

# Manufacturing Technology Advisory Group (MTAG) Skill Competencies

1 - Limited practice; has practiced job during training program; additional training is required.

2 - Moderately skilled; has performed job independently during the training program; limited additional training may be required.

3 - Skilled; can perform job independently with no additional training.

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<b>A. Group Dynamics &amp; Communication</b>				<b>F. Shop Skills</b>			
1. understand importance of working in a team environment				1. display knowledge of basic shop math			
2. understand etiquette of working in a team environment				2. show working knowledge of fundamental shop skills			
3. understand business and personal ethics				3. understand how tools and fixtures are used in manufacturing			
4. understand responsibilities of employee to employer & vice-versa				4. demonstrate use of common machine tools			
5. aware of discrimination, harassment, and equality				5. demonstrate basic skills of fabricating, assembling, and testing a product			
6. understand methods and concepts of problem solving				6. demonstrate proper use of metal and wood-working tools			
7. demonstrate team and leadership skills				7. select appropriate tools for layouts and inspection			
8. understand the structure of typical manufacturing organizations				8. demonstrate basic electrical wiring skills			
9. understand interactions of a diverse work force				9. identify tools and procedures to form, cut, finish, fasten, and repair			
10. discuss importance of organizational integration in manufacturing a product				10. demonstrate fundamentals of chemical processes in manufacturing			
11. understand responsibilities of line and staff organizations				11. know how to lessen the need for layout and inspections with work-saving devices			
12. understand electronic communications in linking manufacturing processes				<b>G. Business Economics</b>			
13. able to facilitate group meetings				1. define profit and loss and explain why profit is important			
14. write instructions logically and efficiently				2. discuss impact of customer satisfaction on overhead and reputation			
15. write and present technical reports				3. understand real and hidden costs of an accident			
<b>B. Measurement</b>				4. define value added			
1. describe measurement's role in manufacturing				5. understand impact of learning curve on costing and pricing			
2. identify types of measurement used in manufacturing				6. name factors to consider in determining unit cost and price			
3. understand the importance of calibrating instruments				7. describe how profits are distributed			
4. select proper tools for measurement				8. name factors to be considered in make or buy decisions			
5. convert units from one measurement system to another				9. list employee benefits commonly provided by industry			
6. lists characteristics of measurement tools				10. understand how cost, collection, and reporting systems are structured			
7. perform measurements with general and precision tools				11. define overhead and list elements that can be included			
8. describe common measuring errors and proper techniques				<b>H. Resource Management &amp; Manufacturing Computing</b>			
9. describe measuring systems				1. understand how and where computers are used in manufacturing			
<b>C. Safety and Health</b>				2. demonstrate knowledge of computer software applications in manufacturing			
1. follow safety manuals, instructions, and requirements				3. understand how production rates are determined			
2. demonstrate proper use of protective equipment				4. understand inventory control, material forecasting, and capacity planning			
3. name and describe fire hazards and how to control them				5. knowledge of word processing, spreadsheets, databases, statistical, and graphical software			
4. recognize unsafe practice in forming, separating, and combining processes				6. understand and apply budgeting and master scheduling techniques			
5. evaluate safety and fitness of tools, materials, fixtures, and jigs				<b>I. Product &amp; Process Control</b>			
6. apply American Red Cross CPR and First Aid procedures				1. define product and process control and explain the importance of each			
7. identify and classify hazardous waste and proper collection methods				2. apply statistical techniques to monitor and improve processes			
8. define ergonomics and discuss the impact on design, productivity, and safety				3. explain just in time inventory			
9. awareness of state and federal EPA regulations				4. explain factors that affect work in progress			
<b>D. Quality Assurance</b>				5. design a flow diagram for producing a product			
1. define quality in manufacturing				6. define roles of designers and engineers in developing a product			
2. understand how quality can improve profit				7. explain the importance of configuration control			
3. apply principles of continuous quality improvement				8. list major factors in process planning			
4. understand and apply statistical process control				9. understand design for producibility			
5. evaluate data to monitor production processes				<b>J. Labor in Industry</b>			
6. analyze consumer problems caused by manufacturing and recommend solutions				1. understand labor's role in employee wages, benefits, and safety issues			
7. establish plans and procedures to maintain quality				2. understand role of labor unions in the economy			
<b>E. Print Interpretation</b>				3. know what a grievance is and how it may be pursued			
1. interpret notes and dimensions to determine sizes, materials, and other requirements				4. know what a shop steward does			
2. identify and explain basis items in detailed drawings				5. understand protections of collective bargaining and a negotiated contract			
3. identify basic types of drawing and list the purposes of each				6. understand role of a union member			
4. interpret drawing elements regarding layout, plan, production, and inspection				7. knowledge of labor history and why unions were formed			