# Homework #8 Plant Tour

**Purpose of Tour**: show Manufacturing Processes & Systems concepts covered in the course in action with all the associated noise and commotion. Videos aren’t as robust as they don’t capture the size, action and all the associated noise and commotion.

**Tour:** By October 15 I will have finalize arrangements for tours. There will be multiple tours. Students will select one that best suits their interest and schedule. If a student has a scheduling conflict they should arrange a tour themselves. See Hwk#7 for possibilities. Distance Learning students are encouraged to arrange a tour. If there are none in their area they may use three course videos; in priority order they are: 28-2 “Tour Tesla”, 28-3 “Durango Build Process”, and 10-1 “Chrysler Paint Plant” (both are tours of Chrysler’s Newark plant)].

**Purpose of Homework:** encourage “cerebral” linking of course topics and key concepts to observations of manufacturing.

May submit this homework in pencil & on this sheet, must be legible.

15 pts 1. Cite 5 observations noting source (which video) on Part 1 **“Processes for Discrete Parts”** topics:

Mfg. Basics

Materials

Castings

Plastic Molding & Shaping

Composites

Forming

Machining

Joining & Assembly (at least one observation on Joining or Assembly)

Surfaces

Mat'l Handling-Unit Loads (at least one observation on Materials Handling-Unit Loads)

Process Selection

12 pts 2. Cite 4 observations noting source (which video) on Part 2 **“Technology”** topics:

Quality Concepts

Quality Methods/SPC

Machine Vision, Inspection, Metrology

Automation, Numerical & Auto Controls

Ergonomics (at least one observation on Ergonomics)

Industrial Robots

12 pts 3. Cite 4 observations noting source on Part 3 & 4 **“Continuous Processes Systems & Industries,”** & **“Current Advances,”** topics:

Mat'l Handling-Bulk Solids

Packaging

Web Processes & Web Handling

Microelectronics

Automotive

other industries

Just-In-Time

Lean Mfg.

Simulation

Maintenance & Reliability

Computer Integrated Mfg (CAD/CAM)

Safety

Sustainable Mfg. (Waste-Environment)

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15 pts 4. Describe one of the Joining or Assembly observations in Question 1 in more detail (6 pts). Explain how it relates to one joining/assembly concept (4 pts) and to one general manufacturing issue of cost, quality, delivery, productivity, environment, or automation (5 pts).

15 pts 5. Describe an Ergonomic observation in more detail (6 pts). Explain how it relates to one ergonomic concept (4 pts) and to one general manufacturing issue of cost, quality, delivery, productivity, environment, or automation (5 pts).

15 pts 6. Describe a Materials Handling observation in more detail (6 pts) something besides the crane in the Mustang video. Note its purpose/value (or cite at least one materials handling concept involved) (4 pts) and one way this observation relates a general manufacturing issue of cost, quality, delivery, productivity, environment, or automation. (5 pts)

15 pts 7. Describe one of observations in Question 3 in more detail (6 pts). Be sure to cite at least one concept involved (4 pts) and at least one way it relates a general manufacturing issue of cost, quality, delivery, productivity, environment, or automation. (5 pts)