**Syllabus Robotics & Industrial Processing Class**

All students will maintain an engineering notebook for lab work ethics and participation.

Class outline:

1. Engineering 101
2. Engineering a Project
   1. Concepts and planning
   2. Who will do it?
   3. Make, Break, or Buy
   4. ROI
3. System level components/integration
   1. Electrical
      1. Hard programed vs. AI
      2. PLC
      3. Computer
   2. Pneumatics/hydraulics – **SAFETY**
   3. Drive systems
   4. Motion control
4. System level
   1. Factory level
   2. Process center
   3. Machine Cell
5. Specialized components
6. Conveyer systems
7. Robots
   1. Mounted arm
      1. Degree-of-Freedom
      2. Types of bots
      3. Actuation
      4. End-effector
   2. AGV – Automated/Autonomous Guided Vehicle