



Course Syllabus

OSHT 1220 – Energy Industry Safety

Catalog Description: An overview for industrial workers of state/federal regulations and guidelines which require industrial safety training.

Lecture hours = 1, Lab hours = 3

Prerequisites: none

Semester Credit Hours: 2

Lecture Hours per Week: 1

Lab Hours per Week: 3

Extended Hours:

Contact Hours per Semester: 64

State Approval Code: 15.0701

Class section meeting time:

Alternate Operations During Campus Closure: In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Panola College to move to altered operations. During this time, Panola College may opt to continue delivery of instruction through methods that include, but are not limited to: online learning management system (CANVAS), online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor Panola College's website (www.panola.edu) for instructions about continuing courses remotely, CANVAS for each class for course-specific communication, and Panola College email for important general information.

Artificial Intelligence (AI) Course Policy:

Use of generated AI Permitted under some classroom circumstances with permission.

There are situations throughout the course where you may be asked to use artificial intelligence (AI) tools to explore how they can be used. Outside of those circumstances, you should not use AI tools to generate content that will end up in any student work (assignments, activities, discussion responses, etc.). In such cases for Option #2, no more than 25% of the student work should be generated by AI. Use of any AI-generated content in this course without the instructor's consent qualifies as academic dishonesty and violates Panola College's standards of academic integrity.

Instructional Goals and Purposes: The purpose of this course is to provide the student with basic knowledge and rules concerning performing task while creating a safe working environment.

Learning Outcomes:

1. Define the mission of OSHA.
2. Discuss the OSH Act / General Duty Clause.
3. Identify the purpose and scope of the Inspections, Citations, and Penalties Standard.
4. Identify the required record keeping and reporting criteria.
5. Identify Walking and Working Surfaces safety requirements.
6. Detail safety requirements of Cranes and Ladders.
7. Discuss Fire Prevention and Control.
8. Discuss Heat Stress, Back Safety, Eye Safety and Ergonomics.
9. Identify the problem and correction of Occupational Noise Exposure.
10. Define occupational precautions and remedial actions for Medical and First Aid and Bloodborne Pathogens.
11. Discuss Machine Guarding.
12. Identify the requirements for Hazardous Materials handling.
13. Identify tools to assist in developing safety and health programs.
14. Define key terms related to lockout / tagout.
15. Define key terms in regard to confined spaces.
16. Identify the general prerequisites that should be met prior to initiating welding, cutting, or brazing work.
17. Discuss the general requirements associated with the electrical standard.

Specific Course Objectives (includes SCANS):

After studying all materials and resources presented in the course, the student will be able to:

1. **Define the mission of OSHA.** SCANS: (1ai, 1aii, 1aiv, 1av, 1bi, 1bii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
 - a. Discuss the mission of OSHA and the role it plays with employees.
2. **Discuss the OSH Act / General Duty Clause.** SCANS: (1ai, 1aii, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
 - a. Define the OSH Act and the history behind it.
 - b. Define the scope and importance of the General Duty Clause.
3. **Identify the purpose and scope of the Inspections, Citations, and Penalties Standard.** SCANS: (1ai, 1aii, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
 - a. Discuss the inspection process.
 - b. Identify the types of citations.
 - c. Identify penalties and resulting consequences of each.
4. **Identify the required record keeping and reporting criteria.** SCANS: (1ai, 1aii, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
 - a. Identify the location a citation must be posted.

