

Briefing Session


Mechanical engineering manager of underground coal mines

Mechanical engineer of coal mines other than underground mines

Greg Connolly
Inspector of Mines

03 May 2024





The Department of Regional New South Wales acknowledges that it stands on Country which always was and always will be Aboriginal land. We acknowledge the Traditional Custodians of the land and waters, and we show our respect for Elders past, present and emerging. We are committed to providing places in which Aboriginal people are included socially, culturally and economically through thoughtful and collaborative approaches to our work.

Panel

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The Panels

The examination panel for Mechanical engineering manager of underground coal mines certificate of competence is represented by:

- Convenor – Greg Connolly (Inspector of Mines – NSW Resources Regulator)
- Panel Member – Shayne Gillett (Engineering Manager – Centennial)
- Panel Member – Gregory Gleeson (Mine Mech Superintendent - Centennial)

The examination panel for Mechanical engineer of coal mines other than underground mines certificate of competence is represented by:

- Convenor – Greg Connolly (Inspector of Mines – NSW Resources Regulator)
- Panel Member – Nicholas Arnold (Business Improvement – Whitehaven Coal)
- Panel Member – Alison Pepper (Senior Mechanical Engineer – Hunter Valley Operations)

Appointed examiners assess candidates through the certificate of competence assessment process. This includes preparing questions and marking responses for written and oral exams.

These examiners may include any Resources Regulator Inspector of Mines.

Preparation

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Be Informed & Prepared

- 1. Read the guides and prerequisites required for the statutory function you want to apply for.**
 - Certificate of competence guide
 - Additional guides for Mechanical engineering manager of underground coal mines and Mechanical engineer of coal mines other than underground mines
 - Review the best practice guides and resources to better understand and prepare yourself.
 - Ensure you meet all the criteria and practical experience set in the guide before you apply.
 - Get all your identification, qualification and transcript certificates certified. Click here on how to certify your documents.

Be Informed & Prepared

2. Request access to Resources Regulator – Mining Workers Portal.

- <https://nswresourcesregulator.service-now.com/regulator>
- A help guide for navigating the portal is available [here](#).
- Up to 3 business days processing time.
- Certified identification required.

3. Closing dates for application and exams are available [here](#).

Application closing date for both statutory functions – 3 July 2024

4. Subscribe to the Mine Safety Newsletter [here](#).

Important Dates

| Exam Round | Dates |
|---|------------------|
| Application closing dates | 3 July 2024 |
| Written exams | 31 July 2024 |
| Oral exam closing dates | 4 September 2024 |
| Oral exams | 16 October 2024 |
| Oral exam closing dates (2 nd attempt) | 29 January 2025 |
| Oral Exams (2 nd attempt) | 12 March 2025 |

Tertiary or vocational qualification - Mechanical engineering manager of underground coal mines & Mechanical engineer of coal mines other than underground mines

Any one of the following:

- Bachelor of Engineering (Mechanical Engineering) issued by an Australian university, or
- Bachelor of Engineering issued by an Australian university in the following areas of practice (or equivalent):
 - mechatronics
 - manufacturing
 - maintenance
 - aeronautical
 - avionics
 - refrigeration
 - automotive

and, eligible to be registered as an Engineer in the Engineering Australia Mechanical college by Engineers Australia.

- MEM60112 Advanced Diploma of Engineering (Mechanical) issued by a registered training organisation (the superseded qualification MEM60111 Advanced Diploma of Engineering, or other equivalent superseded qualification is acceptable), or
- Associate Diploma of Engineering (Mechanical Engineering) issued by a registered training organisation.

Tertiary or vocational qualification - Mechanical engineering manager of underground coal mines & Mechanical engineer of coal mines other than underground mines

Emergency preparedness unit:

Mechanical engineering manager -

- RIIERR602E Establish and maintain underground coal mine emergency preparedness and response systems, issued by a registered training organisation

*the superseded unit numbers RIIERR602D & RIIERR602A Establish and maintain underground coal mine emergency preparedness and response systems, or other equivalent superseded unit number is acceptable.

