Deepwater Development and Infrastructure Investment

GExperts Learning Academy | EX-069 | EX | 3 days

Course overview

3 days EX programme focused on Deepwater Development and Infrastructure Investment, using energy-sector cases and applied decisions.

Designed for: Learners appropriate to the stated programme level

Learning outcomes

- Explain core principles and terminology for Deepwater Development and Infrastructure Investment.
- 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=EX-069

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: Deepwater development concept selection

Learning objectives

- Explain deepwater development concept selection, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Deepwater development concept selection
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Deepwater Development and Infrastructure Investment

Detailed teaching notes

Teaching notes

Core explanation. Compare subsea tieback, standalone floating production and shore-linked concepts against reservoir, metocean, water depth, distance and product requirements. A concept is an integrated system of wells, facilities, export and support infrastructure. Show the interfaces before scoring alternatives.

Decision logic. Apply mandatory constraints before weighted scoring. Document weighting, uncertainty and options that fail a hard requirement. Lowest capital cost may increase operating risk or reduce recovery. Revisit selection when appraisal or market evidence changes.

Worked example. Concept A costs less initially but cannot accommodate the high gas case; Concept B has expansion capacity.

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 concept matrix with technical, commercial, environmental and local-capability criteria.

Model answer guide. Reject infeasible options before ranking and include lifecycle cost, flexibility and uncertainty.

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

Applied activity

Prepare a concept matrix with technical, commercial, environmental and local-capability criteria.

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: Flow assurance

Learning objectives

- Explain flow assurance, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Flow assurance
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Deepwater Development and Infrastructure Investment

Detailed teaching notes

Teaching notes

Core explanation. Flow assurance manages the ability to transport fluids through operating and transient conditions. Hydrates, wax, scale, corrosion and slugging can threaten performance. Explain the pressure-temperature-composition relationship qualitatively with a cooling pipeline sketch.

Decision logic. Assess startup, shutdown and restart as well as steady operation. Chemical treatment, insulation and operating strategies interact with facilities and environmental constraints. Classroom discussion does not prescribe inhibitor doses or live restart sequences.

Worked example. A pipeline flows normally when warm but cools during a long shutdown, changing restart risk.

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. Build a flow-assurance risk register for normal operation and shutdown.

Model answer guide. Include fluid data, thermal history, safeguards, monitoring and an authorised specialist review before restart.

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

Applied activity

Build a flow-assurance risk register for normal operation and shutdown.

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: Routes to shore and infrastructure choices

Learning objectives

- Explain routes to shore and infrastructure choices, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Routes to shore and infrastructure choices
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Deepwater Development and Infrastructure Investment

Detailed teaching notes

Teaching notes

Core explanation. Compare direct offshore export, pipeline landfall, shuttle-to-terminal and domestic processing as distinct options. Oil reaching national waters does not imply physical landing or domestic refining. Geography, throughput, markets and permitting shape the choice.

Decision logic. Evaluate utilisation, distance, terrain, marine exposure, storage, product demand and lifecycle cost. Infrastructure can be shared only when commercial and technical interfaces align. Do not assert that any Namibian shore-landing route or commissioning date is confirmed.

Worked example. A low-volume early development may favour offshore export while a larger future cluster could change infrastructure economics.

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. Write a conditional shore-routing recommendation with trigger conditions.

Model answer guide. Separate current evidence from future options; include demand, volume, cost, environment and commercial access.

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

Applied activity

Write a conditional shore-routing recommendation with trigger conditions.

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: Project finance and funding structure

Learning objectives

- Explain project finance and funding structure, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Project finance and funding structure
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Deepwater Development and Infrastructure Investment

Detailed teaching notes

Teaching notes

Core explanation. Financing links investors, lenders, project cash flows and contractual risk allocation. Explain equity, debt, debt service, covenants and security conceptually. Financing availability depends on credible technical, commercial and environmental evidence.

Decision logic. Distinguish project economics from shareholder returns and loan serviceability. Debt can amplify returns and risk. Check downside cash available for debt service rather than assuming forecast revenue is free cash. No financing commitment is implied.

Worked example. Cash available for debt service of 120 and scheduled debt service of 100 gives a coverage ratio of 1.2.

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. Stress the ratio when available cash falls by 25% and discuss consequences.

Model answer guide. Coverage falls to 0.9; the project may not meet scheduled service without remedies under its actual agreements.

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

Applied activity

Stress the ratio when available cash falls by 25% and discuss consequences.

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: Production readiness and marine assurance

Learning objectives

- Explain production readiness and marine assurance, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Production readiness and marine assurance
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Deepwater Development and Infrastructure Investment

Detailed teaching notes

Teaching notes

Core explanation. Operational readiness brings people, procedures, equipment, spares, assurance and emergency arrangements together before service. Marine assurance addresses vessel capability, condition and interfaces for the intended task. Treat readiness as evidence-based acceptance.

Decision logic. Use independent challenge and clear ownership of exceptions. Operational teams must accept the asset with known limitations and an approved response. A dashboard with all green cells is unreliable if supporting records are missing or outdated.

Worked example. A readiness review shows trained staff but no tested spare-parts supply route for a critical pump.

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. Create a readiness dossier and a conditions-to-close register.

Model answer guide. Include maintenance, spares, competence, emergency drills and marine interfaces with accountable owners.

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

Applied activity

Create a readiness dossier and a conditions-to-close register.

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: Deepwater Development and Infrastructure Investment: Data and P

Learning objectives

- Explain deepwater development and infrastructure investment: data and performance, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Deepwater Development and Infrastructure Investment: Data and Performance
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Deepwater Development and Infrastructure Investment

Detailed teaching notes

Teaching notes

Core explanation. Deepwater Development and Infrastructure Investment: Data and Performance describes a practical part of Deepwater Development and Infrastructure Investment. 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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: Deepwater Development and Infrastructure Investment: Applied Ca

Learning objectives

- Explain deepwater development and infrastructure investment: applied case, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Deepwater Development and Infrastructure Investment: Applied Case
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Deepwater Development and Infrastructure Investment

Detailed teaching notes

Teaching notes

Core explanation. Deepwater Development and Infrastructure Investment: Applied Case describes a practical part of Deepwater Development and Infrastructure Investment. 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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: Deepwater Development and Infrastructure Investment: Communic

Learning objectives

- Explain deepwater development and infrastructure investment: communication and escalation, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Deepwater Development and Infrastructure Investment: Communication and Escalation
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Deepwater Development and Infrastructure Investment

Detailed teaching notes

Teaching notes

Core explanation. Deepwater Development and Infrastructure Investment: Communication and Escalation describes a practical part of Deepwater Development and Infrastructure Investment. 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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: Deepwater Development and Infrastructure Investment: Knowledg

Learning objectives

- Explain deepwater development and infrastructure investment: knowledge check, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Deepwater Development and Infrastructure Investment: Knowledge Check
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Deepwater Development and Infrastructure Investment

Detailed teaching notes

Teaching notes

Core explanation. Deepwater Development and Infrastructure Investment: Knowledge Check describes a practical part of Deepwater Development and Infrastructure Investment. 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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: Deepwater Development and Infrastructure Investment: Compete

Learning objectives

- Explain deepwater development and infrastructure investment: competence review, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Deepwater Development and Infrastructure Investment: Competence Review
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Deepwater Development and Infrastructure Investment

Detailed teaching notes

Teaching notes

Core explanation. Deepwater Development and Infrastructure Investment: Competence Review describes a practical part of Deepwater Development and Infrastructure Investment. 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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 deepwater development and infrastructure investment: 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.