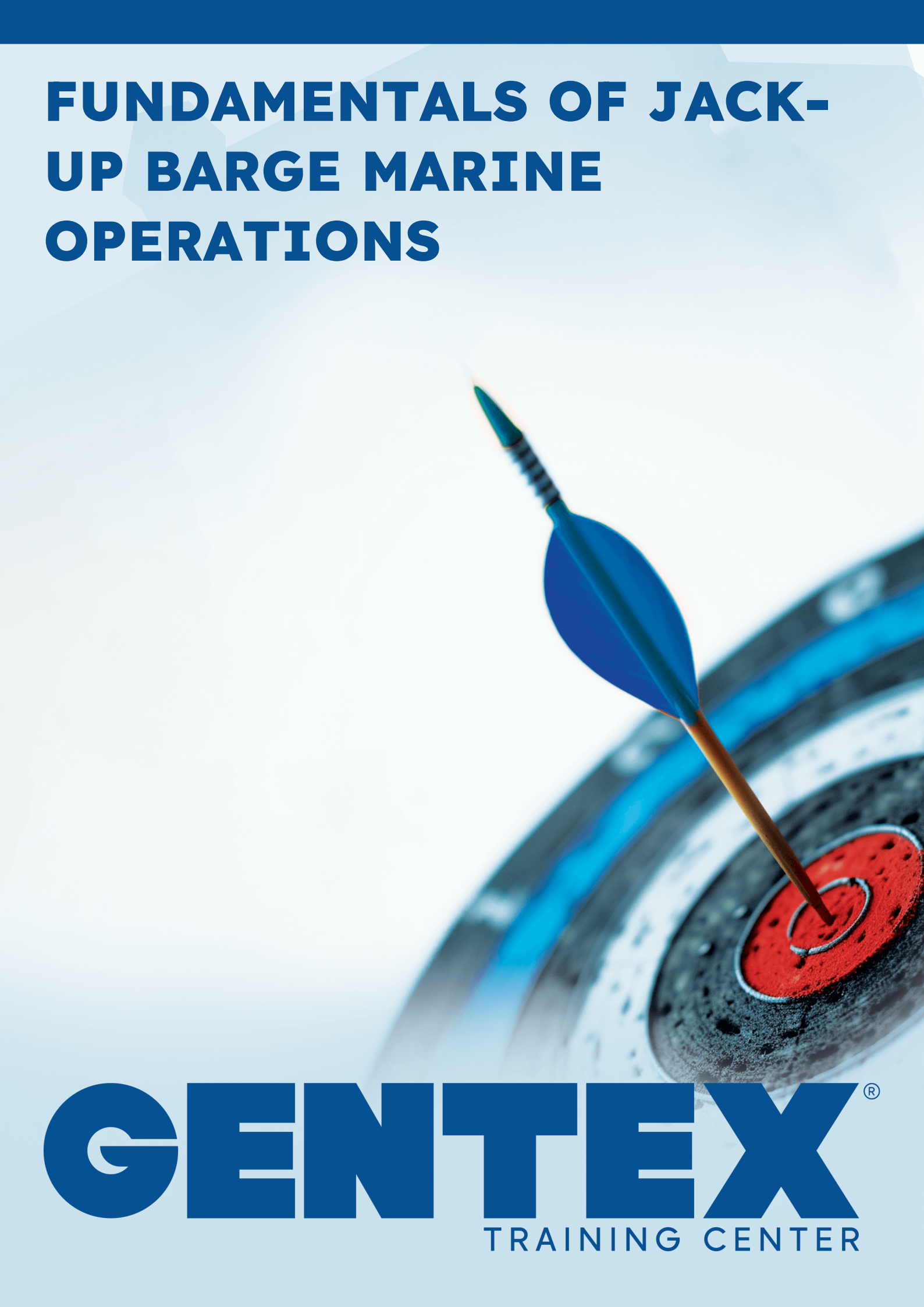
FUNDAMENTALS OF JACK-UP BARGE MARINE OPERATIONS



GENTEX®
TRAINING CENTER

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Introduction

Jack-up barges support offshore work where a floating platform cannot hold position: drilling support, construction, maintenance, and heavy lifts near a fixed structure. The unit floats to site, lowers its legs, lifts the hull clear of the water, and becomes a stable working platform a sequence where weather, seabed conditions, and load distribution all matter. This Fundamentals of Jack-Up Barge Marine Operations Training Course gives marine, offshore, and construction professionals a working method for planning and running these operations safely. Participants learn unit types and components, site assessment, leg penetration, preload and jacking, positional mooring, and heavy lift planning.

Fundamentals of Jack-Up Barge Marine Operations Course Objectives

- Describe jack-up barge types, hull configuration, and leg systems.
- Identify the main components: legs, jacking system, spud cans, and cantilever.
- Assess site conditions: water depth, seabed soils, and metocean data.
- Plan leg penetration and punch-through risk assessment.
- Sequence the jacking operation from float-off to preload.
- Apply preload procedures and leg load verification.
- Manage the afloat, elevated, and transit conditions for each unit.
- Plan positioning, anchoring, and tug coordination for the move to site.
- Apply stability, load distribution, and ballast control principles.
- Apply marine safety, lifting, and emergency response requirements.

