DASSAULT SYSTEMES | The 3DEXPERIENCE® Company

GEOVIA Minex Course Catalog Australia

3DEXPERIENCE®

Contents

Australia

Minex Foundation

Available	Classroom and on-demand
Duration	3 days (Lunch is provided)
Level	Fundamental
Audience	New users from any Exploration or Mining discipline
Description	The Minex Foundation three-day course covers concepts and procedures that will allow the user to perform basic functions in the system, and will serve as a basis for more advanced training. **Note: This training course has been allocated 21 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Customize the Minex graphical interface and icons • Use the basic components of the system for setting up and viewing data • Understand the data types, concepts and file structure of Minex • Create new user data for points, lines and surfaces • Display and interrogate string and borehole data in 3D • Understand the concepts of grids and generate them • Understand the concepts of triangles and generate them • Generate simple volume calculations between surfaces • Create simple plots in plan and section
Prerequisites	Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow

Overview
- What is Minex?
- The Mine Planning Process

Installation and the essentials
- Installing the software and licensing
- The Minex interface
- Using the Minex explorer
- Customizing toolbars and menus
- Accessing online help

Organizing your data
- Recommended project folder configuration
- Using the project manager
- Setting a local origin
- Minex data and file types

Working with triangles and grids
- What are triangles and grids?
- Creating and displaying surfaces as solids
- Viewing surface using dynamic clipping
- Manipulating grids and triangles
- Editing grids and triangles using arithmetic
- Querying elevations
- Grid and triangle volumetrics
- Creating and plotting contours
- Reporting grid and triangle statistics

Graphics window manipulations
- Controlling visibility with the object control panel
- Defining the 3D area
- Manual and dynamic navigation
- Changing color maps
- Saving parameters

Displaying boreholes in 3D
- Overview of the borehole database
- Opening the borehole database and displaying boreholes
- Manipulating borehole plotting with the object control panel

DTM modelling
- Overview of the geometry file
- Types of data stored in the geometry file
- The concept of a string and using string data to create triangles and grids
- Plotting geometry data
- Querying and modifying string properties

Creating string data in 3D
- The concept of local origin
- Importing and exporting geometry data
- Creating strings and points
- Displaying and querying geometry data
- Manipulating data with string functions
- Area functions
- Geometry tools

Creating plans in 2D
- What is a map mount?
- Creating a map mount
- Methods for creating a plan
- Plotting grid and triangles using line and shade contours
- Controlling data using the mount control panel
- Plotting grid value postings and seam outcrops

Creating sections in 2D
- What is a section mount?
- Creating a section mount
- Methods for creating a section plan
- Displaying triangles, grids and seams on a section
- Controlling data using the mount control panel

Plotting and archiving
- Creating and retrieving plot archives
- Spooling plots to a printer
- Graphics capture
- Picture editing

Texture mapping
- Supported file types
- Registering and displaying an image

Minex for Geologists

Available	Classroom and on-demand
Duration	3 days (Lunch is provided)
Level	Intermediate
Audience	Geologists who have successfully completed a Minex Foundation training course
Description	The Minex for Geologists 3 day course is designed to provide users with a good understanding of geology concepts using Minex; and is essential for geologists to perform every-day and more advanced tasks with the use of the software. **Note: This training course has been allocated 21 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Understand seam modelling concepts • Set up a new borehole database • Use the files within the borehole database to manipulate data • Load lithological and geophysical data into the borehole database • Display boreholes in 3D and in plan and section • Correlate and model seam borehole data • Interpolate missing seams across boreholes • Report and export seam interval data • Interpret and model faults • Unfault and refault grids • Build the geological model • Create a coal quality model • Use seam model operations
Prerequisites	Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex Foundation or an introductory Minex course or basic experience and competency in the use of Minex is also required. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Overview • Introduction to Minex borehole database • Overview of borehole database data types/variables • Requirements for setting up a borehole database • Setting local origin Organising your data • Preparing the collar data file • Setting up a new borehole database Working with data • Loading collar data • Validating collar data • Dealing with deviated boreholes • Borehole header data • Definition file setup • Data type and variable setup Borehole database • Displaying boreholes in 3D • Plotting boreholes in plan • Loading sample data into the borehole database • Displaying sample data against boreholes Reporting data • Reporting borehole data • Exporting borehole data • Revising the borehole database • Displaying boreholes in 2D and 3D plots • Seam validation reporting • Plotting borehole sections • Seam summary reporting • Exporting seam intervals Preparing gridded surfaces • Preparing a topo and weathering surfaces • Creating a seam/layer sequence • Validating grids against source data Interpolation • Correlating and modelling borehole seams • Ply splitting Faults • Using seam floor grids to interpret faults • Defining fault strings and displacements • Generating the fault block model • Interpolating missing seams • Generating the fault block model Unfaulting • Unfaulting boreholes • Correlating and modelling unfaulted borehole seams • Exporting the unfaulted seam intervals Building the geological model • Multi-seam/multi-variable gridding • Building the uncut model • Building the cut model Creating a coal quality model • Selecting seam/sample compositing parameters • Statistics of quality attributes • Compute coal quality grids • Calculating distance grids Seam model operations • Computing waste/interburden intervals • Computing seam washout grids • Seam grid statistics • Details resource reporting

