant site. Great effort is taken to ensure the environmental footprint is minimized.

C) Incorrect. Process industries impact our communities by helping the economy. Industries bring jobs into the area, create greater commerce, and increase the standard of living in part due to the higher wage bracket paid by these types of positions. New industry arriving in a community often creates a growth of housing and supporting businesses to help sustain its operation. Management representatives work with community representatives to promote and foster good relationships and transparency in all actions that could affect air and water quality in the geographical area surrounding the plant site. Great effort is taken to ensure the environmental footprint is minimized.

D) Incorrect. Process industries impact our communities by helping the economy. Industries bring jobs into the area, create greater commerce, and increase the standard of living in part due to the higher wage bracket paid by these types of positions. New industry arriving in a community often creates a growth of housing and supporting businesses to help sustain its operation. Management representatives work with community representatives to promote and foster good relationships and transparency in all actions that could affect air and water quality in the geographical area surrounding the plant site. Great effort is taken to ensure the environmental footprint is minimized.

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Objective: 1.5 Explain process industries' impact and industry responses to current issues and trends

Blooms Level: Understand

18) What trend should process technicians expect to see in the future?

- A) Decreased workplace diversity
- B) Virtual facilities
- C) Less stringent environmental quality standards
- D) Limited market fluctuations in pricing of raw materials

Answer: B

Explanation: A) Incorrect. Process technicians should expect to see increased workplace diversity in the future.

B) Correct. Process technicians should expect to see virtual facilities in the future.

C) Incorrect. Process technicians should expect to see more stringent water, air, and environmental quality standards in the future.

D) Incorrect. Process technicians should expect to see market fluctuations in pricing of raw materials and feedstocks in the future.

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Objective: 1.5 Explain process industries' impact and industry responses to current issues and trends

Blooms Level: Understand

19) What agency is charged with authority to make and enforce the national environmental policy?

- A) EPA
- B) OSHA
- C) NRC
- D) DHS

Answer: A

Explanation: A) Correct. The EPA (Environmental Protection Agency) is a federal agency charged with authority to make and enforce the national environmental policy.

B) Incorrect. OSHA (Occupational Safety & Health Administration) is a U.S. government agency created to establish and enforce workplace safety and health standards, conduct workplace inspections and propose penalties for non-compliance, and investigate serious workplace incidents.

C) Incorrect. NRC (Nuclear Regulatory Commission) is a U.S. government agency that protects public health and safety through regulation of nuclear power and the civilian use of nuclear materials.

D) Incorrect. DHS (Department of Homeland Security) is the department of the U.S. federal government charged with protecting U.S. territory from terrorist attacks (including both physical and cyber-attacks) and providing a coordinated response to large-scale emergencies.

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Objective: 1.6 Describe the responsibility of regulatory agencies in process industries

Blooms Level: Remember

20) What is the mission of the Department of Transportation (DOT)?

- A) Protect U.S. territory from violent criminals
- B) Protect the community from illegal use and trafficking of firearms
- C) Provide an efficient and economical national transportation system
- D) Protect public health and safety through regulations of nuclear power

Answer: C

Explanation: A) Incorrect. ATF (Alcohol, Tobacco, and Firearms) is a law enforcement agency in the United States Department of Justice that protects the community from violent criminals, criminal organizations, the illegal use and trafficking of firearms, the illegal use and storage of explosives, acts of arson and bombings, acts of terrorism, and the illegal diversion of alcohol and tobacco products.

B) Incorrect. ATF (Alcohol, Tobacco, and Firearms) is a law enforcement agency in the United States Department of Justice that protects the community from violent criminals, criminal organizations, the illegal use and trafficking of firearms, the illegal use and storage of explosives, acts of arson and bombings, acts of terrorism, and the illegal diversion of alcohol and tobacco products.

C) Correct. The DOT (Department of Transportation) is a U.S. government agency with a mission of developing and coordinating policies to provide an efficient and economical national transportation system, taking into account need, the environment, and national defense.

D) Incorrect. NRC (Nuclear Regulatory Commission) is a U.S. government agency that protects public health and safety through regulation of nuclear power and the civilian use of nuclear materials.

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Objective: 1.6 Describe the responsibility of regulatory agencies in process industries

Blooms Level: Understand

21) What agency protects public health and safety through regulations of nuclear power?

- A) EPA
- B) OSHA
- C) NRC
- D) ATF

Answer: C

Explanation: A) Incorrect. The EPA (Environmental Protection Agency) is a federal agency charged with authority to make and enforce the national environmental policy.

B) Incorrect. OSHA (Occupational Safety & Health Administration) is a U.S. government agency created to establish and enforce workplace safety and health standards, conduct workplace inspections and propose penalties for non-compliance, and investigate serious workplace incidents.

C) Correct. NRC (Nuclear Regulatory Commission) is a U.S. government agency that protects public health and safety through regulation of nuclear power and the civilian use of nuclear materials.

D) Incorrect. ATF (Alcohol, Tobacco, and Firearms) is a law enforcement agency in the United States Department of Justice that protects the community from violent criminals, criminal organizations, the illegal use and trafficking of firearms, the illegal use and storage of explosives, acts of arson and bombings, acts of terrorism, and the illegal diversion of alcohol and tobacco products.

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Objective: 1.6 Describe the responsibility of regulatory agencies in process industries

Blooms Level: Remember

22) What agency provides a coordinated response to large-scale emergencies?

- A) EPA
- B) DOT
- C) NRC
- D) DHS

Answer: D

Explanation: A) Incorrect. The EPA (Environmental Protection Agency) is a federal agency charged with authority to make and enforce the national environmental policy.

B) Incorrect. The DOT (Department of Transportation) is a U.S. government agency with a mission of developing and coordinating policies to provide an efficient and economical national transportation system, taking into account need, the environment, and national defense.

C) Incorrect. NRC (Nuclear Regulatory Commission) is a U.S. government agency that protects public health and safety through regulation of nuclear power and the civilian use of nuclear materials.

D) Correct. DHS (Department of Homeland Security) is the department of the U.S. federal government charged with protecting U.S. territory from terrorist attacks (including both physical and cyber-attacks) and providing a coordinated response to large-scale emergencies.

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Objective: 1.6 Describe the responsibility of regulatory agencies in process industries

Blooms Level: Remember