Introduction to Offshore Drilling and Rig Crew Operations

GExperts Learning Academy | SC-005 | SC | 2 days

Course overview

2 days SC programme focused on Introduction to Offshore Drilling and Rig Crew Operations, using energy-sector cases and applied decisions.

Designed for: Learners appropriate to the stated programme level

Learning outcomes

- Explain core principles and terminology for Introduction to Offshore Drilling and Rig Crew Operations.
- Interpret an applied case using evidence and stated assumptions.
- Identify risks, safeguards, role boundaries and escalation points.
- Prepare a clear recommendation for a multidisciplinary audience.

Course guide

Work through each module objective, lesson and teaching note, complete the applied activity and assessment, then use the separate Academy practice page for practice questions and answer feedback.

Separate practice questions:
https://www.globalexpertsconsultoria.com/training/academy/courses/questions/?course=SC-005

Academic and certification status

Draft learning resource for study and review. It does not confer accreditation, external certification, a regulated qualification, professional licence, safety-critical competence or site authorisation. Confirm approvals, current laws, standards, approved procedures and awarding-body requirements before delivery.

Module 1: Well architecture and drilling systems

Learning objectives

- Explain well architecture and drilling systems, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Well architecture and drilling systems
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Offshore Drilling and Rig Crew Operations

Detailed teaching notes

Teaching notes

Core explanation. A well connects the reservoir to the surface through a designed sequence of hole sections, casing and barriers. Explain measured depth versus true vertical depth, wellhead functions and interfaces with rig, marine riser and subsea equipment.

Decision logic. Well design starts with reservoir objectives, pressures, temperature, hazards and data uncertainty. Casing depth and equipment ratings require engineering calculations and independent review. This course uses diagrams and educational calculations, never an executable drilling programme.

Worked example. A deviated well has greater measured depth than vertical depth; fluid hydrostatic head relates to vertical depth.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Label a fictional well schematic and list five missing design inputs.

Model answer guide. Include pore pressure, fracture limits, temperature, geology and service conditions; distinguish equipment identification from design approval.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Label a fictional well schematic and list five missing design inputs.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 2: Drilling rigs and crew responsibilities

Learning objectives

- Explain drilling rigs and crew responsibilities, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Drilling rigs and crew responsibilities
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Offshore Drilling and Rig Crew Operations

Detailed teaching notes

Teaching notes

Core explanation. Describe roustabout, roughneck, driller, toolpusher and specialist service roles without suggesting job entitlement. Introduce rig floor, pipe handling, mud systems and lifting interfaces. Supervisory accountability does not remove each person's duty to report unsafe conditions.

Decision logic. Use a task-responsibility chart to identify who plans, authorises, executes and verifies work. Shift handovers must communicate well status, restrictions and outstanding actions. Entry-level workers should recognise boundaries and stop rather than improvise around unfamiliar equipment.

Worked example. A new crew member sees an unclear lifting signal. Work pauses until communication and responsibility are re-established.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Role-play a shift handover with one unresolved equipment restriction.

Model answer guide. A good handover identifies status, responsible person, restriction, next action and acknowledgement.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Role-play a shift handover with one unresolved equipment restriction.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 3: Drilling fluids and pressure windows

Learning objectives

- Explain drilling fluids and pressure windows, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Drilling fluids and pressure windows
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Offshore Drilling and Rig Crew Operations

Detailed teaching notes

Teaching notes

Core explanation. Drilling fluids transport cuttings, help control pressure, cool equipment and support the borehole. Static hydrostatic pressure depends on density and vertical depth. Circulation adds friction effects; temperature, losses and gas can change behaviour.

Decision logic. Explain the pore-pressure and fracture-pressure window conceptually. Raising density may improve one margin while increasing losses risk. All actual mud programmes and responses remain with competent well teams. Use clearly labelled classroom numbers and consistent SI units.

Worked example. A fluid density of 1100 kg/m3 over 1000 m gives roughly 10.79 MPa hydrostatic pressure using g equals 9.81 m/s2.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Calculate pressure for 1200 kg/m3 and discuss the tradeoff.

Model answer guide. Approximately 11.77 MPa; increased pressure may narrow fracture margin, so higher density is not automatically safer.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Calculate pressure for 1200 kg/m3 and discuss the tradeoff.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 4: Well control and barrier management

Learning objectives

- Explain well control and barrier management, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Well control and barrier management
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Offshore Drilling and Rig Crew Operations

Detailed teaching notes

Teaching notes

Core explanation. A barrier system prevents unintended fluid flow. Show primary and secondary barrier envelopes and the need for defined performance standards. Recognising indications, reporting promptly and following the authorised well-control programme are distinct from being certified to operate equipment.

Decision logic. Teach barrier status with evidence, not equipment names alone. An installed component may be unavailable, untested or outside its operating envelope. Barrier changes require controlled review. No live well-control drill or shut-in sequence is prescribed by this awareness content.

Worked example. A component appears on the drawing, but its required test record is missing. Treat its verified availability as unresolved.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Construct a barrier-status register from a fictional well diagram.

