

- **Advanced Manufacturing Theories (Class) – 80 hrs.**
 - Orientation
 - Lean Manufacturing
 - Process repeatability and Safety- Quality-Cost impact
 - Lean Overview and 5S – Sort, Set in Order, Shine, Standardization, Self-discipline/Sustain
 - Standard Work
 - Job Instruction
 - Process Diagnostics
 - Building in Quality
 - Just-in-Time
 - Continuous Improvement (Kaizen)
 - Standard Work Tools -Process repeatability and Safety- Quality-Cost impact
 - Kaizen Mindset - Reduction / elimination of waste *muda*
 - Problem Solving – Critical Thinking
 - Creative Problem Solving / Strategic Thinking
 - Statistical Process Control
 - Root Cause Analysis
 - Safety First
 - OSHA and Environmentally Awareness
 - Manufacturing Workplace Environment
 - Team Work – Team Building/Generations
 - Work Ethics – Professionalism
 - Conflict Resolution

Pre and Post test evaluations conducted during class sessions. 70% pass rate needed for certificate and the option of 6 Ivy Tech crosswalk credits for continuing education. (INDT 106-Introduction to the Workplace and Safety and ADMF 201-Lean Manufacturing)

- **Advanced Manufacturing Talents (Labs) – 80 hrs.**
 - Production Simulation (line simulation)
 - Assembly of Lego cars in a production environment using a moving conveyer.
 - Fundamental Skills – Assembly Techniques & “Knack” Training
 - Functional skills trainers – Proper application of how to handle and insert bolts and nuts as well as proper operation of torque tools in an assembly environment while being accurate and efficient.
 - Sequencing – Logistics training to help train students to be accurate and efficient in selecting parts and how logistics supports a production environment
 - Handling Bolts & Nuts – Training students the proper technique to hold bolts and nuts in their hands and orient them to the torque gun once again while being accurate and efficient.
 - Baoding Balls – Using golf balls to teach students how to rotate objects in their hands in a comfortable and efficient way to make them more efficient in their movements.
 - Understanding Blueprints – Drawings
 - Mastering Measurement -Tape, Mic, Calipers, Dials-Height-Pin Gages
 - Quality
 - Teaching students the importance of Quality and how it can affect Costs, Profits and Safety
 - Physical Wellness
 - Conditioning & Injury Prevention
 - Dexterity & Agility – Eye/Hand coordination
 - Flexibility -Stretching routinesEndurance Building