Minex For Engineers

Available	Classroom and on-demand
Duration	3 days (Lunch is provided)
Level	Intermediate
Audience	Engineers who have successfully completed a Minex Foundation training course.
Description	The Minex for Engineers three-day course is designed to provide users with a good understanding of engineering concepts using Minex; and is essential for engineers to perform every day and more advanced tasks with the use of the software. **Note: This training course has been allocated 21 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Rationalize the geological model into a mining model • Build a merged model and calculate strip ratio • Create bench grids and a bench list • Generate the reserves database • Update reserves for modelled quality information • Validate database volumes using the detailed resource reporting option • Convert insitu reserves into run of mine reserves • Manipulate the reserves database using SQL's • Display reserves blocks in 3D • Manipulate the reserves database to conduct margin ranking • Report gridded reserves inside various margin categories • Create dump profile surfaces and design rehabilitated surfaces • Set out blast patterns and generate drillers reports
Prerequisites	Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex Foundation or an introductory Minex course or basic experience and competency in the use of Minex is also required. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Overview • Rationalise the geological model • Examine outcrop / subcrop of seams • Calculate the merged model • Create cross sections through merged seams • Identify design constraints Create bench grids • Geotechnical parameters (wall angles and berms) • Identify bench surfaces, bottom seam, bench height • Create bench grids Pit Design • Define the bench list & generate benches • Generate pit shell • Calculate insitu resources • Generate strips and blocks Validating • Block editing • Validating blocks • Displaying pit geometry data Building reserves • Create a reserves database • Defining codes and layers • Add quality variables • Generate insitu reserves • Update quality variables with modeled data Reserves validation • Report reserves • Methods for validating reserves ROM reserve manipulation • Examine layers in the reserves database • Waste and merge layers • Apply losses and dilutions • Edit the database using SQLs Block display and SQL • Display reserve blocks in 3D • Detailed pit / block plotting • Compile and execute strip ratio SQL Reporting and validating • Validate reserves • Report using other methods • Export block / layer polygons Block margin ranking • Calculate margin using SQL • Shade plot margin ranking results • Report gridded reserves inside various margin categories Creating dump surfaces using earthworks • Build dragline dump profiles • Create waste dump surfaces Surface rehabilitation • Create final dump profiles Drill & Blast • Setup blast pattern • Generate drillers reports • Create blast plan

Minex Dump Scheduling

Available	Classroom and on-demand
Duration	1 Day
Course Material	Printed Manual (English)
Level	Intermediate
Audience	Engineers who have successfully completed the Minex Open Pit Scheduling course.
Description	The Minex Dump Scheduling one-day course is designed to provide users with a good understanding of dump scheduling and haulage planning concepts within Minex. This course is essential for engineers to perform long term and medium term planning and scheduling and more advanced tasks within Minex. **Note: This training course has been allocated 7 PD hours by the AusIMM**
Objectives	Upon completion of this course, you will be able to accomplish the following: • Report the existing pit schedule • Report reserves in pit and dump volumes • Create roads connecting pits and dumps • Setting up the dump scheduler scenario manager • Generate sequence files, and manipulating them • Run the dump scheduler and report for existing pit schedules • Display and playback • Create dump and pit schedules together • Handle material classes • Ramp distance generator • Calculate truck cycle times • Report truck cycle times • Compare trucks, roads, truck-shovel combinations
Prerequisites	Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex Foundation course or equivalent or equivalent experience and competency in the use of Minex. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Overview • Report reserve database • Report current schedule and calendar • Replay current schedule • Workflow of dump scheduling and haulage planning Organizing your data • Recommended project folder configuration • Create dump schedule database Scenario Manager • Create scenario file and scenarios • Layout canvas • Sequence generator, dump availability and lag, pit ranking • Creating a new dump schedule with existing pit schedule Dump Scheduling • Schedule run • Schedule play back and reporting • Exporting face position • Creating a new dump schedule with a new pit schedule • Ramp distance generator • Add fleet(equipment), add trucks (from library or manually) • Calculate truck cycle times • Reporting trucks • Haulage selection • Analysing results