Mechanical engineer -

- RIIERR601E Establish and maintain mine emergency preparedness and response systems, issued by a registered training organisation

(the superseded units RIIERR601D and RIIERR601A Establish and maintain mine emergency preparedness and response systems, or other equivalent superseded unit number is acceptable).

If you hold a qualification/unit of competence that is not specified as a prerequisite, refer to [Fact sheet - Recognition of qualifications and units of competence.](#)

Practical Experience - Mechanical engineering manager of underground coal mines

A minimum of 5 years* practical underground coal mine experience, including:

- a minimum two continuous years involved in the installation, commissioning, maintenance and repair of mechanical plant (this must be included in the 5 years of experience above), and
 - within that 2 years' experience above, one year must involve mechanical plant:
 - with a minimum 6 months at an extraction face during production or development works and
 - during other mining activities
- a minimum 2 years in a supervisory role responsible for the control and management of mechanical plant at an underground coal mine.

*In the 5 years of experience, up to one year in any other class of mine and one year working as a mechanical engineer in another industry may be included.

Your experience must be verifiable and/or signed off by your supervising manager who holds a Mechanical Engineering Manager of underground coal mines practising certificate.

Practical Experience -

Mechanical engineer of coal mines other than underground mines

A minimum 4 years* practical coal mine other than underground experience, including:

- a minimum 2 continuous years involved in the installation, commissioning, maintenance and repair of mechanical plant (this must be included in the four years of experience above), and
 - within that 2 years' experience, one year must involve mechanical plant:
 - for a minimum of 6 months at an extraction face during production or development works and
 - during other mining activities
- a minimum one year in a supervisory role responsible for the control and management of mechanical plant at a coal mine other than underground

*In the 4 years of experience, up to one year in any other class of mine and one year working as a mechanical engineer in another industry may be included.

Your experience must be verifiable and/or signed off by your supervising manager who holds a Mechanical Engineer of mines other than underground mines practising certificate.

Portfolio of Evidence

You must attach the following documents as evidence of your competence:

1. **Risk assessment** – a copy of a WHS risk assessment that you were involved in at your mine during the past 3 years.
2. **Workplace inspection** - a copy of a WHS workplace inspection, task observation or audit, that you carried out and documented for your mine in the past 3 years.
3. **Review of principle hazard management plan or control plan** – evidence, such as a report, of your involvement in reviewing a principal hazard management plan or control plan at your mine.

Portfolio of Evidence

4. **Shift handover report, shift work plan or compliance report** -a copy of a WHS shift handover report, shift work plan or compliance report that you completed in the past 6 months.
5. **Delivery of workplace training program** (may include mentoring or coaching) -evidence of a WHS related training program in a mining or related field that you were involved in developing and delivering for workers in full or part of it at your mine (e.g. toolbox talks, shift or work group briefings).
6. **Safe work procedure or related document for standard setting** -a copy of a safe work procedure or related document for standard setting (e.g. work instruction, work order job detail) that you actioned at your mine during the past 3 years.

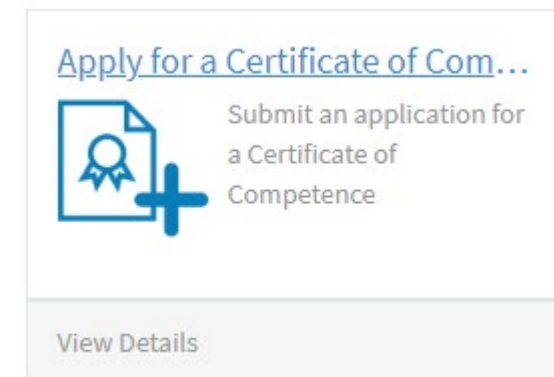
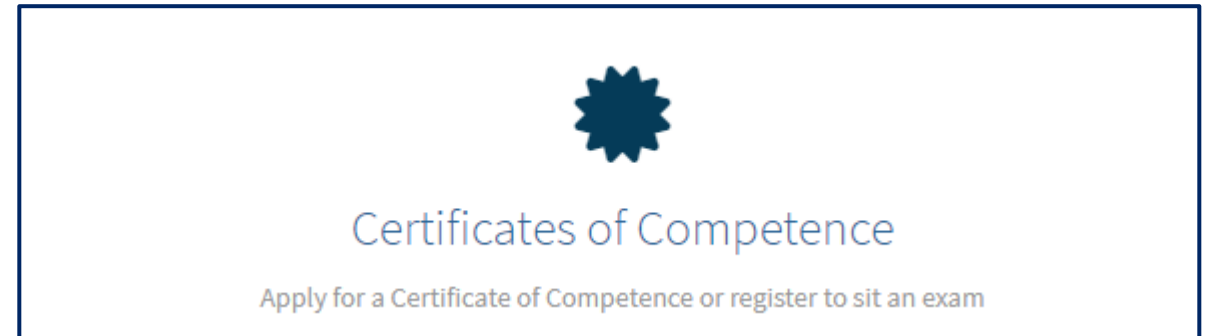
For more information about portfolio requirements refer to the [Portfolio requirements: certificate of competence examination process.](#)

