

Ventsim™ Classic and Ventsim Visual™ training courses with Mine Ventilation Australia

Mine Ventilation Australia (MVA) offers up-to-date and practical training in the use of both **Ventsim™ Classic** (version 3.9, the original and still widely-used Ventsim™ software) and the new **Ventsim™ Visual** software. Further details of both these programs is provided on the Ventsim™ web site (see <http://www.ventsim.com/>) and on the attached page but in *summary*:

- **Ventsim™ Classic** assumes incompressible air (satisfactory for mines up to about 1000 m deep) and cannot simulate heat loads or predict underground temperatures
- **Ventsim Visual™** comes in two forms:

<ul style="list-style-type: none"> • Ventsim Visual™ Standard <ul style="list-style-type: none"> ○ Full 3D interface, animation and dynamic colouring ○ Approximately 35 simulated data types ○ Incompressible flow simulation ○ Contaminant tracking and simulation 	<ul style="list-style-type: none"> • Ventsim Visual™ Advanced <ul style="list-style-type: none"> ○ All the features of Ventsim Visual™ Standard PLUS ○ Thermodynamic environmental simulation ○ Compressible airflows self adjusting fan curves ○ Financial simulation functions ○ Recirculation prediction ○ Diesel Particulate Matter spreading
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The MVA Ventsim™ training courses have been developed by practitioners who have been using Ventsim™ since it was originally created, who use it continually in their ventilation consultancy practice, and who provided specialist technical advice to Ventsim™ during the creation of Ventsim Visual™. These courses are full of useful tips, tricks and techniques, and pitfalls to avoid, for getting the best and most reliable results from your Ventsim™ modelling. The course notes (190 pages for Ventsim™ Classic and Ventsim Visual™ Standard, 250 pages for Ventsim Visual™ Advanced) are comprehensive and fully illustrated.

The training course for Ventsim™ Classic and Ventsim Visual™ Standard is two days duration, with a further one day module for Ventsim Visual™ Advanced (effectively an extra day on the heat load modelling and other unique features of Ventsim Visual™ Advanced). The training is a mixture of demonstration by the course leader (Dr Rick Brake) and Ventsim™ exercises and case studies by the participants.

Courses are offered both in a fully-accredited version (part of the Australian Qualifications Framework) and a non-accredited version. *The course materials and course program for accredited and non-accredited courses are identical.* The additional cost of the accredited course covers marking of assignments, tutorial support and the registration of the accreditation.

NO GST is payable on the accredited versions of these courses, i.e. being part of the AQF, they are GST exempt. Note that course costs change from time to time. These costs may not be current. Check with MVA for current costs.

Course	Duration	Scope	Payment (accredited)	Payment (non-accredited)
Ventsim™ Classic	2 days (Mon-Tue)	Network analysis, fan selections, placement of circuit fans and regulators, etc	\$2400 GST exempt	\$1900 + GST
Ventsim Visual™ Standard	2 days (Mon-Tue)	Network analysis, fan selections, placement of circuit fans and regulators, etc	\$2400 GST exempt	\$1900 + GST
Ventsim Visual™ Advanced module	1 day (Wed)	Modelling exercises involving compressible airflows, natural ventilation pressures, heat modelling and temperature predictions	n/a	\$950 + GST

You can only elect to use one type of software, e.g. you cannot decide to do the first two days in Ventsim™ Classic and then the third day using Ventsim Visual™. It is not possible to enrol in only the Ventsim Visual™ Advanced (third day) module.

MVA provides temporary fully-functioning Ventsim™ licences for all students undertaking either the Ventsim™ Classic or Ventsim™ Visual courses. This is included in the course cost. Therefore a student can do these courses even if their mine does not currently have or use the software. There is no reduction in course cost if you already have the software.

Courses are subject to maximum and minimum numbers and can be cancelled with 7 days notice if sufficient registrations are not received.