Minex Open Pit Scheduling

Available	Classroom and on-demand
Duration	3 Days
Course Material	Printed Manual (English)
Level	Intermediate - Advanced
Audience	Intermediate Minex Users
Description	The Minex Open Pit Scheduling two-day course provides users with a good understanding of engineering scheduling concepts and suits long term or short term planners. **Note: This training course has been allocated 21 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Set up blast and design defaults • Design blast hole collar patterns • Prime and load blast holes • Design the tie-in pattern for firing • Upload the blast design to the blast database • Create a true blast outline using a blast deconstruction cone • Create a blast solid • Produce a blast report
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of the Minex for Engineers course or Minex Pit Design and Reserves training, or equivalent experience and competency in the use of Minex. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Overview • Concepts and objectives of scheduling • Types of scheduling within Minex Preparing for Scheduling • Creating and editing the calendar file • The schedule wizard • Displaying mining blocks in 3D • Defining equipment and production rates Target Scheduling • Nominating targets and time periods • Creating the sequence file and schedule path • Running a target schedule • Schedule playback Reporting and Schedule Results Output • Details schedule report • Residual reserves report • Creating face positions surfaces Detailed Scheduling • Defining scheduling rules • Review of the equipment file and properties • Detailed interactive scheduling • Target monitor setup • Using a date control file • Create auto equipment for mining thin seams Reporting and Scheduling Results Output • Equipment productivity report • Schedule calendar report • Exporting face positions Managing the Schedule Database • Branching schedules • Merging schedules • Deleting schedules

Minex Drill and Blast

Available	Classroom and on-demand
Duration	1 day
Course Material	Printed Manual (English)
Level	Intermediate
Audience	Engineers who have successfully completed a Minex Foundation training course.
Description	The Minex Drill and Blast one-day course is designed to provide users with a good understanding of using the module for designing drilling plans and how to manage and report the outputs. This course is recommended for engineers working on drill and blast design. **Note: This training course has been allocated 7 PD hours by the AusIMM**
Objectives	Upon completion of this course, you will be able to accomplish the following: • Understand the concept of Drill and Blast design • Design a blast for the data provided • Edit the design • Generate reports • Export pattern to GPS
Prerequisites	Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex Foundation or an introductory Minex course or basic experience and competency in the use of Minex is also required. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Defining a Blast Pattern • Set the geometry definition • Specify blast pattern parameters (spacing, burden, pattern, standoff) • Hole parameters (inclination), hole display parameters • Specify surfaces (choose design surface – toe or surface) • Collar surface (grid, triangle or elevation) • Toe surface (grid, triangle, elevation or fixed depth) • Specify blast plotting parameters for display • Blast explorer Designing the Blast • Set the reference line • Set the setout lines • Generate holes • Project Editing/Manipulating Holes • Hole editing • Boundary • Zones • Renumbering/delete/add move and re-project Reporting • Generate burden report, or preview blast influence • Take drillers report or GPS report • Get drill production report

Minex Earth Works

Available	Classroom and on-demand
Duration	1 Day
Course Material	Printed Manual (English)
Level	Fundamental / Intermediate
Audience	Engineers who have successfully completed a Minex Foundation training course.
Description	The Minex Earth Works one-day course is designed to provide users with a good understanding of using the Earth Works and Spoil Reshaping modules for designing dumps, haul roads, spoils or reshaping spoils. This course is recommended for engineers working on dump design, haul roads and spoil reshaping. **Note: This training course has been allocated 7 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Understand the concept of dump, haul road and spoil design • Design haul roads, find cut and fill volumes • Create spoil piles, max spoils and drag spoils • Spoil reshaping – compute and report • Surface rehabilitation
Prerequisites	Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex Foundation or an introductory Minex course or basic experience and competency in the use of Minex is also required. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Dump Design • Create max spoil • Use max spoil for dump design • Create drag spoil Haul Roads • Design haul roads and report Soil Re-Grade • Create spoil re-grade • Report Surface Rehabilitation • Create template strings • Sections • Calculate cut and fill

