

# Industrial Manufacturing Advanced

## Certificate Outcomes

1. Demonstrate shop safety practices and use of PPE
2. Identify major tools of the trade: saws, drills, lathes, mills, and grinders
3. Measure with precision measuring tools
4. Demonstrate proper handling, use, and storage of tool.
5. Describe the Occupational Safety and Health Act, 29CFR1926
6. Identify the common causes of accidents and fatalities in hazardous areas
7. Recognize unsafe conditions and unsafe acts
8. Identify abatement techniques for hazards found within manufacturing
9. Follow job plans and drawings to manufacture and complete classroom project.
10. Collaborate in teams to effectively produce a standardized product
11. Demonstrate all aspects of the basic process of manufacturing including production, inspection, and finishing
12. Demonstrate the following welding techniques:
  - A. Oxygen fuel track burner
  - B. Hand held oxygen fuel cutting
  - C. Plasma use and cautions
  - D. Handheld plasma
  - E. Handheld fleshing tip on cutting torch
  - F. Shield metal arc weld – stick
  - G. Flux cored arc weld – wire
  - H. Gas metal arc weld – hard wire
  - I. Slag shield (coating covering weld)
  - J. Welding Hazards
  - K. Fumes/Smoke
  - L. Heat/Sparks
  - M. Slag/glass particles
  - N. Grounding
  - O. Surroundings
  - P. Ventilation
  - Q. Clothing – leather, canvas, cotton
  - R. Tungsten Inert Gas (TIG) welding process
  - S. Arc gouging
13. Provide English language communication strategies and tools to enable participants to grow and more fully participate in the implementation of the concepts of Lean
14. Learn the language of Lean manufacturing in order to better assimilate the concepts
15. Classroom style learning with interactive simulations
16. Participants learn and develop the tools to redesign a fictitious company's business using green techniques in order to improve customer and employee satisfaction
17. Apply methods of improving overall
18. Provide participants a common language and understanding of Lean
19. Learn, understand and identify the 10 wastes of CLOSED MITT

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## PROGRAM OUTCOMES

- Describe and utilize manufacturing techniques, tools and safety practices. (SLO 1, 2, 3, 4, 5, 7)
- Apply the concepts of diversified manufacturing, OSHA standards, Composites, Welding and LEAN concepts to promote quality and safe production and designs. (SLO 1,2,3,4,7)
- Employ the appropriate actions regarding workplace culture, safety and industry standards; (SLO 3, 6)
- Evaluate one's own capabilities and limitations, identify individual needs of continued growth is able to seek consultation from superiors. (SLO 3, 6)
- Communicate effectively and appropriately in the workplace. (SLO 1, 3, 4, 6)
- Practice within the standards established by the profession, and identify the parameters of accountability. (SLO 2, 4, 5, 6, 7)