

# FANUC

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## **FANUC Collaborative Robot Instructor**

## General Assessment Information

### Blueprint Contents

General Assessment Information  
Written Assessment Information

Specific Competencies Covered in the Test  
Sample Written Items

**Test Type:** The FANUC Collaborative Robot Instructor national credentialing assessment is based on FANUC's industry recognized CERT Program, inclusive of FANUC's CRX Robot Collaborative Operations and Programming with instruction provided by a FANUC certified academic instructor. Eligible participants will earn the FANUC Certified Collaborative Robot Operator certification.



48.0501 Machine Tool  
Technology/Machinist



Science, Technology,  
Engineering, and Mathematics



51-4011.00 - Computer-Controlled  
Machine Tool Operators,  
Metal and Plastic

## Written Assessment

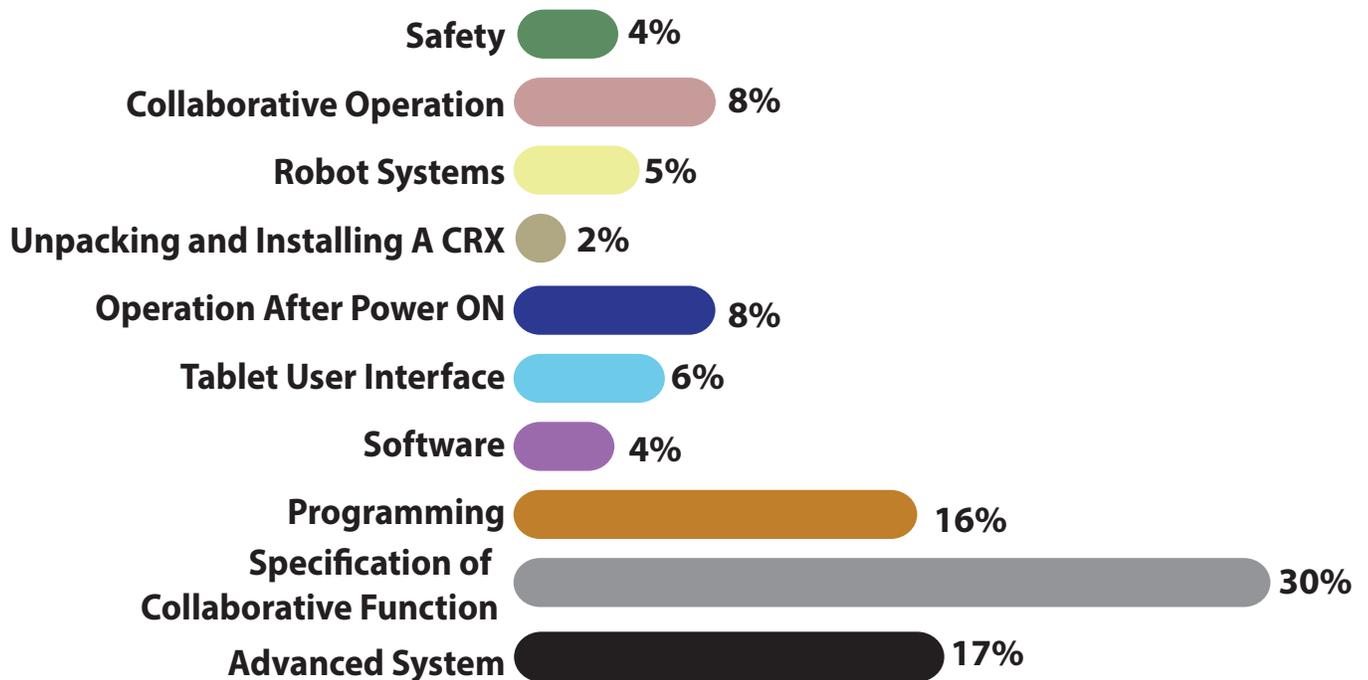
Written assessments consist of questions to measure an individual's factual theoretical knowledge.