- b. Identify the length of time a citation must be posted.
5. **Identify Walking and Working Surfaces safety requirements.** SCANS: (1ai, 1aai, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aai, 2aaii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
- a. Identify and discuss the hazards associated with walking and working surfaces.
6. **Detail safety requirements of Cranes, and Ladders.** SCANS: (1ai, 1aai, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aai, 2aaii, 2aaiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
- a. Discuss the proper use of a crane.
- b. Identify proper hand signals.
- c. Determine the appropriate way to rig up a load.
- d. Identify ladder types.
- e. Determine proper ladder placement.
7. **Discuss Fire Prevention and control.** SCANS: (1ai, 1aai, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aai, 2aaii, 2aaiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
- a. Determine the optimal location for exits associated with fires.
- b. Discuss the proper use of a fire extinguisher.
- c. Identify the various types of fire extinguishers and their use.
- d. Identify the actions that should be taken in the case of a fire.
8. **Discuss Heat Stress, Back Safety, Eye Safety and Ergonomics.** SCANS: (1ai, 1aai, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aai, 2aaii, 2aaiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
- a. Identify the warning signs of Heat Stress and Heat Stroke.
- b. Discuss the proper way to avoid and treat heat related illnesses.
- c. Identify proper lifting techniques to maintain back safety.
- d. Identify the PPE needed to prevent eye injuries.
- e. Discuss the significance of ergonomics and how to incorporate the concept into the workplace.
9. **Identify the problem and correction of Occupational Noise Exposure.** SCANS: (1ai, 1aai, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aai, 2aaii, 2aaiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
- a. Identify sources that have the ability to cause hearing damage.
- b. Determine the proper PPE to avoid hearing damage.
10. **Define occupational precautions and remedial actions for Medical and First Aid and Bloodborne Pathogens.** SCANS: (1ai, 1aai, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aai, 2aaii, 2aaiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
- a. Discuss the dangers of bloodborne pathogens.
- b. Identify the proper procedures for handling medical and first aid accidents.
11. **Discuss Machine Guarding.** SCANS: (1ai, 1aai, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aai, 2aaii, 2aaiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
- a. Determine proper machine guarding techniques.
12. **Identify the requirements for Hazardous Materials handling.** SCANS: (1ai, 1aai, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aai, 2aaii, 2aaiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
- a. Discuss the proper handling and disposal of hazardous materials.

13. **Identify tools to assist in developing safety and health programs.** SCANS: (1ai, 1aii, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
 a. Discuss the importance of developing a safety and health program.
14. **Define key terms related to lockout / tagout.** SCANS: (1ai, 1aii, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
 a. Discuss the proper lockout/tagout procedures.
 b. Define authorized employee and affected employee.
 c. Discuss the dangers associated with improper lockout/tagout procedures.
15. **Define key terms in regard to confined spaces.** SCANS: (1ai, 1aii, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
 a. Define what a confined space is.
 b. Determine the procedures for proper testing, entry and exit of a confined space.
 c. Define terms associated with confined spaces.
16. **Identify the general prerequisites that should be met prior to initiating welding, cutting, or brazing work.** SCANS: (1ai, 1aii, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
 a. Identify the hazards associated with welding, cutting and brazing.
 b. Determine the proper PPE's.
 c. Discuss the actions that will need to be taken depending upon the environment work is occurring.
 d. Discuss fire watch and when it is needed.
17. **Discuss the general requirements associated with the electrical standard.**
 SCANS: (1ai, 1aii, 1aiv, 1av, 1bi, 1bii, 1biii, 1biv, 1bv, 1bvi, 1ci, 1cii, 1ciii, 1civ, 1cv, 2ai, 2aii, 2aiii, 2bi, 2bii, 2biii, 2biv, 2bv, 2bvi, 2ci, 2cii, 2ciii, 2civ, 2dii, 2diii, 2eiii)
 a. Discuss the dangers of working with electricity
 b. Determine the proper PPE's needed.
 c. Discuss electrical safety procedures.

Course Content: A general description of lecture/discussion topics included in this course are listed in the Learning Objectives / Specific Course Objectives sections of this syllabus.

1. Students will complete quizzes and assignments based on the material provided for the course.
2. Students will complete online objective exams. For the online section Test 2 and the Final Exam will be in the presence of a testing proctor.

Methods of Instruction/Course Format/Delivery: Students in traditional, hybrid and Internet classes will have access to courses via Canvas. Students in the traditional class will meet regularly for lectures. Students in the Internet class will be required to take quizzes and exams at an approved testing facility or, they may also be administered by the instructor. Students in hybrid classes will have both in class and online assignments. Hybrid classes are required to read assigned material, take quizzes and exams as assigned by the instructor, and complete assigned homework prior to meeting for the face to face labs. Resources for this course, provided through Canvas, include the following Sections in Canvas....