Application

3

Complete your application

1. Log on to the Resources Regulator Portal.
2. Browse to the Mining Worker's Portal.
3. Click on Certificate of Competence.
4. Click on Apply for a Certificate of Competence.



Complete your application

4. Fill in the application form;
 - Click [here](#) to see a sample practical experience.
 - **All columns must be completed or you risk the application being rejected.**
 - Your experience must be verified and/or signed off by your supervising manager who holds the required practising certificate.
 - Applications can be saved as a draft.
5. Pay the application fee, click [here](#) for more details.
6. Once you submit the application form and if you had chosen to, the next step is to register to sit the upcoming exam.
7. Select the exam and date, register to sit the exam.

NO LATE REGISTRATIONS WILL BE ACCEPTED – submit the application before the closing date


As of 1 July 2024; if a candidate has been unsuccessful in any 2 certificate of competence exam round attempts, they must submit a plan form explaining how they will prepare for passing future exam attempts. This form will be submitted as part of their application to resit the next round of exams to the Resources Regulator for approval.

Register to sit an exam

* Indicates required

Register to sit an exam

Register to sit an examination for a Certificate of Competence



* Name

* What certification does this exam registration relate to?

* What exam are you registering to sit?

* What exam paper(s) are you registering to sit?

* Have you previously applied for or sat an examination for this statutory function?


- Complete the form as required
- Certification (Mechanical engineering manager of underground coal mines)
- Exam (Written, Oral)
- Exam Paper(s)
 - Written – CME1 Mechanical engineering applicable to underground coal mines and
 - Written - CME2 Legislation and Australian Standards applicable to underground coal mines
 - Oral – CME3
- Resitting an exam? you will need to pay the application fee again.

Register to sit an exam

* Indicates required

Register to sit an exam

Register to sit an examination for a Certificate of Competence



* Name

* What certification does this exam registration relate to?

* What exam are you registering to sit?

* What exam paper(s) are you registering to sit?

* Have you previously applied for or sat an examination for this statutory function?

- Complete the form as required
- Certification (Mechanical engineer of coal mines other than underground mines)
- Exam (Written, Oral)
- Exam Paper(s)
 - Written – CME3 Safety and mining legislation for open-cut mines
 - Oral – CME4
- Resitting an exam? you will need to pay the application fee again.

Register to sit an exam

Existing applicants can register for exam anytime providing their application is still active.

Home > All Catalogs > Certificates of Competence

Search


Catalogs

All

Categories


- Application for internal review
- Mining Act Forms
- Safety and Health Reporting
- Operation Notifications

Certificates of Competence




Apply for a Certificate of Com...
Submit an application for a Certificate of Competence

[View Details](#)



Register to sit an exam
Register to sit an examination for a Certificate of Competence

[View Details](#)



Review of examination outcome
Submit a request for review of an examination outcome

[View Details](#)

What's next?

- Your application will be reviewed. Any additional requirements will be communicated with you via email.
- Once your application is checked for completeness - documents, portfolio and practical experience verified; your application will be sent for endorsement by the Convenor.
- Once the Convenor has endorsed your application for experience, it will be sent to the Mining Competencies Manager for approval.
- Once your application has been approved, your exam status will change from 'Expression of Interest' to 'Waitlist'. You can see this via the Mining Worker's Portal.
- You will be invited to sit the exam via email closer to the exam date.



