Flow Assurance for Offshore Facilities: Fundamentals

GExperts Learning Academy | SC-X02 | SC | 1-3 days

Course overview

1-3 days SC programme focused on Flow Assurance for Offshore Facilities: Fundamentals, using energy-sector cases and applied decisions.

Designed for: New entrants and cross-sector professionals

Learning outcomes

- Explain core principles and terminology for Flow Assurance for Offshore Facilities: Fundamentals.
- 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-X02

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: 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: Flow Assurance for Offshore Facilities: Fundamentals

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 2: Flow Assurance for Offshore Facilities: Fundamentals: Risk Contro

Learning objectives

- Explain flow assurance for offshore facilities: fundamentals: risk controls, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Flow Assurance for Offshore Facilities: Fundamentals: Risk Controls
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Flow Assurance for Offshore Facilities: Fundamentals

Detailed teaching notes

Teaching notes

Core explanation. Flow Assurance for Offshore Facilities: Fundamentals: Risk Controls describes a practical part of Flow Assurance for Offshore Facilities: Fundamentals. 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 flow assurance for offshore facilities: fundamentals: risk controls. 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 flow assurance for offshore facilities: fundamentals: risk controls 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 flow assurance for offshore facilities: fundamentals: risk controls: 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 flow assurance for offshore facilities: fundamentals: risk controls: 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 3: Corrosion mechanisms and damage management

Learning objectives

- Explain corrosion mechanisms and damage management, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Corrosion mechanisms and damage management
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Flow Assurance for Offshore Facilities: Fundamentals

Detailed teaching notes

Teaching notes

Core explanation. Corrosion depends on materials, fluids, temperature, environment and operating history. Internal corrosion, external marine corrosion and localised attack can require different controls. Explain general thinning versus pitting and why average thickness may hide local damage.

Decision logic. Identify credible damage mechanisms before selecting inspection or mitigation. Coatings, inhibitors, material selection and cathodic protection have different applications. Competent engineers establish acceptance criteria; classroom measurements never approve equipment for continued service.

Worked example. A plate's average thickness appears acceptable but a local pit is much deeper.

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. Review a fictional damage map and propose a specialist inspection scope.

Model answer guide. Address local severity, mechanism, inspection coverage and operating conditions rather than average thickness alone.

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

Applied activity

Review a fictional damage map and propose a specialist inspection scope.

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: Flow Assurance for Offshore Facilities: Fundamentals: Evidence a

Learning objectives

- Explain flow assurance for offshore facilities: fundamentals: evidence and decision gates, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Flow Assurance for Offshore Facilities: Fundamentals: Evidence and Decision Gates
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Flow Assurance for Offshore Facilities: Fundamentals

Detailed teaching notes

Teaching notes

Core explanation. Flow Assurance for Offshore Facilities: Fundamentals: Evidence and Decision Gates describes a practical part of Flow Assurance for Offshore Facilities: Fundamentals. 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 flow assurance for offshore facilities: fundamentals: evidence and decision gates. 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 flow assurance for offshore facilities: fundamentals: evidence and decision gates 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 flow assurance for offshore facilities: fundamentals: evidence and decision gates: 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 flow assurance for offshore facilities: fundamentals: evidence and decision gates: 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 5: Integrated reservoir management

Learning objectives

- Explain integrated reservoir management, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Integrated reservoir management
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Flow Assurance for Offshore Facilities: Fundamentals

Detailed teaching notes

Teaching notes

Core explanation. Reservoir management links surveillance, models, wells, facilities and economics to an agreed objective. Define decision triggers and data owners. A model is useful when it helps choose an action and exposes uncertainty, not simply because it has many cells.

Decision logic. Use a closed learning cycle: predict, measure, compare, diagnose and revise. History matching can be non-unique, so retain plausible alternatives and test decisions against them. Integrate subsurface and operations teams when reviewing constraints and new evidence.

Worked example. Measured water breakthrough is earlier than predicted. Review connectivity and completion assumptions before merely adjusting a curve.

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 surveillance plan with three measurements and associated decision triggers.

Model answer guide. Each measurement must connect to a management choice, owner and review frequency.

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

Applied activity

Create a surveillance plan with three measurements and associated decision triggers.

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: Flow Assurance for Offshore Facilities: Fundamentals: Data and P

Learning objectives

- Explain flow assurance for offshore facilities: fundamentals: data and performance, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Flow Assurance for Offshore Facilities: Fundamentals: Data and Performance
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Flow Assurance for Offshore Facilities: Fundamentals

Detailed teaching notes

Teaching notes

Core explanation. Flow Assurance for Offshore Facilities: Fundamentals: Data and Performance describes a practical part of Flow Assurance for Offshore Facilities: Fundamentals. 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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: Flow Assurance for Offshore Facilities: Fundamentals: Applied Ca

Learning objectives

- Explain flow assurance for offshore facilities: fundamentals: applied case, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Flow Assurance for Offshore Facilities: Fundamentals: Applied Case
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Flow Assurance for Offshore Facilities: Fundamentals

Detailed teaching notes

Teaching notes

Core explanation. Flow Assurance for Offshore Facilities: Fundamentals: Applied Case describes a practical part of Flow Assurance for Offshore Facilities: Fundamentals. 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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: Flow Assurance for Offshore Facilities: Fundamentals: Communica

Learning objectives

- Explain flow assurance for offshore facilities: fundamentals: communication and escalation, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Flow Assurance for Offshore Facilities: Fundamentals: Communication and Escalation
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Flow Assurance for Offshore Facilities: Fundamentals

Detailed teaching notes

Teaching notes

Core explanation. Flow Assurance for Offshore Facilities: Fundamentals: Communication and Escalation describes a practical part of Flow Assurance for Offshore Facilities: Fundamentals. 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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: Flow Assurance for Offshore Facilities: Fundamentals: Knowledge

Learning objectives

- Explain flow assurance for offshore facilities: fundamentals: knowledge check, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Flow Assurance for Offshore Facilities: Fundamentals: Knowledge Check
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Flow Assurance for Offshore Facilities: Fundamentals

Detailed teaching notes

Teaching notes

Core explanation. Flow Assurance for Offshore Facilities: Fundamentals: Knowledge Check describes a practical part of Flow Assurance for Offshore Facilities: Fundamentals. 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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: Flow Assurance for Offshore Facilities: Fundamentals: Competen

Learning objectives

- Explain flow assurance for offshore facilities: fundamentals: competence review, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Flow Assurance for Offshore Facilities: Fundamentals: Competence Review
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Flow Assurance for Offshore Facilities: Fundamentals

Detailed teaching notes

Teaching notes

Core explanation. Flow Assurance for Offshore Facilities: Fundamentals: Competence Review describes a practical part of Flow Assurance for Offshore Facilities: Fundamentals. 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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 flow assurance for offshore facilities: fundamentals: 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.