Course Methodology

- Facilitated sessions built on real site surveys, jacking procedures, and operation records.

GENTEX® TRAINING CENTER

- Case workshops on punch-through, leg damage, and weather-related incidents.
- Jacking and preload sequence exercises using site and unit data.
- Lift planning and load chart exercises for barge-mounted cranes.
- Group exercise on a jack-up operation plan with risk assessment.

Who Should Take This Course

- Marine and offshore operations engineers.
- Jack-up unit supervisors and barge masters.
- Offshore construction and installation engineers.
- Marine warranty surveyors and inspection staff.
- HSE officers covering offshore lifting operations.
- Project engineers planning offshore installation works.

Fundamentals of Jack-Up Barge Marine Operations Course Outlines

Day 1: Jack-Up Unit Types and Components

- Jack-up barge and liftboat types and their operating limits.
- Hull configuration, deck layout, and variable load capacity.
- Leg systems: lattice, tubular, and rack-and-pinion types.
- Jacking systems, holding systems, and leg guides.
- Spud cans, footings, and leg end designs.
- Cantilever systems for platform work.
- Classification society requirements and unit certification.

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Day 2: Site Assessment and Seabed Conditions

- Bathymetric survey and water depth verification.
- Seabed soil investigation and geotechnical parameters.
- Leg penetration prediction and bearing capacity.
- Punch-through risk assessment and mitigation measures.
- Metocean data: wind, wave, current, and tide.
- Scour, debris, and existing infrastructure risks.
- Site-specific assessment documentation.

Day 3: Positioning, Jacking, and Preload

- Towing and positioning with tugs and anchors.
- Anchor patterns and positional mooring arrangement.
- Leg lowering and seabed touchdown procedures.
- Preload sequence and leg load verification.
- Jacking to elevated height and air gap determination.
- Leg fixation, locking, and monitoring systems.
- Weather windows and standby criteria.

Day 4: Elevated Operations and Heavy Lifting

- Load distribution and deck loading control.
- Barge-mounted crane load charts and capacity limits.
- Heavy lift planning, lift rigging, and tag line control.
- Personnel transfer and access arrangements.
- Working over water and fall protection requirements.

- Emergency evacuation from an elevated unit.
- Communication protocols with vessels and onshore.

Day 5: Safety, Emergency Response, and Performance

- Permit to work, toolbox talks, and lift plans.
- Emergency response: leg failure, punch-through, and fire.
- Weather monitoring and decision criteria for jacking down.
- Jacking down, leg recovery, and demobilisation.
- Record keeping, logbooks, and reporting requirements.
- Performance metrics for jack-up operations.
- Building an operational risk and improvement roadmap.

Conclusion

By successfully completing the Fundamentals of Jack-Up Barge Marine Operations Training Course, participants will have acquired a solid working knowledge of jack-up unit types and components, site and seabed assessment, leg penetration and punch-through control, positioning and preload procedures, elevated operations and heavy lifting, and marine safety practice. They will leave able to plan a jack-up operation with a documented risk basis, run the jacking sequence correctly, and manage the emergencies that matter most. Gentex Training Center delivers this programme with offshore marine and construction practitioners who run these operations in live projects.

FAQs for the Fundamentals of Jack-Up Barge Marine Operations course

GENTEX® TRAINING CENTER

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Q1 What is the "Fundamentals of Jack-Up Barge Marine Operations" course about?

It is a five-day programme on planning and running jack-up barge operations offshore. It covers unit types and components, site and seabed assessment, leg penetration and punch-through risk, positioning and preload, elevated operations and heavy lifting, and marine safety.

Q2 What are the key benefits of the "Fundamentals of Jack-Up Barge Marine Operations" course?

Participants plan jacking sequences with documented seabed and metocean input, reduce punch-through and leg damage risk, and control heavy lifts from a barge-mounted crane within load limits. They also gain emergency procedures and records that satisfy classification and marine warranty review.

Q3 What skills will I gain from the "Fundamentals of Jack-Up Barge Marine Operations" course?

You will gain jack-up unit component identification and limitation assessment, site and seabed assessment with leg penetration prediction, positioning, jacking and preload sequence control, and elevated operation, heavy lift, and emergency response management.

GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Q4 What tools, methods, or standards are covered in the "Fundamentals of Jack-Up Barge Marine Operations" course?

The course works with jack-up and liftboat type classifications, lattice, tubular and rack-and-pinion leg systems, spud can and footing designs, classification society requirements and unit certification, bathymetric survey and water depth verification, seabed soil investigation with geotechnical parameters, leg penetration prediction and bearing capacity calculation, punch-through risk assessment, metocean data analysis for wind, wave, current and tide, anchor patterns and positional mooring arrangements, preload procedures and leg load verification, air gap determination, barge-mounted crane load charts, heavy lift rigging plans, personnel transfer arrangements, working over water and fall protection requirements, and emergency evacuation and jacking-down criteria.

Q5 How is the "Fundamentals of Jack-Up Barge Marine Operations" course applied in real-world practice?

Teams apply it when assessing a new site before a unit moves in, planning leg penetration and preload, positioning a jack-up with tugs and anchors, preparing a heavy lift from a barge-mounted crane, deciding whether to jack down ahead of weather, and documenting the operation for classification and warranty review.