Exam Invitation

Within the invitation:

- Details of the exam your sitting and the certification.
- How to pay the applicable sitting fee.
- Location, date and time for the exam.
- Important information noted in the attendance comments.
- You **must accept or decline** the exam invitation (otherwise our system will regard you as not attending).
- **Note** –you need to be logged in to the Mining Worker’s Portal **before** clicking on the accept/decline link e.g CANPAPER000_-----.
- If you can no longer attend, you can withdraw your invitation via the Mining Worker’s Portal.
- If sitting multiple written exams, you will receive a separate email invitation for each exam.
- Keep your contact details and workplace up to date via the Mining Worker’s Portal.
- Any changes to your email address, please email us at mca@regional.nsw.gov.au

Do you need help?

- **Website:** <https://www.resourcesregulator.nsw.gov.au/safety-and-health/applications/mining-competence/certificate-of-competence>
- **Email:** mca@regional.nsw.gov.au
- **Phone:** 1300 814 609 option 2 > option 3
- **Mining Worker's Portal:** check for updates, progress, emails, results.

Examination

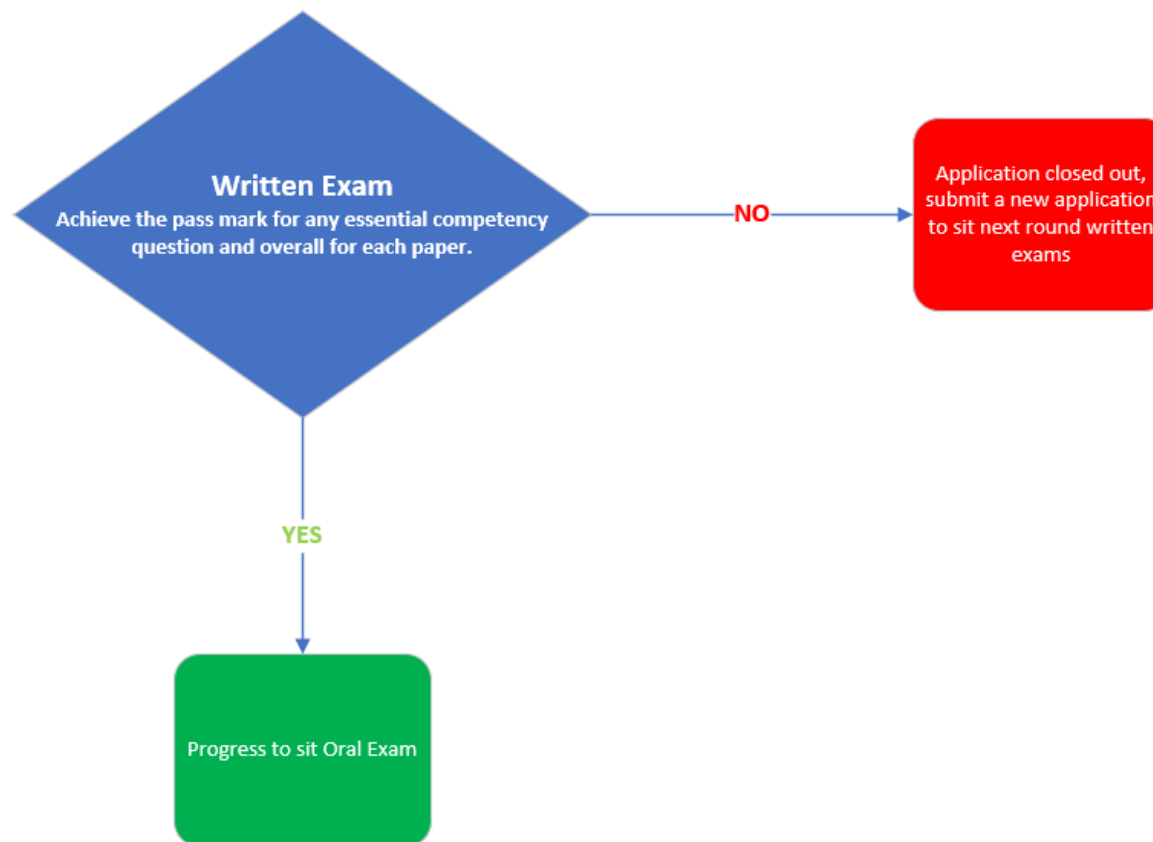
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Changes to examinations for candidates – New Candidates

New candidates are candidates who have either submitted an application or started a new examination process after 1 July 2022.

