- **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