

A. GROUP DYNAMICS AND COMMUNICATION

A1. Understand Importance of Working in a Team Environment

A1.1. Identify the principles and skills of good teamwork.

Performance Objective: The student will be able to identify at least six general principles of good teamwork and discuss the personal responsibilities for each.

TEAMWORK SKILLS	
Effective communication skills	Decisions by consensus
Promote participation	Collaborative decision making
Shared goals	Work cooperatively
Giving feedback skills	Respect for all

A1.2. Demonstrate skills of good teamwork.

Performance Objective: In the classroom and/or work environment and using a checklist of the items in A1.1, the student will be able to consistently demonstrate the skills of good teamwork as judged by the other team members/classmates.

A1.3. Recognize the difference between a team environment workplace with a conventional workplace.

Performance Objective: The student will be able to compare and contrast the employee's role as a team member and individual in the workplace by discussing at least five characteristics of each.

TEAM MEMBER	INDIVIDUAL MEMBER
Group problem-solving	Individual assignments
Draws upon diverse experiences	Draws upon one person's experiences
Skills of many people	Skills of one person
Creativity of many	Creativity of one
Cross functional involvement	One person's job
Customer-supplier relationship	Supervisor-employee relationship
Shared goals	Individual tasks/job

A2. Understand the Etiquette and Importance of Working in a Team Environment

A2.1. Identify interpersonal characteristics of a team player.

Performance Objective: As a team member, the student will be able to openly and consistently share personal feelings, values, beliefs, interests, expectations, assumptions, imagination, and prejudice and listen to and respect the same characteristics and contributions of other team members as recorded by other team members over a period of six team meetings.

A TEAM PLAYER SHOULD:		
Initiate discussions	Elaborate ideas	Keep discussion focused
Suggest procedures	Seek opinions	Summarize
Clarify ideas	Seek information	Ensure all contribute
Share research	Work toward consensus	Clarify problems
Communication skills		

A2.2. Demonstrate the characteristics of a team player.

Performance Objective: With team members using a team player checklist, over the period of five different team meetings (at least one per month), the student will be able to consistently demonstrate the interpersonal characteristics as judged by the other team members.

A2.3. Contrast the role of a team with the role of an individual.

Performance Objective: The student will be able to discuss four differences between the role of the team and the role of the individual and how they work together.

TEAM ROLE	INDIVIDUAL ROLE
Support communication among members	Open and honest communication
Know total process	Know job/tasks
Solve large, complex problems	Solve task problems
Mutual support among members	Work alone
Long-term, systematic studies	Short-terms
Assign roles within the team	Individual role on team

A3. Understand Business and Personal Ethics

A3.1. Identify good personal ethical characteristics* and behaviors.

Performance Objective: The student will be able to define personal ethical characteristics and give five examples related to the self and five examples related to others and the company.

OTHERS AND THE COMPANY	SELF
Respect ideas and beliefs of others	Possess knowledge & skills for the work to be done
Respect needs & goals of others	Accomplish assigned work
Appreciate & support work of others	No intentional unsafe activities
Will not impede work of others	Report injuries & unsafe conditions
Will not jeopardize safety of others	No drugs or alcohol
Will not fail to report injury to others	or working under the influence of
Will not damage property of others	No theft or lying
Insulting or obscene language/conduct	No intentional environmental
No misuse of company time or property	destruction
No fighting, intimidation or coercion	Have no weapons/explosives at work
Goals of others equal to one's own goals	Will not conceal defective work
	Will not falsify reports
	Will promote good housekeeping
	Will not intentionally have poor attendance

A3.2. Demonstrate good personal ethics.

Performance Objective: Using a checklist of personal ethical characteristics, the student will be able to describe from personal experiences situations that were ethical in nature and what was done in those situations that demonstrate the student's ethical values.

A3.3. Identify good ethical business behavior.

Performance Objective: The student will be able to identify who and what should be considered when making ethical decisions in the business community and provide examples of related decisions.

Business Ethics Considers		
Employees	Shareholders/Profits	Management
Environment	National interests	Suppliers
Community	Competitors	Customers
Self		

A3.4. Differentiate between good and poor business ethic practices.

Performance Objective: Given a variety of hypothetical ethical situations, the student will be able to state examples of both a good business practice and the poor business practice for each situation.

GOOD BUSINESS PRACTICES	POOR BUSINESS PRACTICES
Confidentiality and partnership with suppliers and customers	Reveal information and place suppliers and customers against each other
Confidentiality of employees' ethical issues	Reveal (gossip) employee's ethical issues
No gifts or gratuities from suppliers or customers	Take what you can get
Respect individuals and provide equally opportunities to all	Cronyism, good old boys, favoritism
Support community	Disregard community interest

A4. Understand Responsibilities of Employee to Employer and Vice Versa

A4.1. Match employee responsibilities to employer expectations.