In all courses:

- Day 1 looks at all the Ventsim™ menu options and tools, advanced tips and techniques, pitfalls to avoid, selection of friction factors, shock losses, setting up primary and secondary layers, user-defined views, etc.
- Day 2 is a series of exercises looking at ventilation planning, fan selections, importing DXFs, contaminant (e.g. fire) and smoke simulations, etc. Ventsim Visual™ Standard also includes working in total pressures as well as static pressures, use of variable speed fans, and modelling of self-closing dampers.
- Day 3 (for the Ventsim Visual™ Advanced course only) looks at estimation of mine heat loads and temperature modelling, natural ventilation pressure (NVP), placement and size of cooling plants, recirculation, DPM and advanced cost modelling, etc.

For further information, see the attached examples of *Tables of Contents* (which is updated regularly)

The following table is reproduced from <http://ventsim.com/sales/PriceSheet%20AUD%202010.pdf>. It may be changed at any time by Ventsim™.

ITEM	Ventsim Classic	Ventsim Visual Standard	Ventsim Visual Advanced	Description
Graphics				
Graphics	3D Wireframe	3D Solid or Wireframe	3D Solid or Wireframe	Correctly sized graphics show true dimensions and shapes of airway
Non active display Option	Dark Color / Off	Semi Transparent / Off	Semi Transparent / Off	Simplify display by making some airways transparent - levels can be varied
Hardware Acceleration		✓	✓	Fast, smooth 3D display of any complexity on most modern PCs and laptops
Animated Airflows & Fans		✓	✓	Airflows move in real time through network, operating fans spin
Units	SI Metric/Imperial	SI Metric/Imperial	SI Metric/Imperial	Imperial / Metric can be mixed if required
DXF Import Centrelines	✓	✓	✓	Import centrelines from CAD package for rapid building of Ventsim networks
DXF Import Solids		✓	✓	Import solids including terrain surfaces, orebodies, development etc
Undo function	✓	✓	✓	
Simulation				
Maximum Network Airways	30000	30000	30000	
Simulation Method	Single Pass HC	MultiPass HC	MultiPass HC Mass Flow	Hardy Cross - Multipass simulation improves accuracy and robustness
Airway reversing	manual	automatic	automatic	Airways with no exits or entries are automatically reversed to allow simulation to continue
Compressible Flows			✓	compressible airflows effects at depth are modelled
Coloured Data Display	air type only	✓	✓	Display any data by colour with adjustable legend and sliders
Ventsim Air Data Types	24	34	52	Number of calculated data type that can be shown on screen, colour legend or spreadsheet
Switchable Fans (on/off)		✓	✓	fans can be switched on or off and left in network - fan can be made self closing or open
Variable Speed Fans		✓	✓	Different fan speeds can be easily modified in network
Reversible Fans		✓	✓	fans can be reversed with reduced performance (for emergency simulation)
Thermodynamic				
Heating and Cooling			✓	includes heat or re Fridgeration options in network analysis
Rock Thermal Input			✓	predicts heat and moisture emanated from rock strata
Diesel Equipment			✓	predicts heat and humidity generated by diesel equipment
Natural ventilation	manual	manual	automatic	Uses thermodynamics to simulate natural ventilation effects
Contaminant				
Distribution Prediction	✓	✓	✓	Distributes smoke or other contaminants through network
Sourcing Assistant	✓	✓	✓	Shows spread and possible source location of smoke or other contaminants
Sourcing Concentration		✓	✓	Shows upstream path and concentrations of contaminated (or fresh) airflow
Diesel Particulate Simulation			✓	Utilises diesel engine sources to estimate DPM levels throughout the mine.
Other Features				
Recirculation Detector			✓	Searchs network for paths that recirculate a portion of air
Economic Airway Size Predictor			✓	Automatically graphs airflow and costs through a range of different airway sizes and types
Auto Simulate		✓	✓	Automatically updates and simulates networks while being built or modified
File System	*.SIM (text)	*.SIM *.VSM *.TXT	*.SIM *.VSM *.TXT	Ventsim Visual versions can load V3.9 SIM files and convert to Visual VSM files
Import Data	Text, DXF	Text, DXF, VNETPC	Text, DXF, VNETPC	Ventsim can build networks from CAD or Mine Planning DXF files, or directly import VNETPC