Written Exam:

- Candidates will require to pass the written exam/s to be eligible to progress to sit the oral exam.
- If you fail the written exam/s the application will be closed. You will be required to submit a new application to sit the next round.



Changes to examinations for candidates – New Candidates cont

Oral Exam:

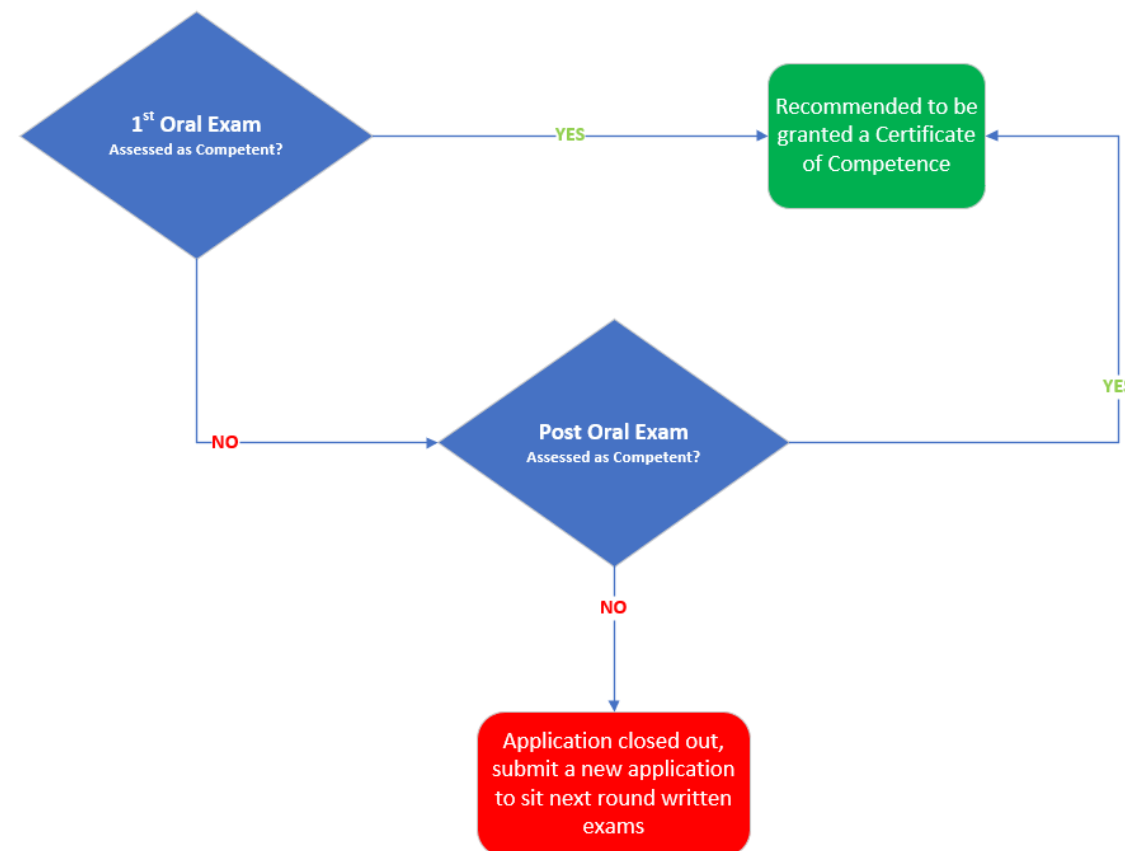
Candidates will be eligible to sit two (2) oral exam attempts within the exam round. Should a candidate not sit one or both oral exam/s within the exam round, the attempt/s will be forfeited. You cannot defer your attempt.

Attempt one (1) -

- If you are assessed as competent, you will be recommended to be granted a Certificate of Competence.
- If you are assessed not yet competent for your first oral exam attempt, you will be eligible to sit the second oral exam within the same exam round.