Performance Objective: Given a job/position description, the student will be able to:

- identify the knowledge and skills necessary to accept the responsibilities of the position,
- state his/her strengths and weaknesses as they relate to the responsibilities, and provide evidence for each.

A4.2. Match employer responsibilities to employee expectations.

Performance Objective: Given a job/position description and an employer, the student will be able to identify the benefits offered by the employer (including hourly rate/salary, medical, dental, vacation, performance evaluations and merit pay, retirement plans, investment plans-401 K) and be able to compare these with those generally provided within an industry.

A5. Aware of Human Resources Issues (discrimination, harassment, and equality)

A5.1. Define discrimination, harassment, and equality.

Performance Objective: The student will be able to define and give two examples of harassment, discrimination and unequal treatment of employees.

Performance Objective: The student will be able to state how equal rights legislation (Equal Employment Opportunities, Affirmative Action, American Disabilities Act, etc.) affects and supports all employees.

A5.2. Demonstrate nondiscriminatory behavior.

Performance Objective: Given a series of written scenarios, video situations, the student will be able to identify examples of harassment, discrimination or inequality and state what should have been done in each situation.

A6. Understand Methods and Concepts of Problem Solving

A6.1. Explain the value of applying a problem-solving system.

Performance Objective: The student will be able to give characteristics of a systematic problem approach.

Stop and think	Research to discover root causes
Clarify the actual situation	Use consistent, systematic approach
See situation from different points of view (team approach)	

A6.2. Apply a system of problem-solving.

Performance Objective: Given a problem to be solved, the student will be able to apply and record a systematic sequence of steps to solve the problem and demonstrate its success.

1. Identify problem situation	6. Select best tentative solution
2. Gather data	7. Test selected solution
3. Define problem	8. Evaluate test data
4. Identify possible causes	9. Implement solution in the process
5. Identify hypotheses (possible solutions)	10. Monitor solution

A6.3. Identify opportunities for applying problem-solving techniques.

Performance Objective: Given the classroom/workplace environment and a three-month period of time, the student will be able to identify opportunities to apply the problem-solving process in a variety of areas at least once a week.

AREAS OF POTENTIAL APPLICATION		
Process control	Goal setting	Political problems
Customer satisfaction	Conflict resolution	Human relations
Team communication		

A7. Demonstrate Team Member and Leadership Skills and Techniques

A7.1. Distinguish between the roles of a team member and team leader.

Performance Objective: Given the responsibility of the team leader or a team member, the student will be able to state at least six roles and responsibilities of each.

TEAM LEADER ROLE	TEAM MEMBERS' ROLE
Support/facilitate communication among members	Open and honest communication
Clarify customers and suppliers	Be working in the process under study
Be point of communication between team and outside organization	Should represent stages of the process
Avoid dominating the group	Represent different shifts, work areas, trades, professions, and jobs
Call and facilitate all meetings	Consider work on the team a priority
Keep of team records	Contribute fully to team project
Document the process and project	Participate in all meetings and discussions
Oversee preparation of reports and presentations	Has a right to understand all parts of the process
Still function as a team member	Carry out all assignments
Knowledgeable and skilled in Continuous Quality Improvement	Has thorough knowledge of job/tasks
General knowledge of total process	
Enable mutual support among members	
Assign team function roles	
Skilled in conflict resolution	

A7.2. Perform techniques used as a team member.

Performance Objective: Given a job function, a checklist of team member responsibilities, and a project team assignment, the student will be able to meet the responsibilities of a team member to the satisfaction of the team leader and other team members using the same checklist.

A7.3. Perform techniques used as a team leader.

Performance Objective: Given a job function, a checklist of leadership responsibilities, and a process study project team leadership assignment, the student will be able to meet the responsibility of a team leader to the satisfaction of the team members using the same checklist.

A8. Understand the Structure of Typical Manufacturing Organizations

A8.1. Define organizational structures.

Performance Objective: The student will be able to define the basic components of a typical manufacturing process and discuss how organizational structures are necessary for successful communication and plant operations.

MANUFACTURING COMPONENT	DEFINITION - RESPONSIBILITIES
Design/engineering	- the plans for the development of a product
	- the exact measurements and requirements for developing the product
Fabrication/purchase of components	- the building or purchase of individual parts, sections and tools for the product's production
Production/assembly	- the making of multiple parts and sub-assemblies of the product
	- the construction of the final product from the various parts and sections
Quality assurance	- a component of each of the other components

A8.2. Explain how specific organizational structures affect a manufacturing process.

