



# **GRADUATE DIPLOMA IN MINE VENTILATION**

## **& STATUTORY COAL MINE VENTILATION**

### **OFFICERS QUALIFICATION**

#### **Introduction And Course Objectives**

The Australian National Centre for Mine Ventilation (ANCMV) was established in 1999 and is an initiative of MTEC, the tertiary minerals education arm of the Minerals Council of Australia. The ANCMV is affiliated to The School of Mining Engineering at the University of New South Wales (UNSW).

The Graduate Diploma in Mine Ventilation was established in 2000. From 2002 it has been offered in a flexible delivery format using conventional learning methods supported by an internet platform.

The Diploma is structured so that it can be tailored to the needs of either the metalliferous or coal mining sectors. The accredited programmes offered by UNSW for the appointment of statutory Coal Mine Ventilation Officer's in both New South Wales and Queensland can be taken as an option in the Diploma or as a separate course of instruction.

The objectives of the course are to provide competency based education and training in key aspects of underground environmental engineering. The course contents have been developed from standard texts, industry guidelines and case studies. These are delivered from both a theoretical and operational perspective with the aim that course contents will be immediately relevant to industry.

#### **Coal Mine Ventilation Officer Only Qualification**

The Coal Mine Ventilation Officer course can be taken independently at lower cost and without enrolling for the Diploma. This facility has been provided for candidates who require the Ventilation Officer qualification but do not wish to enrol for the Diploma.

#### **Delivery Format**

The delivery format is flexible and utilizes a mix of internet and conventional learning techniques. Based on WebCT™, it will be supported by;

- Course notes on CD
- Learning guides
- Online presentations
- Face to face tutorials and practical sessions,
- Reference books
- Online interactive peer networked sessions.

#### **Reference Books:**

A copy of the following reference books (or equivalent) will be provided;

1. Mine Ventilation And Air Conditioning (Grad Dip only)
2. Le Roux's Notes On Environmental Engineering.
3. Mine Fires In Australian Underground Coal Mines
4. Spontaneous Combustion In Australian Underground Coal Mines.

#### **Course Contents**

The course contents are divided in to the following sections;

<b>Module 1</b>	1.1 Fluid Flow
<b>Ventilation And Mine Services</b>	1.2 Fans And Auxiliary Ventilation
	1.3 Ventilation Network Simulation
	1.4 Ventilation System Monitoring And Mine Services
<b>Module 2</b>	2.1 Mine Gases And Gas Laws
<b>Environmental Contaminants</b>	2.2 Atmospheric Gas Monitoring
	2.3 Airborne And Explosible Dust
	2.4 Mine Fires And Explosions
<b>Module 3</b>	3.1 Psychrometry
<b>Heat In Underground Mines</b>	3.2 Heat Transfer And Sources Of Heat
	3.3 Heat Stress Management
<b>Module 4</b>	4.1 Management Plans And Risk Assessment
<b>Ventilation System Management</b>	4.2 Project Economics
<b>Module 5</b>	5.1 Gas Reservoir Characteristics
<b>Coal Mine Hazards And Control</b>	5.2 Gas Drainage, Outbursts And Windblasts
	5.3 Spontaneous Combustion Of Coal
<b>Module 6</b>	6.1 Coal Mine Legislation
<b>Coal Mine Ventilation</b>	6.2 Coal Mine Ventilation Planning And Practice
	<b>Module 7</b>
<b>Metalliferous Mine Hazards And Control</b>	7.2 Ionising Radiation
	<b>Module 8</b>
<b>Metalliferous Mine Ventilation</b>	8.2 Metalliferous Mine Ventilation Planning And Practice

Modules 1,2,3 and 4 are common to both metalliferous and coal mine courses with modules 5&6 or 7&8 taken as options. The Ventilation Officer only course has a reduced assignment load and more advanced, non-core risk related aspects are covered in summary only.

