# Professional Certificate in Petroleum Economics and Fiscal Modelling

**GExperts Learning Academy | PC-038 | PC | 16 weeks**

## Course overview

16 weeks PC programme focused on Professional Certificate in Petroleum Economics and Fiscal Modelling, using energy-sector cases and applied decisions.

Designed for: Learners appropriate to the stated programme level

## Learning outcomes

- Explain core principles and terminology for Professional Certificate in Petroleum Economics and Fiscal Modelling.
- 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=PC-038

## 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: Petroleum project cash flow

## Learning objectives

- Explain petroleum project cash flow, interpret a case, select appropriate controls and justify a documented decision.

## Lessons

1. Purpose and key terms of Petroleum project cash flow
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Professional Certificate in Petroleum Economics and Fiscal Modelling

## Detailed teaching notes

Teaching notes

Core explanation. Construct cash flow by period from revenue, investment, operating costs, fiscal payments and closure costs. Define project versus equity perspective and real versus nominal money. Profit in an income statement is not the same as cash available.

Decision logic. Document timing and sign conventions. Working capital, depreciation and financing affect models differently. Keep an unlevered project model separate from financing unless explicitly integrating both. All classroom fiscal and price assumptions are illustrative.

Worked example. Year zero investment is 100; year one revenue is 80 and operating cost 20. Pre-fiscal cash flows are minus 100 and plus 60.

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 three-period cash-flow table with closure cost in the final period.

Model answer guide. Show investment as negative, operations net cash as positive if applicable, and closure explicitly.

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

## Applied activity

Build a three-period cash-flow table with closure cost in the final period.

## 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: Royalties taxes and government take

## Learning objectives

- Explain royalties taxes and government take, interpret a case, select appropriate controls and justify a documented decision.

## Lessons

1. Purpose and key terms of Royalties taxes and government take
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Professional Certificate in Petroleum Economics and Fiscal Modelling

## Detailed teaching notes

Teaching notes

Core explanation. Fiscal systems allocate project value between investors and the state through mechanisms such as royalties, taxes, bonuses or contractual sharing. Compare mechanisms conceptually. Do not assume a production-sharing system applies to Namibia or import tax rates from another jurisdiction.

Decision logic. Model the actual legal and contractual hierarchy only after specialist verification. Government take depends on timing, cost recovery, deductions and price as well as headline rates. Keep illustrative fiscal cases visibly separate from current law.

Worked example. In a fictional classroom system, 5% royalty on USD 100 revenue is USD 5. This assumption is not a statement of Namibian law.

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. Compare a gross-revenue royalty with a profit-based levy using two cost scenarios.

Model answer guide. Royalty remains linked to gross revenue while profit-based payments change with allowed costs; note legal definitions matter.

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

## Applied activity

Compare a gross-revenue royalty with a profit-based levy using two cost scenarios.

## 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: NPV IRR and payback

## Learning objectives

- Explain npv irr and payback, interpret a case, select appropriate controls and justify a documented decision.

## Lessons

1. Purpose and key terms of NPV IRR and payback
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Professional Certificate in Petroleum Economics and Fiscal Modelling

## Detailed teaching notes

Teaching notes

Core explanation. Net present value discounts dated cash flows at a stated rate. Internal rate of return is a rate making NPV zero and may be ambiguous for unusual cash-flow patterns. Payback measures recovery timing and ignores some value effects.

Decision logic. Compare projects using consistent perspective, currency and risk assumptions. NPV scale and capital constraints matter; ranking by IRR alone can mislead. Real cash flows require a compatible real discount rate and nominal flows a compatible nominal rate.

Worked example. Minus 100 now and plus 121 after two years has zero NPV at 10% because 121 divided by 1.1 squared equals 100.

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 NPV at 5% and explain why the result changes.

Model answer guide. NPV is about 9.75; a lower discount rate increases the present value of the future receipt.

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

## Applied activity

Calculate NPV at 5% and explain why the result changes.

## 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: Sensitivity and scenario analysis

## Learning objectives

- Explain sensitivity and scenario analysis, interpret a case, select appropriate controls and justify a documented decision.

## Lessons

1. Purpose and key terms of Sensitivity and scenario analysis
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Professional Certificate in Petroleum Economics and Fiscal Modelling

## Detailed teaching notes

Teaching notes

Core explanation. Sensitivity changes one input to understand model response; scenarios change coherent sets of assumptions. A tornado chart ranks tested effects, not the probability of events. Distinguish uncertainty ranges from forecasts and assigned probabilities.

Decision logic. Check dependencies: schedule delay may increase cost and defer revenue together. A correlated downside should not be represented as independent optimistic inputs. Identify decision-changing variables and the evidence that could narrow them.