Performance Objective: Given a manufacturing process flow chart and an organizational structure chart, the student will be able to explain the sequence of the process and how the components of the organizational effect the process.

A8.3. Justify the use of specific organizational structures in manufacturing.

Performance Objective: Given a typical organizational structure and production flow chart, the student will be able to explain and discuss the particular knowledge and skills associated with each organizational function and give reasons why each is necessary in the process.

A9. Understand Group Structure and Interactions of a Diverse Work Force

A9.1. Identify the characteristics of a diverse work force.

Performance Objective: The student will be able to identify six elements of a diverse workforce and discuss how each can contribute to the organization/business.

ELEMENTS OF DIVERSITY		
Race	Age	Gender
Disabilities	Ethnic group	Personalities
Work skills	Education	Religion

A9.2. Apply group dynamic principles to manufacturing situations.

Performance Objective: After studying principles of group dynamics and observing how they operate in actual group settings over a period of two weeks and noting them in a journal, the student will be able to identify examples of roles in three of six group processes.

GROUP PROCESSES	
Group decision-making	Group leadership
Group problem-solving	Group creativity
Group diversity and conflicts	Individual contribution/roles

GROUP TASK ROLES	
Initiator-contributor	Information seekers
Opinion seekers	Information givers
Opinion givers	Elaborator
Coordinator	Orienter
Evaluator/critic	Energizer
Procedural technician	Recorder

GROUP BUILDING ROLES	
Encourager	Harmonizer
Expediter	Compromiser
Standard setter	Observer-commentator
Follower	

A9.3. Communicate beyond the work group.

Performance Objective: Given the identification of the group's suppliers and the group's customers, the student will be able to communicate, orally and in writing, to the satisfaction of the group, with customers and with suppliers.

A9.4. Identify and plan for work group human resource requirements.

Performance Objective: Given a statement of work for the group, each student will be able to write and submit to the group, a list of the knowledge and skills necessary for the work to be done and an estimate of time necessary.

A10. Discuss Importance of Organizational Integration in Manufacturing a Product

A10.1.Explain organizational influences on manufacturing processes.

Performance Objective: Given the study of organizational influences, the student will be able to describe how they can improve or diminish effective and efficient manufacturing processes.

ORGANIZATIONAL INFLUENCES	
Employee respect and attitude	Management support
Channels of communication	"Chain of Command"
Vertical and/or horizontal	Cross-functional communication
Top-down and/or bottom-up communication	Cross-functional training
Formal and informal	Cross-functional quality teams
Customer-supplier communication	Location of decision-making

A11. Understand the Responsibilities of Line and Staff Organizations

A11.1.Define line and staff organizational structure.

Performance Objective: Given an organizational chart of a manufacturing operation, the student will be able to identify and list the responsibilities of line and staff organizations.

A12. Understand Electronic Communications in Linking Manufacturing Processes

A12.1. Identify possible electronic communication uses.

Performance Objective: Given three areas of electronic communication, the student will be able to cite at least two examples of electronic communication in each.

ELECTRONIC COMMUNICATIONS		
Person-to-person	Person-to-machine	Machine-to-machine
Spreadsheets	Local networks (LAN)	CAD-CAM
Word processing	Data bases	NC machines
P.I.M. (personal information management)	Engineering documentation (accrual, storage, retrieval)	
Statistical analysis	Wide area networks (WAN)	
Accounting		
Procurement		
Inventory control		
Customer support		

METHODS OF ELECTRONIC COMMUNICATION		
Direct (keyboard, stylist, mouse, scanner)	Via networks and direct link-up	Microwave/radiowave
Telephone (FAX/modem)		

LANGUAGE PLATFORMS		
DOS/WINDOWS	OS2	UNIX
XENIX		

COMMERCIALLY AVAILABLE COMPUTER APPLICATIONS SOFTWARE		
Database	CAD/CAM	Word Processor
Dbase	Autocad	WordPerfect
Paradox	Generic CADD	MS Word
RBase'	TurboCad	Lotus AMI Pro
Foxpro	EasyCad	WordStar
Access		

SPREADSHEET	PERSONAL INFORMATION MANAGER	FLOW CHARTING AND GANDT
Lotus 123	Act	ABC Flow Charting
Excel	Echo	Milestones
	Crossties	

A12.2.Explain the effect of electronic communications versus other communication methods.

Performance Objective: After studying at least five different electronic communication processes and interviewing users, the student will be able to list both positive and negative aspects of each process.