#### **Tutorials**

Three "face to face" tutorial sessions are incorporated in the course. The sessions are:

**Introduction** – a one week overview of the course, summary of each module and explanation of course work and examination requirements. Module 1 Ventilation And Mine Services will be covered in detail to ensure candidates have the underpinning knowledge and competencies for the remainder of the course.

Although this introductory session is not compulsory, it is strongly recommended that candidates attend.

**Practicals** – two one-week tutorials covering use of ventilation network simulation software together with laboratory and underground practical aspects of the course will be provided.

These will also be used for revision and to monitor candidate's progress.

It is a compulsory requirement of the course that, candidates wishing to obtain the statutory Ventilation Officer–Coal qualification, attend at least one of these practical sessions. The location and timing of practical sessions are subject to numbers and location of candidates. They may, for example, be offered at more than one location.

### **Coursework And Examinations**

Candidate's progress will be monitored by coursework and self assessment tests provided for each module. This work will be completed according to a pre determined course schedule. Together with mine site assignments and laboratory sessions, it will form a significant part of the course marks and assessment.

There will also be final written examinations that will be undertaken at UNSW or, if necessary, a suitable establishment more accessible to candidates.

### **Assessment**

The option exists to be assessed to National Competency Standards. This is compulsory for those wishing to satisfy the performance criteria and underpinning knowledge requirements agreed by the industry in Competency Unit MNC109 – Statutory Ventilation Officer – Coal.

### **Course Pre-requisites**

It is assumed that candidates have sufficient underground experience to understand mining terminology and appreciate operational issues associated with course contents.

A reasonable ability in mathematics and use of spreadsheets is required for participants to gain most from the course.

Access to a computer with internet access is essential. Candidates will need laptop computing facilities at tutorial sessions.

### **Course Organiser**

**Assoc. Prof. Roy Moreby.** Director Australian National Centre For Mine Ventilation, School Of Mining Engineering UNSW.

Consultant to the underground coal and metalliferous mining industries with 25 years experience.  
Formerly Mine Official, Consolidated Gold Fields, South Africa  
Ventilation Engineer, Carnon Consolidated, UK  
Senior Ventilation Engineer – Pasminco Mining, Australia  
Ventilation And Gas Drainage Engineer – Shell Coal Australia

### **Course Presenters**

- **Assoc. Prof. Roy Moreby.**
- **Mr Duncan Chalmers.** Senior Lecturer, School of Mining Engineering ,UNSW.  
Formerly Head Teacher, Mining, Illawarra Institute of Technology.  
Under manager in Charge.
- **Select industry experts** as required.

### **Awards**

Successful Diploma candidates will receive a UNSW Diploma in Mine Ventilation. An academic transcript of course options completed will be made available.

Candidates completing requirements for the statutory Ventilation Officer – Coal qualification (Diploma or Ventilation Officer only course), will receive an additional certificate to that effect.

### **Course Costs**

Diploma cost for Australian students will be approx : \$17,460

Diploma cost for non-Australian students will be approx: \$18,360

Ventilation Officer–Coal only qualification cost will be \$9,000

This cost excludes, transport or accommodation associated with tutorials, however, lunches will be provided

### **Timetable**

<b>Milestone</b>	<b>By When</b>
<b>ONLINE APPLICATIONS</b>	30th November 2008
<b>VO Registration/ enrolment</b>	<b>19<sup>th</sup> December 2008 latest</b>
	16 <sup>th</sup> March 2009
Commence course with introduction tutorial	15 <sup>th</sup> June 2009
Second tutorial	
Third tutorial & final exams	November 2009 (TBA)

*Note that formal enrolment in the university system is not required for the Ventilation Officer only course, but is required for the Graduate Diploma course.*

### **Registration**

To receive a course registration form and payment details or for any questions, please contact

Kim Russell email [postgrad.mining@unsw.edu.au](mailto:postgrad.mining@unsw.edu.au)

phone +61 (2) 93855346

Please also copy email correspondence to

Roy Moreby [r.moreby@unsw.edu.au](mailto:r.moreby@unsw.edu.au)