Worked example. Price down 20% and CAPEX up 20% are separate sensitivities; combined delay, inflation and low price is a downside scenario.

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 sensitivity table and one coherent downside scenario.

Model answer guide. Preserve the base case, document changed inputs, and explain causal links in the combined case.

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

## Applied activity

Prepare a sensitivity table and one coherent downside scenario.

## 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: Risked value and decision trees

## Learning objectives

- Explain risked value and decision trees, interpret a case, select appropriate controls and justify a documented decision.

## Lessons

1. Purpose and key terms of Risked value and decision trees
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Professional Certificate in Petroleum Economics and Fiscal Modelling

## Detailed teaching notes

Teaching notes

Core explanation. Expected monetary value weights defined outcomes by probabilities that sum to one. It supports comparisons but does not capture every strategic, distributional or catastrophic consequence. Teach chance nodes separately from decision nodes.

Decision logic. Value of information depends on whether new evidence can improve a decision. An expensive study has little decision value if the same choice follows every possible result. Explain probability calibration and dependencies before presenting a precise number.

Worked example. Success gives plus 200 with probability 0.3 and failure minus 50 with probability 0.7; EMV is 25 in the same money units.

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. Draw the tree and compare with a certain value of 20, noting risk preferences.

Model answer guide. EMV favours 25 versus 20, but downside exposure and constraints may change the choice.

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

## Applied activity

Draw the tree and compare with a certain value of 20, noting risk preferences.

## 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: Professional Certificate in Petroleum Economics and Fiscal Model

## Learning objectives

- Explain professional certificate in petroleum economics and fiscal modelling: data and performance, interpret a case, select appropriate controls and justify a documented decision.

## Lessons

1. Purpose and key terms of Professional Certificate in Petroleum Economics and Fiscal Modelling: Data and Performance
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Professional Certificate in Petroleum Economics and Fiscal Modelling

## Detailed teaching notes

Teaching notes

Core explanation. Professional Certificate in Petroleum Economics and Fiscal Modelling: Data and Performance describes a practical part of Professional Certificate in Petroleum Economics and Fiscal Modelling. 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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: Professional Certificate in Petroleum Economics and Fiscal Model

## Learning objectives

- Explain professional certificate in petroleum economics and fiscal modelling: applied case, interpret a case, select appropriate controls and justify a documented decision.

## Lessons

1. Purpose and key terms of Professional Certificate in Petroleum Economics and Fiscal Modelling: Applied Case
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Professional Certificate in Petroleum Economics and Fiscal Modelling

## Detailed teaching notes

Teaching notes

Core explanation. Professional Certificate in Petroleum Economics and Fiscal Modelling: Applied Case describes a practical part of Professional Certificate in Petroleum Economics and Fiscal Modelling. 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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: Professional Certificate in Petroleum Economics and Fiscal Model

## Learning objectives

- Explain professional certificate in petroleum economics and fiscal modelling: communication and escalation, interpret a case, select appropriate controls and justify a documented decision.

## Lessons

1. Purpose and key terms of Professional Certificate in Petroleum Economics and Fiscal Modelling: Communication and Escalation
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Professional Certificate in Petroleum Economics and Fiscal Modelling

## Detailed teaching notes

Teaching notes

Core explanation. Professional Certificate in Petroleum Economics and Fiscal Modelling: Communication and Escalation describes a practical part of Professional Certificate in Petroleum Economics and Fiscal Modelling. 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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: Professional Certificate in Petroleum Economics and Fiscal Model

## Learning objectives

- Explain professional certificate in petroleum economics and fiscal modelling: knowledge check, interpret a case, select appropriate controls and justify a documented decision.

## Lessons

1. Purpose and key terms of Professional Certificate in Petroleum Economics and Fiscal Modelling: Knowledge Check
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Professional Certificate in Petroleum Economics and Fiscal Modelling

## Detailed teaching notes

Teaching notes

Core explanation. Professional Certificate in Petroleum Economics and Fiscal Modelling: Knowledge Check describes a practical part of Professional Certificate in Petroleum Economics and Fiscal Modelling. 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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: Professional Certificate in Petroleum Economics and Fiscal Mode

## Learning objectives

- Explain professional certificate in petroleum economics and fiscal modelling: competence review, interpret a case, select appropriate controls and justify a documented decision.

## Lessons

1. Purpose and key terms of Professional Certificate in Petroleum Economics and Fiscal Modelling: Competence Review
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Professional Certificate in Petroleum Economics and Fiscal Modelling

## Detailed teaching notes

Teaching notes

Core explanation. Professional Certificate in Petroleum Economics and Fiscal Modelling: Competence Review describes a practical part of Professional Certificate in Petroleum Economics and Fiscal Modelling. 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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 professional certificate in petroleum economics and fiscal modelling: 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.