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| Course Name | : | Industrial Robotics – Beginner Level |
| Course Code | : | IRB01 |
| Course Objective | | |
| To provide participants the knowledge of what industrial robotics is and how it differs from other types of robotics and how these industrial robots’ functions. | | |
| Duration of Course = 24 Hours | | |
| Lecture wise breakup | | Number of Hours |
| 1. | Basic of Industrial Robotics Introduction to Robotics - Fields of application for industrial robots - Overview of the components of a robot system - Basics of robotics-classification of Robots-Frame & its Types-Work Envelope-End Effectors-Transmission Elements-Control System-Basics of robotics programming-- Industrial Robot (ABB) - Robot controller (IRC5) - Moving the robot - Start up - Executing robot programs | 8 |
| 2. | Robot Analysis - Learning different Robot configurations- Robot Kinematics -Robot Kinematics Exercises | 8 |
| 3. | Introduction to Industrial Robot Operation and Programming Robots Operation using Teach Pendant - Jogging, Axis Mode, Linear Mode, Reorientation-Motion Instruction -MoveJ, MoveL, Move C- RAPID Program structure, Routines, Modules, Program Data, Saving and loading of User programs and Parameters-Programming Example | 8 |
| Course Outcome | | |
| <ul style="list-style-type: none"> Participant will be able to clear the basic concepts of Industrial Robotics. Participant will be able to operate & learn basic programming of ABB Robot. | | |

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| Course name | : | Industrial Robotics – Intermediate Level | |
| Course Code | : | IRB02 | |
| Course Objective: To make participant able to use robot simulation software to create their own robot cell and to simulate them like it is done in industries. | | | |
| Duration of Course: 24 Hours | | | |
| Lecture wise breakup | | | Number of Hours |
| 1. | Material Handling Application Introduction - Start up - Overview of the components of a robot system -Basics of Material Handling and its area of applications- Creating Work Cell- Creating End Effector-Attachment of End Effector-TCP Creation-Work Envelope-I/O Configuration-Programming of Material Handling Application-Simulation of Material handling & Robot Operation. | | 24 |
| Course Outcome | | | |
| <ul style="list-style-type: none"> After successful completion of this course, participant will able to apply his skills in Robotic Material Handling Applications | | | |

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|---|---|---|
| Course name | : | Industrial Robotics – Intermediate Level |
| Course Code | : | IRB03 |
| Course Objective: To make participant able to use robot simulation software to create their own robot cell and to simulate them like it is done in industries. | | |
| Duration of Course: 24 Hours | | |
| Lecture wise breakup | | Number of Hours |
| 1. | ARC Welding Application Introduction - Start up - Overview of the components of a robot system – welding and its types-basics of Arc welding and its area of applications- Creating Work Cell-Creating End Effector-Attachment of End Effector-TCP Creation-Work Envelope-I/O Configuration-Programming of Arc Welding Application-Simulation of Arc Welding Application & Robot Operation. | 24 |
| Course Outcome | | |
| <ul style="list-style-type: none"> After successful completion of this course, participant will able to apply his skills in Robotic Arc Welding Applications | | |

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|---|---|---|
| Course Name | : | Industrial Robotics – Advanced Level |
| Course code | : | IRB04 |
| Course Objective | | |
| To make participant able to use robot simulation software to create their own robot cell and to simulate them like it is done in industries. | | |
| Duration of Course: 24 Hours | | |
| Lecture wise breakup | | Number of Hours |
| 1. | Spot Welding Application Introduction - Start up - Overview of the components of a robot –Spot Welding and its area of applications -Creating Work Cell-Creating End Effector-Attachment of end effector-TCP Creation-Work Envelope-I/O Configuration-Programming of spot welding Application-Simulation of spot welding Application-Process parameters of spot Welding-Tip dressing. | 24 |
| Course Outcome | | |
| <ul style="list-style-type: none"> After successful completion of this course, participant will able to apply his skills in Robotic Spot Welding Applications. | | |