Model answer guide. Record function, verification, owner, limitation and escalation; do not mark an unverified barrier healthy.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Construct a barrier-status register from a fictional well diagram.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 5: Introduction to Offshore Drilling and Rig Crew Operations: Work P

Learning objectives

- Explain introduction to offshore drilling and rig crew operations: work planning, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Offshore Drilling and Rig Crew Operations: Work Planning
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Offshore Drilling and Rig Crew Operations

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Offshore Drilling and Rig Crew Operations: Work Planning describes a practical part of Introduction to Offshore Drilling and Rig Crew Operations. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for introduction to offshore drilling and rig crew operations: work planning. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans introduction to offshore drilling and rig crew operations: work planning while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for introduction to offshore drilling and rig crew operations: work planning: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for introduction to offshore drilling and rig crew operations: work planning: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 6: Introduction to Offshore Drilling and Rig Crew Operations: Data an

Learning objectives

- Explain introduction to offshore drilling and rig crew operations: data and performance, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Offshore Drilling and Rig Crew Operations: Data and Performance
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Offshore Drilling and Rig Crew Operations

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Offshore Drilling and Rig Crew Operations: Data and Performance describes a practical part of Introduction to Offshore Drilling and Rig Crew Operations. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for introduction to offshore drilling and rig crew operations: data and performance. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans introduction to offshore drilling and rig crew operations: data and performance while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for introduction to offshore drilling and rig crew operations: data and performance: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for introduction to offshore drilling and rig crew operations: data and performance: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 7: Introduction to Offshore Drilling and Rig Crew Operations: Applied

Learning objectives

- Explain introduction to offshore drilling and rig crew operations: applied case, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Offshore Drilling and Rig Crew Operations: Applied Case
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Offshore Drilling and Rig Crew Operations

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Offshore Drilling and Rig Crew Operations: Applied Case describes a practical part of Introduction to Offshore Drilling and Rig Crew Operations. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for introduction to offshore drilling and rig crew operations: applied case. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans introduction to offshore drilling and rig crew operations: applied case while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for introduction to offshore drilling and rig crew operations: applied case: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for introduction to offshore drilling and rig crew operations: applied case: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 8: Introduction to Offshore Drilling and Rig Crew Operations: Commu

Learning objectives

- Explain introduction to offshore drilling and rig crew operations: communication and escalation, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Offshore Drilling and Rig Crew Operations: Communication and Escalation
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Offshore Drilling and Rig Crew Operations

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Offshore Drilling and Rig Crew Operations: Communication and Escalation describes a practical part of Introduction to Offshore Drilling and Rig Crew Operations. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for introduction to offshore drilling and rig crew operations: communication and escalation. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans introduction to offshore drilling and rig crew operations: communication and escalation while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for introduction to offshore drilling and rig crew operations: communication and escalation: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for introduction to offshore drilling and rig crew operations: communication and escalation: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 9: Introduction to Offshore Drilling and Rig Crew Operations: Knowle

Learning objectives

- Explain introduction to offshore drilling and rig crew operations: knowledge check, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Offshore Drilling and Rig Crew Operations: Knowledge Check
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Offshore Drilling and Rig Crew Operations

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Offshore Drilling and Rig Crew Operations: Knowledge Check describes a practical part of Introduction to Offshore Drilling and Rig Crew Operations. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for introduction to offshore drilling and rig crew operations: knowledge check. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans introduction to offshore drilling and rig crew operations: knowledge check while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for introduction to offshore drilling and rig crew operations: knowledge check: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for introduction to offshore drilling and rig crew operations: knowledge check: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Module 10: Introduction to Offshore Drilling and Rig Crew Operations: Comp

Learning objectives

- Explain introduction to offshore drilling and rig crew operations: competence review, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Offshore Drilling and Rig Crew Operations: Competence Review
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Offshore Drilling and Rig Crew Operations

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Offshore Drilling and Rig Crew Operations: Competence Review describes a practical part of Introduction to Offshore Drilling and Rig Crew Operations. Learners connect the principles to asset performance, people, operational risk, project value and local context.

Decision logic. Review the objective, evidence, limits, interfaces and applicable controls for introduction to offshore drilling and rig crew operations: competence review. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans introduction to offshore drilling and rig crew operations: competence review while balancing safety, integrity, schedule, cost, environmental protection and local capability.

Facilitator prompts. Ask learners to distinguish verified facts from assumptions, identify who has decision authority, name stop-work triggers and state what evidence could change their recommendation. Compare technical, HSE, commercial and community perspectives.

Activity. Prepare a decision brief for introduction to offshore drilling and rig crew operations: competence review: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Model answer guide. A sound response defines scope; uses current, traceable evidence; applies approved requirements and controls; records assumptions; assigns competent owners; checks interfaces; and communicates a measurable decision with an escalation path.

Assessment evidence. Score accuracy (30%), use of evidence (20%), safeguards (20%), analysis (20%) and communication (10%).

Applied activity

Prepare a decision brief for introduction to offshore drilling and rig crew operations: competence review: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

Summative: Applied decision brief or practical case assessed against the rubric; proposed pass mark 70%, subject to academic approval.

Practice

Use the separate Academy practice questions and answer key page for this module.

Facilitator close-out and resources

Facilitator close-out

Record attendance, assessment evidence, learner support needs, incidents and improvement actions according to approved provider processes. Do not sign learners off for regulated or safety-critical work without the authorised assessment and certification route.

Resources and references

- Supplied GExperts/IUM reference materials; verify reuse rights and currentness.
- Current applicable Namibian legislation, standards and approved site procedures supplied by the provider.
- Case worksheet and instructor slides must be produced and reviewed before course release.