Mechanical Fitting and Rotating Equipment Maintenance

GExperts Learning Academy | TV-054 | TV | 6-12 months

Course overview

6-12 months TV programme focused on Mechanical Fitting and Rotating Equipment Maintenance, using energy-sector cases and applied decisions.

Designed for: Learners appropriate to the stated programme level

Learning outcomes

- Explain core principles and terminology for Mechanical Fitting and Rotating Equipment Maintenance.
- 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=TV-054

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: Mechanical Fitting and Rotating Equipment Maintenance: Core Co

Learning objectives

- Explain mechanical fitting and rotating equipment maintenance: core concepts, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Mechanical Fitting and Rotating Equipment Maintenance: Core Concepts
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Mechanical Fitting and Rotating Equipment Maintenance

Detailed teaching notes

Teaching notes

Core explanation. Mechanical Fitting and Rotating Equipment Maintenance: Core Concepts describes a practical part of Mechanical Fitting and Rotating Equipment Maintenance. 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 mechanical fitting and rotating equipment maintenance: core concepts. 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 mechanical fitting and rotating equipment maintenance: core concepts 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 mechanical fitting and rotating equipment maintenance: core concepts: 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 mechanical fitting and rotating equipment maintenance: core concepts: 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 2: Rotating and static equipment

Learning objectives

- Explain rotating and static equipment, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Rotating and static equipment
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Mechanical Fitting and Rotating Equipment Maintenance

Detailed teaching notes

Teaching notes

Core explanation. Pumps and compressors transfer energy to fluids; vessels and exchangers provide containment and process functions. Introduce bearings, seals, lubrication and performance envelopes. Equipment identification supports fault communication but does not qualify independent operation.

Decision logic. Use trends and operating context to diagnose problems. Vibration, temperature or pressure anomalies can have several causes. Maintenance requires isolation and competent review, with manufacturer procedures and approved acceptance limits.

Worked example. A pump's vibration rises after a duty change; compare operating conditions before concluding bearing failure.

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 fault-evidence table and decide what further data is needed.

Model answer guide. Include duty point, trend, lubrication, alignment and maintenance history without prescribing live adjustments.

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

Applied activity

Prepare a fault-evidence table and decide what further data is needed.

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: Condition monitoring

Learning objectives

- Explain condition monitoring, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Condition monitoring
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Mechanical Fitting and Rotating Equipment Maintenance

Detailed teaching notes

Teaching notes

Core explanation. Condition monitoring trends indicators such as vibration, temperature, lubricant condition and process performance. A threshold is meaningful only with context, measurement quality and an agreed response. Distinguish detection, diagnosis and prognosis.

Decision logic. Compare data under similar operating conditions and check sensor health. An anomaly should prompt structured investigation, not automatic disassembly or shutdown from this handout. Actual response follows the asset's approved procedures.

Worked example. Vibration rises after a load change but returns to normal at the original duty.

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. Interpret the trend and propose follow-up measurements.

Model answer guide. Consider duty effects, baseline, sensor quality and corroborating evidence before diagnosing damage.

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

Applied activity

Interpret the trend and propose follow-up measurements.

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: Mechanical Fitting and Rotating Equipment Maintenance: Evidence

Learning objectives

- Explain mechanical fitting and rotating equipment maintenance: evidence and decision gates, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Mechanical Fitting and Rotating Equipment Maintenance: Evidence and Decision Gates
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Mechanical Fitting and Rotating Equipment Maintenance

Detailed teaching notes

Teaching notes

Core explanation. Mechanical Fitting and Rotating Equipment Maintenance: Evidence and Decision Gates describes a practical part of Mechanical Fitting and Rotating Equipment Maintenance. 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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: Mechanical Fitting and Rotating Equipment Maintenance: Work Pla

Learning objectives

- Explain mechanical fitting and rotating equipment maintenance: work planning, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Mechanical Fitting and Rotating Equipment Maintenance: Work Planning
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Mechanical Fitting and Rotating Equipment Maintenance

Detailed teaching notes

Teaching notes

Core explanation. Mechanical Fitting and Rotating Equipment Maintenance: Work Planning describes a practical part of Mechanical Fitting and Rotating Equipment Maintenance. 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 mechanical fitting and rotating equipment maintenance: work planning. Decisions require current information, role-appropriate authority, competent review and documented assumptions.