Attempt two (2) -

- If you are assessed as competent for your second oral attempt, you will be recommended to be granted a Certificate of Competence.
- If you are assessed not yet competent at your second oral exam attempt, the application will be closed. You will be required to submit a new application and re-commence the process.



Changes to examinations for candidates – Existing Candidates

Existing candidates are candidates who have either submitted an application or started an examination process before 1 July 2022.

Written Exam:

- Candidates will require to pass the written exam/s to be eligible to progress to sit the oral exam.
- If you fail the written exam/s, you will only sit the exam/s you failed in the next exam round. A register to sit form on the Mining Worker's Portal will need to be submitted and you will need to pay the application fee again.
- Candidates will only have three (3) attempts to sit the written exam/s within three (3) years from submitting your application.

Oral Exam:

- Candidates will be eligible to sit three (3) oral exam attempts within 3 years of passing the written exam.
- If you are assessed not yet competent for your third and final oral exam attempt, the application will be closed. You will be required to submit a new application and re-commence the process.

Results and Feedback

- Candidates will be notified of exam results via email – within 6 weeks.
- Written Exams – once you have received the results email, you will compare your notified results against the relevant exam paper/s published on the website after the exam.
- Oral Exams – once you have received the results email and would like feedback, you can request it by replying to the results email.
- Alternatively, you can contact us via mca@regional.nsw.gov.au or 1300 814 609 option 2 > option 3.
- The examiner comments will be provided to you over the phone – be prepared to note down the comments.
- If you attempt to contact the examiners directly, you will be referred to the Mining Competencies Team.
- For further information in relation to feedback and seeking a review of exam outcome refer to the review of certificate of competence assessment outcome policy and procedure.
- An Examiner report will be published at the conclusion of an exam round, refer to current examiner report(s) on the website.

Mechanical Engineering Manager Mechanical Engineer Certificate of Competence

Examination Briefing

Greg Connolly
Convenor of Mechanical Engineering Exams

2024



Presentation summary

This presentation will cover:

- Consider -Who, How, What, When
- Application process
- Mechanical Exam format
- Question types – Essential versus Standard
- Exam preparation and considerations

Mechanical Panels

| | | |
|--------------------|-----------------|----------------------------|
| Greg Connolly | Regional NSW | Convenor |
| Shayne Gillette | Centennial | Underground |
| Greg Gleeson | Centennial | Underground |
| Nick Arnold | Whitehaven | Surface |
| Alison Pepper | Glencore | Surface |
| Ben Withers | Glencore | Reserve Underground |
| Peter Berkholz | Regional NSW | Reserve Surface |

Linda Matthews – Mining Competencies (administration) - Maitland

How is competency assessed?

| | |
|----------------------------|--|
| Engineering qualifications | <i>assessed at application</i> |
| Industry experience | <i>assessed at application and portfolio</i> |
| Industry knowledge | <i>assessed by written examination</i> |
| Industry understanding | <i>assessed by oral examination</i> |

Refer to NSW Resources Regulator guide to

- Certificate of Competence
- Statutory function description
- Mechanical Engineering Manager of underground coal mines
- Mechanical Engineer in coal mines other than underground mines
- Competencies framework and for each statutory function

Engineering Qualifications

Bachelor of Engineering (Mechanical Engineering) issued by an Australian university, or

Bachelor of Engineering issued by an Australian university, and **eligible to be registered** as an Engineer in the Engineering Australia Mechanical college by Engineers Australia, in the following areas of practice (or equivalent):

- Mechatronics
- Manufacturing
- Maintenance
- Aeronautical
- Avionics
- Refrigeration
- Automotive

MEM60112 Advanced Diploma of Engineering (Mechanical) issued by a registered training organisation (a qualification issued with a superseded course number is acceptable), or

Associate Diploma of Engineering (Mechanical Engineering) issued by a registered training organisation (a qualification issued with a superseded course number is acceptable).