Modules: Chapter study materials, self-assessment exercises, quizzes and exams

- Announcements and Recent Activities List: Instructor Announcements

- Inbox: Email (to communicate with instructor and classmates inside Canvas)
- Grades: Student grades
- Other sections, as assigned by the Instructor: Students in both the traditional and Internet classes should use the People feature within Canvas (includes Canvas Email) to communicate with the instructor. Using Canvas Email located in the “In Box” menu, gives the student access to the instructor and other classmates without having to remember or type email addresses; the student just selects a name from the list. The instructor will attempt to respond to all Canvas email within a timely manner. Please always include in the subject line of the Canvas email, the student’s name, course number and course section number.

Assessment:

The following items will be assigned and assessed during the semester and used to calculate the student’s final grade.

- **OSHA 10 Course**

Students must complete the OSHA 10 course during the allotted time during the semester. The OSHA 10 Course will count as Test 2 in the course.

- **Quizzes and Assignments**

Students will read the required material and complete quizzes and assignments over the content. The ability to makeup late quizzes and assignments will be determined by the instructor for a reduced score.

- **Tests**

Multiple tests will be administered during the semester. Two tests during the semester will be proctored. Tests that are missed due to an unexcused absence will be given a reduced score. See the grading notes for more information.

- **Final Exam**

The Final Exam will be cumulative and will be proctored.

Course Grade:

The grading scale for this course is as follows:

Quizzes and Assignments – 25%

Tests – 50%

Final Exam – 25%

Grading Scale A=90-100, B=80-89, C=70-79, D=60-69, F=69 and below

Grading Notes:

Late Work: All listed assignments are due according to the due date provided in Canvas and on the course calendar if you do not complete the assignments on time a 10% per day penalty will

automatically be applied to all assignments. If you have missed an assignment due to an approved class absence please contact your instructor for further instructions.

Late work for an unexcused absence: There will be a 10 point reduction in the score if the assignment is turned in after the listed due date and time. (Example: The assignment is due at 1 pm and you submit it at 4 pm you will receive a 10 point deduction from the original score.) There will also be a 10 point deduction for everyday the assignment is late. (Example: If you turn in the assignment 3 days late you will receive a 30 point deduction from your original score.)

Missed Exams: Missed exams due to legitimate reasons should be taken prior to the reporting of a midterm or final grade as applicable. It is the responsibility of the student to reschedule the makeup with the instructor. The Instructor reserves the right to change the test format of any makeup. Instructors are not required to issue makeup work for an unexcused class absence Instructor also reserves the right to give full or partial credit for any makeup work that is allowed and that resulted from an unexcused absence.

Missed Quizzes: Missed quizzes due to legitimate reasons should be rescheduled within one week of the scheduled quiz or a date assigned by the Instructor. It is the responsibility of the student to reschedule makeup quizzes. The Instructor reserves the right to change the test format of the makeup quiz. The instructor is not required to make up work for unexcused class absences. The instructor reserves the right to give full or partial credit for any makeup work that is allowed and that resulted from an unexcused absence.

NO MAKEUP WORK WILL BE ACCEPTED DURING FINALS WEEK.

Attendance: Attendance is based on the student missing no more than 10% out of the semester without a valid excuse. After the 10%, the instructor may withdraw the student at their discretion. Any student thirty or more minutes late will be counted absent. Students that leave before class is dismissed will be counted absent. The Instructor reserves the right to dock points for any missed class without a legitimate excuse. Students that leave before class is dismissed will be counted absent.

You will also be expected to show up to class on time each day. After accumulating three tardies, each tardy will count as an unexcused absence.

Excused absences are those due to a pre-approved school sponsored trip, a death in the family (you will need a funeral pamphlet) or a sickness (in which case a doctor's note is required).

For face-to-face classes that meet once a week:

Attendance will be mandatory. Roll will be taken at the beginning of every class. At the end of the semester, any student who has **two unexcused absences** will be penalized **one letter grade**. If a student accumulates **three or more unexcused absences**, the grade for the class will be an automatic “F”.