Worked example. Use an applied Namibia-relevant case in which a team plans mechanical fitting and rotating equipment maintenance: work planning while balancing safety, integrity, schedule, cost, environmental protection and local capability.

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

Activity. Prepare a decision brief for mechanical fitting and rotating equipment maintenance: work planning: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

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

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

Applied activity

Prepare a decision brief for mechanical fitting and rotating equipment maintenance: work planning: scope, evidence, assumptions, hazards, safeguards, owner, decision gate and escalation trigger.

Assessment

Formative: 10-question practice quiz with answer feedback

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

Practice

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

Module 6: Mechanical Fitting and Rotating Equipment Maintenance: Data and

Learning objectives

- Explain mechanical fitting and rotating equipment maintenance: data and performance, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Mechanical Fitting and Rotating Equipment Maintenance: Data and Performance
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Mechanical Fitting and Rotating Equipment Maintenance

Detailed teaching notes

Teaching notes

Core explanation. Mechanical Fitting and Rotating Equipment Maintenance: Data and Performance describes a practical part of Mechanical Fitting and Rotating Equipment Maintenance. 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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: Mechanical Fitting and Rotating Equipment Maintenance: Applied

Learning objectives

- Explain mechanical fitting and rotating equipment maintenance: applied case, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Mechanical Fitting and Rotating Equipment Maintenance: Applied Case
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Mechanical Fitting and Rotating Equipment Maintenance

Detailed teaching notes

Teaching notes

Core explanation. Mechanical Fitting and Rotating Equipment Maintenance: Applied Case describes a practical part of Mechanical Fitting and Rotating Equipment Maintenance. 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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: Mechanical Fitting and Rotating Equipment Maintenance: Commun

Learning objectives

- Explain mechanical fitting and rotating equipment maintenance: communication and escalation, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Mechanical Fitting and Rotating Equipment Maintenance: Communication and Escalation
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Mechanical Fitting and Rotating Equipment Maintenance

Detailed teaching notes

Teaching notes

Core explanation. Mechanical Fitting and Rotating Equipment Maintenance: Communication and Escalation describes a practical part of Mechanical Fitting and Rotating Equipment Maintenance. 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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: Mechanical Fitting and Rotating Equipment Maintenance: Knowled

Learning objectives

- Explain mechanical fitting and rotating equipment maintenance: knowledge check, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Mechanical Fitting and Rotating Equipment Maintenance: Knowledge Check
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Mechanical Fitting and Rotating Equipment Maintenance

Detailed teaching notes

Teaching notes

Core explanation. Mechanical Fitting and Rotating Equipment Maintenance: Knowledge Check describes a practical part of Mechanical Fitting and Rotating Equipment Maintenance. 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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: Mechanical Fitting and Rotating Equipment Maintenance: Compe

Learning objectives

- Explain mechanical fitting and rotating equipment maintenance: competence review, interpret a case, select appropriate controls and justify a documented decision.

Lessons

1. Purpose and key terms of Mechanical Fitting and Rotating Equipment Maintenance: Competence Review
2. Systems and operating context
3. Evidence, assumptions and decision gates
4. Hazards, safeguards and escalation
5. Applied case: Mechanical Fitting and Rotating Equipment Maintenance

Detailed teaching notes

Teaching notes

Core explanation. Mechanical Fitting and Rotating Equipment Maintenance: Competence Review describes a practical part of Mechanical Fitting and Rotating Equipment Maintenance. 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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 mechanical fitting and rotating equipment maintenance: 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.