Introduction to Petroleum Project Controls

GExperts Learning Academy | SC-X17 | SC | 1-3 days

Course overview

1-3 days SC programme focused on Introduction to Petroleum Project Controls, using energy-sector cases and applied decisions.

Designed for: New entrants and cross-sector professionals

Learning outcomes

- Explain core principles and terminology for Introduction to Petroleum Project Controls.
- 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-X17

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: Scope and work breakdown structures

Learning objectives

- Explain scope and work breakdown structures, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Scope and work breakdown structures
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Petroleum Project Controls

Detailed teaching notes

Teaching notes

Core explanation. Scope defines required outputs and boundaries. A WBS decomposes deliverables into manageable work packages; a dictionary clarifies content, exclusions and acceptance. Activities are derived from scope rather than substituted for it.

Decision logic. Trace requirements to deliverables and verification. Check for omissions, overlap and owner interfaces. Scope changes should assess cost, schedule, risk and benefits before approval. A detailed WBS is useful only when it supports responsibility and control.

Worked example. Two teams both assume the other supplies offshore installation support.

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 WBS and dictionary entry resolving the missing interface.

Model answer guide. Assign the deliverable, acceptance evidence, owner and boundary explicitly.

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

Applied activity

Build a WBS and dictionary entry resolving the missing interface.

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: Planning scheduling and critical path

Learning objectives

- Explain planning scheduling and critical path, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Planning scheduling and critical path
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Petroleum Project Controls

Detailed teaching notes

Teaching notes

Core explanation. A schedule links activities through dependencies, durations, calendars and resources. Critical path identifies the longest duration path under the model's assumptions. Float is a calculated property, not spare time owned automatically by one team.

Decision logic. Validate logic before trusting dates. Resource constraints and uncertain weather windows can change the critical path. Compression may add cost or risk. State assumptions and update from actual progress rather than forcing the plan to match a desired date.

Worked example. Path A takes 3 plus 4 days; parallel path B takes 5 days. The simplified project duration is 7 days.

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 duration after A's first task increases to 5 days.

Model answer guide. The A path becomes 9 days; assess downstream effects and valid recovery choices.

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

Applied activity

Calculate duration after A's first task increases to 5 days.

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: CAPEX OPEX and estimating

Learning objectives

- Explain capex opex and estimating, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of CAPEX OPEX and estimating
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Petroleum Project Controls

Detailed teaching notes

Teaching notes

Core explanation. Capital estimates cover assets and development; operating estimates cover recurring delivery and support activities. Define scope, price basis, location, currency, schedule and exclusions before estimating. A number without its basis is difficult to review.

Decision logic. Use analogous, parametric and bottom-up methods according to data maturity. Separate base estimate, identified risk contingency and other reserves under the adopted governance. Avoid implying that contingency is spare money for scope additions.

Worked example. A fictional equipment package is 10 million and installation is estimated at 40% of equipment cost; subtotal is 14 million before other scope.

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 an estimate basis and identify five excluded cost items.

Model answer guide. Include logistics, commissioning, taxes, spares and owner costs where appropriate; state assumptions rather than silently adding them.

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

Applied activity

Write an estimate basis and identify five excluded cost items.

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: Earned value and project control

Learning objectives

- Explain earned value and project control, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Earned value and project control
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Petroleum Project Controls

Detailed teaching notes

Teaching notes

Core explanation. Planned value represents scheduled budgeted work; earned value represents budgeted value of completed work; actual cost represents expenditure. CPI equals EV divided by AC and SPI equals EV divided by PV under the chosen measurement method.

Decision logic. Earned value needs a reliable baseline and objective progress rules. Spending less may reflect delayed work, not efficiency. Forecasts require remaining-work judgement and known changes. Explain that aggregate indices can hide critical delays or poor quality.

Worked example. With EV 80, AC 100 and PV 90, CPI is 0.8 and SPI about 0.89.

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 the indices and write a management interpretation.

Model answer guide. Cost efficiency and progress are adverse under the baseline; investigate causes and forecast remaining work.

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

Applied activity

Calculate the indices and write a management interpretation.

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: Risk assessment and uncertainty management

Learning objectives

- Explain risk assessment and uncertainty management, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Risk assessment and uncertainty management
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Petroleum Project Controls

Detailed teaching notes

Teaching notes

Core explanation. Define the activity and potential harm, identify hazards, evaluate existing controls, then decide further controls and ownership. A risk matrix supports prioritisation but does not prove a risk is tolerable. Include affected people and changing conditions.

Decision logic. Test whether controls are present and effective. Residual risk should be reassessed after control implementation, not merely after a promise. Escalate high-consequence uncertainty for competent review. Project risk also includes schedule, cost and opportunity effects.

Worked example. A permit lists a barrier that has not yet been installed. The claimed residual risk is premature.

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. Complete a risk register with cause, event, consequence, control, owner and verification.

Model answer guide. Keep hazard and consequence distinct and require evidence before taking control credit.

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

Applied activity

Complete a risk register with cause, event, consequence, control, owner and verification.

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 Petroleum Project Controls: Data and Performance

Learning objectives

- Explain introduction to petroleum project controls: data and performance, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Petroleum Project Controls: Data and Performance
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Petroleum Project Controls

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Petroleum Project Controls: Data and Performance describes a practical part of Introduction to Petroleum Project Controls. 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 petroleum project controls: 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 petroleum project controls: 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 petroleum project controls: 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 petroleum project controls: 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 Petroleum Project Controls: Applied Case

Learning objectives

- Explain introduction to petroleum project controls: applied case, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Petroleum Project Controls: Applied Case
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Petroleum Project Controls

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Petroleum Project Controls: Applied Case describes a practical part of Introduction to Petroleum Project Controls. 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 petroleum project controls: 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 petroleum project controls: 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 petroleum project controls: 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 petroleum project controls: 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 Petroleum Project Controls: Communication and E

Learning objectives

- Explain introduction to petroleum project controls: communication and escalation, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Petroleum Project Controls: Communication and Escalation
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Petroleum Project Controls

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Petroleum Project Controls: Communication and Escalation describes a practical part of Introduction to Petroleum Project Controls. 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 petroleum project controls: 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 petroleum project controls: 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 petroleum project controls: 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 petroleum project controls: 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 Petroleum Project Controls: Knowledge Check

Learning objectives

- Explain introduction to petroleum project controls: knowledge check, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Petroleum Project Controls: Knowledge Check
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Petroleum Project Controls

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Petroleum Project Controls: Knowledge Check describes a practical part of Introduction to Petroleum Project Controls. 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 petroleum project controls: 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 petroleum project controls: 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 petroleum project controls: 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 petroleum project controls: 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 Petroleum Project Controls: Competence Review

Learning objectives

- Explain introduction to petroleum project controls: competence review, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Introduction to Petroleum Project Controls: Competence Review
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Introduction to Petroleum Project Controls

Detailed teaching notes

Teaching notes

Core explanation. Introduction to Petroleum Project Controls: Competence Review describes a practical part of Introduction to Petroleum Project Controls. 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 petroleum project controls: 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 petroleum project controls: 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 petroleum project controls: 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 petroleum project controls: 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.