



Performance Based Objectives – FANUC*

PBO No.	Performance Based Objective
F-1	Locate & identify all components of the robotic cell including all equipment, operator interfaces, tooling, perimeter guarding, safety devices, etc. (Walk through with the Instructor – AMTEC Trainer) (Could be written with Pictures)
F-2	Locate & identify the main components of the robot including the controller, manipulator arm, teach pendant, standard operator panel, dress-out, cables, connections, and end-of-arm-tooling or vacuum components. (Walk through with the Instructor – AMTEC Trainer) (Could be written with Pictures)
F-3	Identify & practice all safety considerations related to operating the robotic cell. (Instructor demonstration with Student's full participation – AMTEC Trainer)
F-4	Identify the proper names for the axis for both Joint and Cartesian coordinate systems as applicable to the robot. (Written)
F-5	Demonstrate the proper power-up and shut-down sequence of the robotic cell.
F-6	Perform the Cold Start procedure and describe the benefit. (Book procedure exercise)
F-7	Use the teach pendant to identify & clear alarms that would inhibit robotic cell operation. View alarm history. (Book procedure exercise)
F-8	Reset and clear teach pendant errors. (Book procedure exercise)
F-33	Predict the movement of the robot when operating in the following coordinate system: Joint, World, Tool, User
F-10	Match each teach pendant button to their proper name & function. (Hands-on with written exercise and book reference)
F-11	Navigate & match teach pendant screens to their proper name & function. (Hands-on with written exercise and book reference)
F-12	Jog the robot in each coordinate system and document the arm motion. (Hands-on with written exercise and book reference)
F-13	Adjust the robot jog speed. (Hands-on exercise with book reference)
F-34	Repeatedly demonstrate the ability to teach a robot out of a fixture with zero moves in the wrong direction.
F-14	Set-up and test software axis limits. (Hands-on exercise with book reference)
F-15	Master the robot using zero degree mastering and single axis mastering procedures. (Hands-on exercise with book reference)
F-16	Set-up & test a specific tool center point (TCP). (Hands-on exercise with book reference)
F-17	Demonstrate Tool frame set-up procedure. (Hands-on exercise with book reference)
F-18	Perform the User frame (RTCP) set-up procedure. (Hands-on exercise with book reference)
F-19	Perform the Jog frame set-up procedure. (Hands-on exercise with book reference)
F-20	Set-up collision guard sensitivity. (Hands-on exercise with book reference)
F-36	Demonstrate how to view the position registers and how to "move to" and "record" a new position.
F-21	Edit the physical location of selected points in a given robot program
F-22	Create, edit, & test run material handling programs in T1 & T2. (Hands-on exercise with book reference)





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F-23	Adjust the program speed before testing programs. (Book reference)
F-35	Demonstrate how to monitor I/O and to toggle I/O.
F-24	Create and use MACRO programs. (Hands-on exercise with book reference)
F-25	Perform the brake release procedure. (Lab exercise)
F-26	Demonstrate how to recover from alarms during production. (Lab exercise)
F-27	Monitor specific Data register & I/O status. (Hands-on exercise with book reference)
F-28	Manually operate (using the teach pendant) the gripper clamps to open & close or vacuum. (Lab exercise)
F-29	Manipulate (simulate) I/O through the Teach Pendant. (Hands-on exercise with book reference)
F-30	Back-up & restore robot program files using a flash drive. (Hands-on exercise with book reference)
F-31	Review plant robot application programs and identify specific I/O assignments used. (Classroom written exercise with robot programs from plant)
F-32	Review plant robot interface drawings to identify I/O interface between robot, host controller, end-of-arm-tooling, peripheral devices, etc. (written exercise with robot interface drawings from plant)

* This course utilizes the "Handling Tool - Operations and Programming." Although, when evaluating the plant programs and interfaces (PBO's 31 and 32) other applications will be considered depending upon the availability of plant supplied prints and programs.

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