ELECTRONIC COMMUNICATIONS	OTHER COMMUNICATION METHODS
FAX	Meetings
E-mail	Telephone
Modem exchanges	Memos
Local area networks	Person-to-person talk
CAD-CAM	Blue prints
Terminal monitor instructions	Paper instructions
Terminal video demonstrations	Personal demonstrations

A12.3.Select appropriate communication methods.

Performance Objective: Given a variety of needs and audiences, the student will be able to select the best mode of communication.

Audience size	Physical distance
Location of audience	Time constraints/time zones
Formal or informal style	Proprietary or public
Deadlines	Information or discussion
Legal requirements	

A13. Can Facilitate Group Meetings

A13.1.List the characteristics of a good group leader.

Performance Objective: After studying 15 to 20 good group leadership characteristics and observing their application, the student will be able to list 10 characteristics and discuss their value in a group.

FACILITATION SKILLS	
Assure all participate	Assure no person monopolizes discussion.
Plan the meeting, distribute agendas prior to the meeting, and follow agenda during meeting.	Be flexible, good ideas can either be incorporated as they arise or specifically planned for as a topic for the next meeting.
Listen carefully to participants who have ideas and input; focus on their suggestions and solicit other participants' opinions.	Don't allow long-winded speakers to overwhelm the meeting. Require complainers to suggest a resolution to the problem as well.
If there are guest speakers, have that person in the room at a specific point in the meeting, leaving the rest of the time to participants.	Develop sense of community, mutual support, and trust among committee members. A relaxed environment encourages participation and appreciation for associates.
Cultivate ownership by all participants in various facets of the project.	Build on suggestions of participants, encouraging others to join in the discussion.
Clarify concepts by restating them.	Direct energy toward positive action.
Point out similar aspects of differing opinions.	Adjust the level of support and direction to accommodate the needs of the group.
Set the standards of the group.	Relieve tension by diverting attention from the person to the issue.
Encourage participants to contribute by praising their comments and the contribution of others.	Seek information about relevant facts.
Raise questions about the direction of the group.	Ask participants if they are ready to make a decision.
Defend the rights of participants.	Summarize key points.

A13.2. Identify various group processes.

Performance Objective: The student will be able to list the group processes and give them a logical order to satisfy the business needs and the needs of most of the participants as judged by the group members.

GROUP PROCESSES/STEP	
Step 1	Identify problem or issue needing to be resolved.
Step 2	Define the nature of the problem.
Step 3	Analyze the nature of the problem.
Step 4	Recommend possible solutions.
Step 5	Test possible solutions against selected criteria and select the most satisfactory solution.
Step 6	Implement the best solution.

A13.3. Identify components of group dynamics.

Performance Objective: After observing and participating in group processes and using A9.2, A13.1 and A13.2, the student will be able to list a minimum of 15 components and influences on the group processes, the needs of the group, and the problems to be solved.

OTHER INFLUENCES ON GROUP DYNAMICS	
Leader's experience	Need for anonymity
Time restrictions	Technique characteristics
Need for structure	Preferred outcomes
Group or individual problems	Experience of participants
Need for recognition	Budgetary restraints

A13.4. Demonstrate group leadership and facilitation skills.

Performance Objective: Using the skills identified in A13.1, the student will be able to accept the responsibilities of a group leader.

A14. Write Manufacturing Instructions Logically and Efficiently

A14.1. List the steps of specific manufacturing processes.

Performance Objective: Given the components of the manufacturing process as identified in A.8.1 (Design/Engineering, Fabrication/Purchase of Components, Production/Assembly), the student will be able to develop reasonable manufacturing instructions for a specific manufacturing situation.

POSSIBLE STEPS FOR DEVELOPING LOGICAL MANUFACTURING PROCESSES:	
Step 1	Describe the manufacturing task to be done.
Step 2	List the materials and tools needed to do the job.
Step 3	Prepare a schedule.
Step 4	List human resources needed to do the job on schedule.
Step 5	Outline the skills required of personnel involved.
Step 6	Carefully explain the safety precautions and personal protective equipment required for the job.
Step 7	Explain each step required in the manufacturing process for a specific task.
Step 8	Describe how to clean up after working on the job for a day, including safety and environmental precautions.
Step 9	Verify the successful completion of the manufacturing process.

A14.2. Write in complete sentences.

Performance Objective: Given a need for manufacturing instructions, the student will be able to write complete sentences with no phrases or fragments.

All instructions must be written in complete sentences, with subject and predicate, to ensure that instructions are clear and that awkward or incomplete sentences are not the cause of misunderstanding on the part of the employee who is reading manufacturing instructions. Unclear text can result in injury or death in a manufacturing environment.