Portfolio

An electronic copy of a portfolio containing evidence of your involvement from the previous 3 years is to be submitted with your application, including:

- Risk assessment
- Workplace inspection
- Review of principal hazard management plan or control plan
- Shift handover report, shift work plan or compliance report
- Delivery of workplace training program/mentoring or coaching
- Safe work procedure or related document for standard setting

The MEM or ME signing off your experience can be asked to verify documents

Written Exam

- Consists of one or two papers of relevant subjects – **per Annexure A of Guide**
- Closed book – reference materials provided
- Each question will be marked
- Essential and desirable competencies being assessed in a question will be clearly identified so you know what you are being assessed on
- For multiple choice or fill in the blank questions your answer will be correct or not
- For short and long answer questions, including diagrams or schematics, your answer will be marked based on correct items of information and/or methodology.
- To be deemed competent for each exam you must be competent for any essential questions, and a suitable proportion of the routine questions. For example if there is one essential question and ten routine questions then you must be competent for the essential question, and may be required to pass 6 of the 10 routine questions.
- Must be deemed competent in all written exams to progress to Oral Exams

Essential Questions

- Subject matter identified as compulsory for candidate to know. Examples include legislation specific to the role of the Mechanical Engineer, or the content of the Mechanical Engineering Control Plan, or mobile plant safety critical systems such as brakes or steering
- Identified in exam paper as an essential question, or an essential element of a question
- Candidates answers marked, and identified as competent / not yet competent
- Does not require everything correct, but enough items correct to indicate competence. For example 6 out of 10 items correctly identified
- If Candidate is marked not yet competent for that question then they are considered not yet competent for entire exam.
- If you are not yet competent for an essential element in a question then you are considered not yet competent for the question

Standard Questions

- Subject matter identified as recommended for candidate to know. Examples include PHMP, standards of engineering practice, contractor management, practical knowledge of plant and equipment, specific areas of technical knowledge, etc
- Candidates answers assessed for correct items of information and marked accordingly
- Does not require everything correct, but must accumulate sufficient marks to be considered competent for the exam
- If an underground candidate is assessed competent for only one of the two exams, either legislation or mechanical practices, then they are deemed not yet competent overall

CME1 Exam – UG Mechanical Practices

- 3 hours
- Practical scenarios where mechanical knowledge is to be applied
- Topics may cover all aspects of mining mechanical knowledge
- May include essential question(s) or element(s)
- All questions compulsory
- Candidates answers marked against template criteria
- Exam result is competent / not yet competent

CME2 Exam – UG Legislation

- 2 hours
- Knowledge of legislation (WHS, WHS(MPS), gazettal, etc) and practical scenarios where legislation is to be applied
- May include essential question(s) or element(s)
- All questions compulsory
- Candidates answers marked against template criteria
- Exam result is competent / not yet competent

CME3 Exam – Surface Mechanical / Legislation

- 2.5 hours
- Practical scenarios where mechanical and legislative (WHS, WHS(MPS), gazettal, etc) knowledge is to be applied
- Topics may cover all aspects of mining mechanical knowledge
- May include essential question(s) or element(s)
- All questions compulsory
- Candidates answers marked against template criteria
- Exam result is competent / not yet competent

Exam process format

New Candidates

- must pass the written and oral exams in the same examination year
- Blueprint process has been reviewed, and implemented
- Requirements for competence will be detailed on written exam
 - **Competent for all essential benchmarks**
 - **Meet the minimum standard for each exam**
- If you are not yet competent in one exam you restart the process

Existing candidates will continue to resit under the current rules

Examinations - Practicalities

Exam process

- Allowed in the exam are
 - Pens, pencils and eraser
 - Drawing equipment such as ruler, set square, protractor, circle template, etc
 - Highlighter pens
 - Non programmable calculator
- Mobile phones are **NOT** permitted on exam table. Watches should not be taken in, **especially not smart watches with internet connectivity**. A clock will display exam time.

