Human-Robot Interaction Training Course: Safe Design, Trust and Deployment Choices

27 September – 1 October 2027
Rome

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Programme Summary

Human-robot interaction is the subject of this one-week training course for operations, safety and technology leaders at managerial level who approve robot pilots, ending in a deployment decision pack for one robot application. Robots now work beside people in factories, warehouses, hospitals and public services, yet trust, safety and workforce acceptance are often settled late. The programme moves from use cases and interaction modes to safe design, human factors, supplier checks and pilot decisions, using prepared workplace cases. Mars Training Centre UK delivers this programme on human-robot interaction to mixed-organisation cohorts.

The Business Case

Organisations that place robots near people carry safety, reputational and productivity risk if the interaction is poorly designed. Leaders who can judge a collaboration mode, test a supplier claim and plan for workforce acceptance approve pilots with clearer limits and fewer surprises.

- Workplace Incident Exposure: Falls when collaboration modes and protective measures are chosen before a robot is placed near people.
- Pilot Success Rate: Improves when acceptance criteria and stop conditions are agreed before the pilot starts.
- Workforce Adoption: Rises when roles, training needs and trust concerns are planned alongside the technology.

Principles and Evidence Base

- ISO 10218: The international standard for the safety of industrial robots and robot systems, applied in Sessions 2 and 3 to frame safe design and integration.
- ISO/TS 15066: The technical specification for collaborative robot systems, applied in Sessions 2 and 3 to compare how people and robots share a workspace.
- Four collaboration modes: Safety-rated monitored stop, hand guiding, speed and separation monitoring, and power and force limiting, applied in Session 3 to select a mode for each task.

Intended Participants

- Operations leaders who approve robots in production, warehouse or service settings.
- Health and safety managers who own risk assessment for shared workspaces.
- Technology and innovation leads who select and manage robotics suppliers.
- Human resources and change leads who prepare staff to work beside robots.
- Procurement and risk advisers who review supplier claims and contract terms.

Typical settings include manufacturing, logistics, healthcare and public services.

Learning Outcomes

1. Participants will be able to evaluate robot use cases by value, safety exposure and readiness of the workplace.
2. Participants will be able to compare the four collaboration modes for a given task and workspace.
3. Participants will be able to construct a risk assessment outline for a shared human and robot workspace.
4. Participants will be able to diagnose trust, acceptance and workload problems in human and robot teams.
5. Participants will be able to prioritise supplier checks, pilot criteria and stop conditions.
6. Participants will be able to justify a deployment decision pack to a leadership board.

Programme Structure

Day 1: Human-Robot Interaction Use Cases

Which workplace tasks justify a robot beside people?

- Robot Task Inventory
- Human and Robot Role Map
- Value and Safety Screening Grid
- Interaction Mode Overview
- Use Case Shortlist Sheet

Day 2: Safety Standards and Collaboration Modes

What do the safety standards require when robots share space with people?

- ISO 10218 Reading Guide
- ISO/TS 15066 Reading Guide
- Collaboration Mode Comparison
- Hazard Identification Sheet
- Protective Measure Register

Day 3: Safe Workspace Design

How is a shared workspace laid out so that risk stays controlled?

- Workspace Layout Review
- Speed and Separation Check
- Power and Force Limit Review
- Emergency Stop Rules
- Risk Assessment Outline

Day 4: Trust, Acceptance and Team Roles

Why do staff accept or resist a robot colleague?

- Trust Factor Review
- Operator Workload Check
- Voice and Gesture Control Review
- Role Change Plan
- Staff Training Needs Grid

Day 5: Deployment Decision Pack for One Robot Application

Do the findings join into a pack a board can approve?

- Applying the Session 1 Shortlist
- Testing the Session 2 Protective Measure Register
- Checking the Session 3 Risk Assessment Outline
- Reviewing the Session 4 Role Change Plan
- Completing the Deployment Decision Pack

Methodology

The programme is a case analysis built on prepared records of a factory cell, a warehouse picking area and a hospital delivery route. Participants review layouts, compare collaboration modes, question supplier claims and rehearse staff briefings, then defend a decision pack to peers acting as a leadership board.

- Suggested activity: Choosing a collaboration mode for three tasks and explaining the choice.
- Suggested activity: Walking a prepared layout to find hazards and missing stop conditions.
- Suggested activity: Questioning a supplier presentation with a claim test sheet.

Capstone Output

Each participant completes a deployment decision pack for one robot application. It holds the use case shortlist, a collaboration mode choice, a risk assessment outline, a role change plan and pilot stop conditions. At work it goes to the leadership board for approval and sets the routine for judging later robot proposals.

Frequently Asked Questions

Is human-robot interaction suitable for managers who are not robotics engineers?

Yes. Human-robot interaction is taught through prepared workplace cases and templates. You need responsibility for operations, safety, technology or workforce decisions, but no programming or engineering background.

Which standards does human-robot interaction rest on in this programme?

Human-robot interaction here rests on ISO 10218, ISO/TS 15066 and its four collaboration modes, each applied to a design, risk or pilot decision.

How is the deployment decision pack from human-robot interaction used at work?

You take the deployment decision pack to your leadership board, use its risk assessment outline to test a robot proposal, and keep its stop conditions as the rule for pilots.

How does human-robot interaction differ from a programme on robot programming?

Human-robot interaction concentrates on safe sharing of space, trust and deployment decisions, while a programme on robot programming concentrates on writing and testing robot control software.