A14.3. Use correct punctuation.

Performance Objective: The student will be able to use correct punctuation in all written documents.

A14.4. Use correct spelling.

Performance Objective: The student will be able to look up words and definitions in a standard dictionary and verify the spelling and meaning in the context of the written material.

Performance Objective: The student will be able to use and understand the limitations of a spell check function on a word processor.

A14.5. Write with accuracy, brevity, and clarity.

Performance Objective: Given the task to write instructions for a machine's operation or any other writing, the student will be able to clearly, accurately, and briefly write the instructions.

A15. Write and Present Technical Reports

A15.1. Organize material with a logical flow.

Performance Objective: Given an assignment to present a report on a technical process, the student will be able to write and present a logical flow of information, including the use of charts and graphs, to a clear conclusion.

LOGICAL FLOW OF INFORMATION	
Step 1	Introduction: Purpose and scope
Step 2	Explain who is affected by this information
Step 3	Goals: What do you hope to accomplish?
Step 4	Information chunking into progressively deeper levels
Step 5	Implementation of the information as appropriate
Step 6	Conclusion and recommendations for action

A15.2.Organize an oral presentation.

Performance Objective: Given the task of organizing an oral presentation, the student will be able to provide evidence, in the form of preliminary notes, that the following issues were considered:

- Carefully consider the topic, doing research and gathering materials.
- Determine your audience and gear the presentation to them.
- Decide the focus of the presentation and whether or not visual aids are needed for audience's understanding of your topic.
- Plan interesting opening remarks that carry the audience into the flow of the presentation.
- Be familiar with the facility where you will be presenting and make sure necessary technical equipment will be there and set up. Make note of where the lights, microphone, podium (Do you want one?), wastebaskets, and restrooms are.
- Set up your notes in a concise or easy to follow way, such as on note cards or on several pages with lots of white space.
- Make sure you have done your homework; careless presentations offend the audience.

A15.3.Demonstrate good speaking characteristics.

Performance Objective: After cultivating and practicing good speaking characteristics, the student will be able to make an oral presentation effectively, without losing the attention of the audience.

Checklist Items:

1. Make eye contact with members of your audience, moving your gaze from one person to another as you speak.
2. Dress appropriately for the occasion. The audience should be focusing on what you say, not what you are wearing.
3. Stand in a relaxed manner, using good posture, and avoid nervous fiddling, such as clicking a ball-point pen. Keep your hands quietly on the podium or relaxed at your sides.
4. Walk some as you speak if the sound system allows. Moving around is more interesting for the audience.
5. Involve the audience throughout the presentation with eye contact, questions, workshop techniques, and other interactive measures.
6. If your kind of presentation does not call for interaction, keep the pace lively, changing the focus from visuals to handouts to flipchart, etc.
7. Don't be afraid to be funny, but make sure the humor is not at anyone else's expense, especially someone in the room. It's OK to laugh at yourself.
8. Be yourself.

A15.4.Demonstrate appropriate presentation demeanor.

Performance Objective: The student will be able to present in a professional manner by applying all facets of a good speaking demeanor.

The behavior of the presenter is that action speaks louder than words. Examples of good speaking demeanor are:

- Speak clearly and with confidence in yourself and the material being presented.
- Scan the faces of the audience for signs of waning interest and step up the pace or shift directions if you are losing them.
- Have a plan B, maybe a plan C, if you are losing the audience.
- Distribute handouts either at the beginning of the program or at the end; the confusion of passing out papers in the middle of a presentation draws the interest away from the speaker.
- Have overheads that can be seen and read by all members of the audience.
- Express an interest in all questions, even those that seem silly or shallow.
- Express your pleasure at being asked to speak at the start. Let the audience know you are glad to be there. This is a compliment to them.
- Thank the audience at the end of your presentation, and take time to mingle and converse afterwards if this is appropriate.
- Offer to mail materials to interested participants later and take their business cards. They'll feel singled out and special.

A16. Establish Customer Needs

A16.1.Interpret and clarify specifications prepared by others.

Performance Objective: Given a customer's request to produce an item, the student will be able to converse with the customer, restate the requirements, and clarify specifications to the satisfaction of the customer.

A16.2. Communicate with customer to clearly define requirements.

Performance Objective: The student will be able to elicit from the customer clear statements of requirements and specifications and share related documentation throughout the process to assure quality improvement and customer satisfaction.

It is important to ask the customer questions about the service and product and to be open and receptive to those responses. At no time should the manufacturing representative become defensive and be offended by criticisms from the customer.