Plagiarism: Plagiarism shall be defined as appropriating, buying, receiving as a gift or obtaining by any other means another person’s work and the unacknowledged submission or incorporation of it in one’s own written work . Plagiarism in this class consists of copying another student’s files and using them as your own, copying another student’s projects and using it as your own, downloading a completed file and using it as your own, and/or having someone complete the work for you and using it as your own. Plagiarism will not be tolerated and will result in an automatic “F” for the course.

All papers submitted to Canvas will be scanned with turnitin.com and the instructor reserves the right to dock points based on the results.

Cheating: Cheating on a test shall include:

- a. Copying from another student’s test
- b. Using test materials not authorized by the person administering the test
- c. Collaborating with or seeking aid from another student during a test without permission from the test administrator
- d. Knowingly using, buying, selling, stealing, or soliciting, in whole or in part, the contents of an unadministered test.
- e. The unauthorized transporting or removal, in whole or in part, of the contents of the unadministered test.
- f. Substituting for another student, or permitting another student to substitute for one’s self, to take a test.
- g. Bribing another person to obtain an unadministered test or information about an unadministered test absolutely no cheating is tolerated.
- h. If a student is observed cheating they will be sent home immediately counted absent and given a zero on the assignment they were cheating on.

Cheating in this course will not be tolerated and can result in a “F” for the course.

Class Conduct: All cell phones should be turned off in all classes. If you must receive a call notify your instructor and step out of the classroom. No cell phones are allowed during testing. The use of

cell phones (texting, calls, internet, ect.) during class will result in 5 points being taken from the students' Test grade for every offense.

No disruptive behavior is allowed in class; if a student is being disruptive as determined by the instructor one warning will be given. If the behavior persists, the student will be sent home and counted absent. Asking of questions and discussion of relevant information in and outside class is highly encouraged; however, talking to neighbors, texting, sleeping, foul language or studying for other courses during class time will not be tolerated.

Some mandatory meetings outside of class days and time may be required to attend for credit. Valid excuses must be submitted with proof via email to your professor to avoid grade penalties.

A student that chooses to NOT finish the course must complete the withdrawal procedure in the Student Success office in order to receive a —W. Otherwise, the student will receive a grade at the end of the semester commensurate with the work completed.

Students needing special classroom or testing accommodations because of physical or learning disabilities must contact the Student Success office before these services will be made available in the classroom.

Texts, Materials, and Supplies:

- *Reliable access to a computer and the internet is required for this course.*

Required Readings:

- Material posted through Canvas

Recommended Readings:

- None

Other:

- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.
- For current texts and materials, use the following link to access bookstore listings:
<https://www.panolacollegestore.com>
- For testing services, use the following link:
<https://www.panola.edu/student-services/student-support/academic-testing-center>

- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Charles C. Matthews Student Center or go to <https://www.panola.edu/student-services/student-support/disability-support-services> for more information.
- Panola College welcomes pregnant and parenting students as a part of the student body. This institution is committed to providing support and adaptations for a successful educational experience for pregnant and parenting students. Students experiencing a need for accommodations related to pregnancy or parenting will find a Pregnancy and Parenting Accommodations Request form in The Pathfinder or may request the form from the course instructor.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook, The Pathfinder: <https://www.panola.edu/> (located at the bottom under students)