**Administration Time:** 3 hours

**Number of Questions:** 108

**Number of Sessions:** This assessment may be administered in one, two, or three sessions.

### Areas Covered



## Specific Standards and Competencies Included in this Assessment

### **Safety**

- Describe safety for machine, external devices, and robot

### **Collaborative Operation**

- Describe the purpose and operation of the collaborative robot
- Determine LED status, appropriate forces for contact, and the robot system

### **Robot Systems**

- Robot system overview

### **Unpacking and Installing A CRX**

- Identify I/F specifications and equipment mounting

### **Operation After Power ON**

- Discuss Tablet TP login to a controller and iHMI guides
- Confirm payload

### **Tablet User Interface**

- Describe Tablet UI, Status Bar, and Menu
- Describe manual robot operations and controller backup/restore

### **Software**

- Describe software load, updating software, and plugin function

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## Specific Standards and Competencies (continued)

### **Programming**

- Describe motion programming and create and edit a program
- Identify icon instructions
- Describe Editor 3D Robot View
- Picking a workpiece and executing a program

### **Specification of Collaborative Function**

- Describe programming TIP and Contact Stop
- Describe push to escape and force/Payload monitor
- Describe speed limit, retreat after stop, and safety output setting
- Describe variable payload compensation, auto status check, and auto resume function
- Confirm payload setup and payload change distance

### **Advanced System**

- Describe DCS basic position check function
- Describe DCS Safe: I/O Connect function
- Identify limit picking area
- Discuss switching between Contact Stop force limits and high-speed mode with Contact Stop disabled

## Sample Questions

**The standard method of manually operating the CRX robot are**

- A. using the jog operation, the MPG jog operations, and manual guided teach
- B. directly entering joint coordinates in robot operations panel
- C. connecting a joystick to the controller
- D. connecting a touch pad to the controller

**What controller I/O signal type is used to change the state of the EE interface connector?**

- A. UOP Outputs
- B. SOP Outputs
- C. Digital Outputs
- D. Robot Outputs

**During Payload Confirmation, it is best practice to**

- A. apply additional force to the robot
- B. have no robot contact and active payload value must be set correctly
- C. have the robot in zero position and all I/O turned off
- D. fixture the robot with shipping brackets and no payload

**When adjusting the view in the Editor 3D Robot View, using two fingers will**

- A. Zoom
- B. Pan
- C. Rotate
- D. Exit

**The active/enabled Contact Stop limit is displayed with a**

- A. +
- B. =
- C. !
- D. @

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## Sample Questions (continued)

**In the DCS Collaborative robot screen what function can be assigned non-safe outputs?**

- A. Auto Status Check Warning
- B. High Speed Enabled
- C. Speed Clamping Enabled
- D. Auto Resume Disabled

**When AUTO Resume is Enabled, and a Contact Stop occurs**

- A. a Cycle Start must be issued to have the program continue
- B. the program continues after a defined time period expires
- C. the Reset is pressed to have the program continue
- D. the program continues immediately

**Programming a collaborative robot requires the timing of the payload change to occur before a part is picked or placed. Changing the payload will temporarily**

- A. change the Contact Stop to the highest limit
- B. disable the Contact Stop
- C. pause the robot program
- D. change the Contact Stop to the lowest limit

**The DCS Cartesian Position Check Zone (Working-Diagonal) uses \_\_\_\_\_ to define the boundaries of the zone's volume.**

- A. line segments
- B. two points
- C. three points
- D. a position and size

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### Sample Questions (continued)

**When using PAYLOAD instruction temporarily disable contact stop when picking or placing a workpiece, what method can be used to prevent Contact Stop from being disabled unexpectedly?**

- A. enter and use only valid payload instruction in all TP programs
- B. use DCS Cartesian position check and set Safe I/O of the zone as a disabling input for Payload Change Distance
- C. set Payload Change Distance to very small values in all X, Y, and Z directions
- D. periodically check Contact Stop status within TP program to confirm it is enabled