Examination technique

- During the 10 minute reading time candidates may use a **highlighter** to identify the important points within the question. **NO PENS**
- Read the question and understand it, such as:
 - if you are asked to describe 5 items, then describe 5 items
 - If you are asked how you would manage a hazard on site then describe both the assessment of the hazard and the system you would implement. What you would do in practice?
 - If you are asked what is your understanding of a legislative clause we do not want a word for word copy of the clause, but what it means in terms of applying the legislation
 - If you are asked how you would implement a legislative clause then describe the system(s) you would develop, and the process to implement

Examination technique

- All questions are to be answered within the examination question booklet provided. Extra pages provided at the back of booklet. Identify question number
- Use of drawings as part of your answer is acceptable
- Provide answers in point form where applicable
- Use of safety concepts such as Nertney wheel or 10 hurdles
 - No marks are awarded if you quote a safety concept for your answer or draw it with coloured pencils
 - Marks will be awarded if you demonstrate how you would use a particular concept in answering the question
- Generally, a couple of questions may relate to recent significant incidents

Examinations - Expectations

As a minimum the candidate will be aware of the following:

Legislation (current versions)

- Work Health and Safety Act and Regulations
- Work Health and Safety (Mines and Petroleum Sites) Act and Regulations
- Gazettal Notices

Resources Regulator publications

- Code of Practice: Mechanical Engineering Control Plan
- Safety Alerts
- Safety Bulletins
- Incident releases
- Planned Inspection and Targeted Assessment reports

Examinations - Expectations

Candidates shall:

know the specific legislative clause content relating to:

- The role of the Mechanical Engineer
- The requirements of the Mechanical Engineering Control Plan (MECP)

have practiced hand writing for 2 – 3 hours so their writing remains legible

Preparation

Resources available include:

- Past examination papers
- Examiners reports

Written Exam Tips

Written examination

- Study groups
- Time management – calculate, look at space provided
- Dot points okay
- Acronyms okay – unless they are specific to your mine
- Legible writing and diagrams


Any candidates marked competent for any essential question, and is borderline competent for the remainder of the paper, will automatically be entitled to a remark of their paper. This remark will be done by another examiner.

Oral Examination

Examinations are held to assess a candidates competence to hold a certificate.

- Relates to mining conditions and safety practices in NSW mines –*refer Annexure A of Guide*
- Assesses candidate understanding of how their knowledge is applied from a practical perspective
- Considers static and dynamic scenarios
- Identifies candidates capabilities in relation to non technical skills
- Examination Panel of two or three peers –*generally three (3)*
- 60 – 75 minute duration
- Responses from candidates to oral questions are evaluated and assessed
- Exam result is competent or not yet competent

Logbook



Planning,
Industry &
Environment

LOG BOOK FOR VISITS TO COAL OPERATIONS

Start a separate page for each visit If required, use more than one page for each visit Extra notes may be attached

Your name
Date of visit / /
Name of coal operation

| Type of operation: Coal/Metal/Extractive | | What are the objectives for the visit? | Did you achieve the objectives? |
|---|--|--|---------------------------------|
| Open Cut | | | |
| Underground | | 2. | |
| CHPP | | 3. | |

| What did you do during your visit? | |
|------------------------------------|----------|
| Approximate times | Activity |
| | |
| | |
| | |
| | |
| | |
| | |

| Who did you meet / see? | |
|-------------------------|-----------------------------------|
| Name / Position | Issues discussed with this person |
| | |
| | |
| | |
| | |
| | |
| | |

| What did you learn? | |
|------------------------------------|------------------------------|
| From observations in the workplace | From discussions with people |
| | |
| | |
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| | |

| | | | |
|---|-------------|------------------|-------------|
| Verification of site visit - to be signed by manager at visited operation or trainer from the training provider (if visit was organised by the training provider) | | | |
| | Name | Signature | Date |

Note: this sheet may be used:

- As a cover page for more comprehensive notes/information on visits to coal operations, and / or
- For visits to original equipment manufacturer (OEM) or attendance at conferences - if applicable.

PUB17/156

<https://www.resourcesregulator.nsw.gov.au/safety-and-health/applications/mining-competence/certificate-of-competence/forms-and-exam-resources>

Oral Exam Tips

- Mock orals – *practice, practice, practice*
- Benchmarking – *visit other mines to understand comparison*
- Log book of mine visits – *examiners will discuss at start of oral exam*
- Oral questions – *starting point for conversation*
- Examiners Report – *provide information on areas of improvement*

Thank you

Mining Competence Team

T: 1300 814 609 option 2 > option 3

E: mca@regional.nsw.gov.au

W: <https://www.resourcesregulator.nsw.gov.au/safety-and-health/applications/mining-competence>