SCANS CRITERIA

- 1) **Foundation skills are defined in three areas: basic skills, thinking skills, and personal qualities.**
 - a) **Basic Skills:** A worker must read, write, perform arithmetic and mathematical operations, listen, and speak effectively. These skills include:
 - i) Reading: locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.
 - ii) Writing: communicate thoughts, ideas, information, and messages in writing, and create documents such as letters, directions, manuals, reports, graphs, and flow charts.
 - iii) Arithmetic and Mathematical Operations: perform basic computations and approach practical problems by choosing appropriately from a variety of mathematical techniques.
 - iv) Listening: receive, attend to, interpret, and respond to verbal messages and other cues.
 - v) Speaking: Organize ideas and communicate orally.
 - b) **Thinking Skills:** A worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively. These skills include:
 - i) Creative Thinking: generate new ideas.
 - ii) Decision Making: specify goals and constraints, generate alternatives, consider risks, and evaluate and choose the best alternative.
 - iii) Problem Solving: recognize problems and devise and implement plan of action.
 - iv) Visualize ("Seeing Things in the Mind's Eye"): organize and process symbols, pictures, graphs, objects, and other information.
 - v) Knowing How to Learn: use efficient learning techniques to acquire and apply new knowledge and skills.
 - vi) Reasoning: discover a rule or principle underlying the relationship between two or more objects and apply it when solving a problem.
 - c) **Personal Qualities:** A worker must display responsibility, self-esteem, sociability, self-management, integrity, and honesty.
 - i) Responsibility: exert a high level of effort and persevere toward goal attainment.
 - ii) Self-Esteem: believe in one's own self-worth and maintain a positive view of oneself.
 - iii) Sociability: demonstrate understanding, friendliness, adaptability, empathy, and politeness in group settings.
 - iv) Self-Management: assess oneself accurately, set personal goals, monitor progress, and exhibit self-control.
 - v) Integrity and Honesty: choose ethical courses of action.
- 2) **Workplace competencies are defined in five areas: resources, interpersonal skills, information, systems, and technology.**
 - a) **Resources:** A worker must identify, organize, plan, and allocate resources effectively.
 - i) Time: select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
 - ii) Money: Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
 - iii) Material and Facilities: Acquire, store, allocate, and use materials or space efficiently. Examples: construct a decision time line chart; use computer software to plan a project; prepare a budget; conduct a cost/benefits analysis; design an RFP process; write a job description; develop a staffing plan.
 - b) **Interpersonal Skills:** A worker must work with others effectively.

- i) Participate as a Member of a Team: contribute to group effort.
 - ii) Teach Others New Skills.
 - iii) Serve Clients/Customers: work to satisfy customer's expectations.
 - iv) Exercise Leadership: communicate ideas to justify position, persuade and convince others, responsibly challenge existing procedures and policies.
 - v) Negotiate: work toward agreements involving exchange of resources, resolve divergent interests.
 - vi) Work with Diversity: work well with men and women from diverse backgrounds.
- Examples: collaborate with a group member to solve a problem; work through a group conflict situation, train a colleague; deal with a dissatisfied customer in person; select and use appropriate leadership styles; use effective delegation techniques; conduct an individual or team negotiation; demonstrate an understanding of how people from different cultural backgrounds might behave in various situations.

c) **Information:** A worker must be able to acquire and use information.

- i) Acquire and Evaluate Information.
- ii) Organize and Maintain Information.
- iii) Interpret and Communicate Information.
- iv) Use Computers to Process Information.

Examples: research and collect data from various sources; develop a form to collect data; develop an inventory record-keeping system; produce a report using graphics; make an oral presentation using various media; use on-line computer data bases to research a report; use a computer spreadsheet to develop a budget.

d) **Systems:** A worker must understand complex interrelationships.

- i) Understand Systems: know how social, organizational, and technological systems work and operate effectively with them.
- ii) Monitor and Correct Performance: distinguish trends, predict impacts on system operations, diagnose deviations in systems' performance and correct malfunctions.
- iii) Improve or Design Systems: suggest modifications to existing systems and develop new or alternative systems to improve performance.

Examples: draw and interpret an organizational chart; develop a monitoring process; choose a situation needing improvement, break it down, examine it, propose an improvement, and implement it.

e) **Technology:** A worker must be able to work with a variety of technologies.

- i) Select Technology: choose procedures, tools or equipment including computers and related technologies.
- ii) Apply Technologies to Task: understand overall intent and proper procedures for setup and operation of equipment.
- iii) Maintain and Troubleshoot Equipment: Prevent, identify, or solve problems with equipment, including computers and other technologies.

Examples: read equipment descriptions and technical specifications to select equipment to meet needs; set up and assemble appropriate equipment from instructions; read and follow directions for troubleshooting and repairing equipment.