AM210
Design for Additive Manufacturing with Metals

Module 1 – New Possibilities with Additive Manufacturing
1. Course Introduction
2. Benefits of AM
3. The Challenges of Additive Manufacturing
4. Use Cases and Applications of Additive Manufacturing

Module 2 – Design for Additive Manufacturing and the Design Engineer
5. Additive Manufacturing and the Design Engineer
6. Design for Additive Manufacturing (DfAM) Use Cases

Module 3 – Replicate with Additive Manufacturing
7. Why Replicate with Additive Manufacturing
8. When to Replicate?

Module 4 – Preparing a Part for Additive Manufacturing
9. Using CAD Software to Create 3D Models
10. The Build Plan
11. The Process Plan

Module 5 – Post Process Planning
12. Post Process Planning
13. A Case Study Analysis of Additive Manufacturing Post-Processing
14. Safety Considerations

Module 6 – Business Considerations
15. Business Considerations
16. Improving Consistency
17. Reducing Risk & Monitoring Results
Module 7 – Adapt for Additive Manufacturing
18. Deciding When to Adapt for Additive Manufacturing
19. Adapt for Additive Manufacturing: Techniques, Constraints, and Common Risks
21. Case Study: Oil and Gas Latticed Part

Module 8 – Optimize for Additive Manufacturing
22. Introduction: Optimizing Designs for Additive Manufacturing
23. Optimize for Additive Manufacturing: Software Takes the Lead
24. Weighing the Pros and Cons of an Optimized Design
25. Optimizing Case Studies: Oil/Gas Component and Race Car Upright

Module 9 – Preparing for Build
26. Preflight Checklist
27. Course Recap
28. Final Exam