NOCTI
Partner Credential Blueprint

FANUC

FANUC Collaborative Robot Operator

Code: 9298 / Version: 01

General Assessment Information

Blueprint Contents

Test Type: The FANUC Collaborative Robot Operator 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.

CIP Code

48.0501 Machine Tool Technology/Machinist

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Science, Technology, Engineering, and Mathematics

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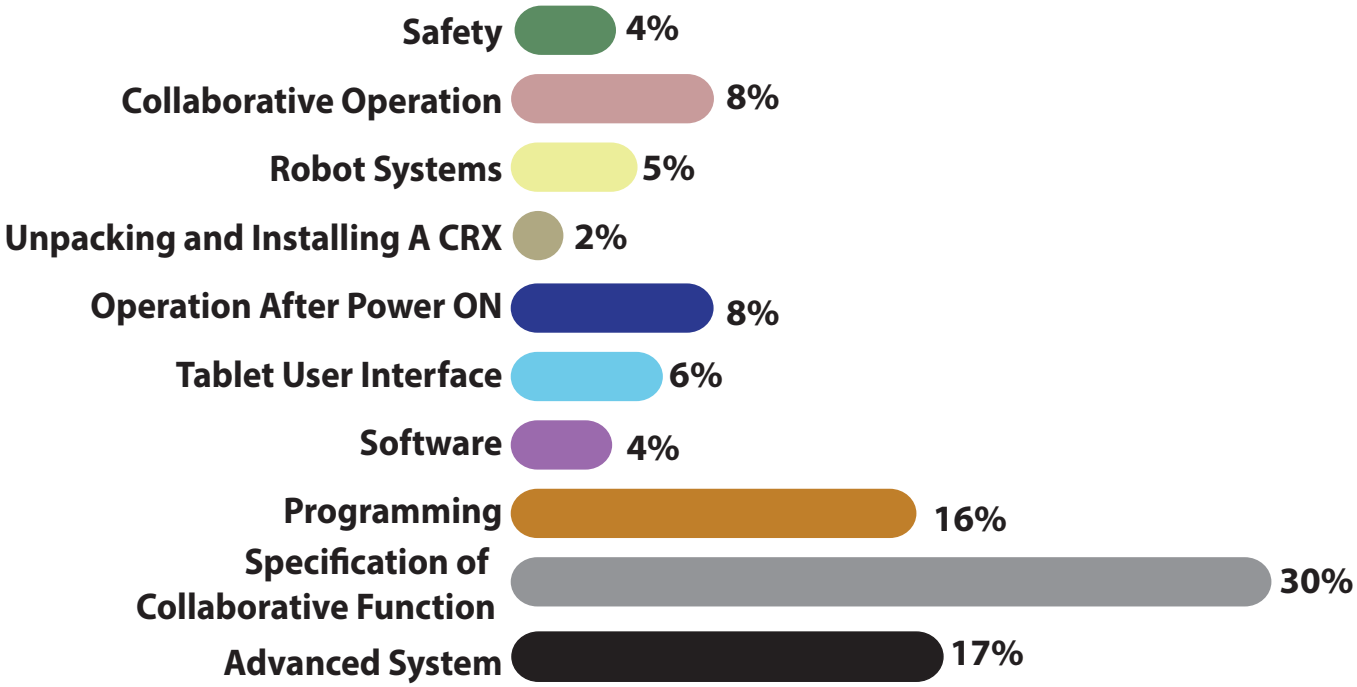
51-4011.00 - Computer-Controlled Machine Tool Operators, Metal and Plastic

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 <u>non-safe</u> 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