Minex Open Pit Short Term Planning

Available	Classroom and on-demand
Duration	2 Days
Course Material	Printed Manual (English)
Level	Fundamental / Intermediate
Audience	Engineers who have successfully completed a Minex Foundation training course.
Description	The Minex Open Pit Short Term Mine Planning two-day course is designed to provide users with a good understanding for designing drilling plans and how to manage and report the outputs, creating spoil piles and haul roads. This course is recommended for engineers working on drill and blast design or other short term planning areas. **Note: This training course has been allocated 14 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Understand the concept of drill and blast design • Design a blast for the data provided • Edit the design • Generate reports • Export pattern to GPS • Create haul roads and calculate volumes • Create spoil shapes for spoil piles or dumps • Create spoil rehabilitation plans • Estimate work for spoil reshaping
Prerequisites	Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex Foundation or an introductory Minex course or basic experience and competency in the use of Minex is also required. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Defining a Blast Pattern • Set the geometry definition • Specify blast pattern parameters (spacing, burden, pattern, standoff) • Hole parameters (inclination), hole display parameters • Specify surfaces (choose design surface – toe or surface) • Collar surface (grid, triangle or elevation) • Toe surface (grid, triangle, elevation or fixed depth) • Specify blast plotting parameters for display • Blast explorer Designing the Blast • Set the reference line • Set the set out lines • Generate holes • Project Editing / Manipulating Holes • Hole editing • Boundary • Zones • Renumbering/delete/add move and re-project Reporting • Generate burden report, or preview blast influence • Take drillers report or GPS report • Get drill production report Dump Design • Create max spoil • Use max spoil for dump design • Create drag spoil Haul Roads • Design haul roads & report Spoil Re-Grade • Create spoil re-grade • Report Surface Rehabilitation • Create template strings • Sections • Calculate cut and fill

Minex SQL for Engineers

Available	Classroom and on-demand
Duration	1 Day
Course Material	Printed Manual (English)
Level	Fundamental
Audience	The Minex SQL for Engineers one-day course is course is designed to provide engineers with the fundamental knowledge of SQL macros in Minex.
Description	The Surpac Geology Intermediate two-day course is for geologists who want to improve their skills and concepts within the geology and block modelling modules. The course will provide users with a good understanding of using Surpac. **Note: This training course has been allocated 7 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Report data from borehole database with a defined set of conditions • Calculate the values for new variable from existing variables using any empirical formulae • Thicken or thin seam sections based on conditions • Compute working section from ply models with user defined conditions • Classify the resources as per JORC • Compute ROM models from in situ models for loss, dilution, etc. • Create cost models, price models, and sale value models • Create ROM reserves • Classify reserves as per JORC
Prerequisites	Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex Foundation and Minex for Engineers course or equivalent experience and competency in the use of Minex. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	What is SQL • Introduction to the SQL language • Understanding the language syntax as implemented in Minex • Types of SQL • Interface of SQL - initiation, saving, and execution Syntax (anatomy) of SQL • Macro type • Declaration statements / Assignment statements • Conditional clauses/selection criteria • Executable statements • Input/output statements SQL application with sample database SQL(B32) and variable SQL • The macro showing the status of the variables in the sample database Flags SQL • Flag SQL and its applications in Minex • Flag SQL in borehole plotting • Flag SQL in borehole database seam reporting Seam Pick SQL (B33) • The macro showing status of seam pick SQL • Syntax for delete/update the seams • Creating a macro to compute working section where IB is less than 0.30m Grid SQL • The macro showing status of grid SQL • Example macro execution through seam model operations (menu explanation) • Compile - fill table – run • Creating ROM models from in situ models with examples • Creating cost grids, price grids, and sale value grids • Grids SQL with suffix • Filling blocks in a block model • Assigning values • Inverse distance calculations • Ordinary kriging estimation Reserve DB SQL • The macro showing status of variables for reserve database • Creating ROM reserves from in situ reserves • Classifying reserves as per JORC

Minex Pit Optimization

Available	Classroom and on-demand
Duration	3 Days
Level	Intermediate, Advanced
Audience	Intermediate to advanced Minex users
Description	The Minex Pit Optimization three-day course is designed to provide users with a good understanding of pit optimization concepts and how to manage and report the outputs. Attendees will also develop their skills in refining the cost and revenue models to best suit individual mine operations. This course is recommended for engineers evaluating new or existing mining operations. **Note: This training course has been allocated 21 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Understand the concept of pit optimization • Rationalize the geological model into a mining model • Set up a fixed of variable cost model for mining/processing costs by area/depth • Establish revenue and sale price on a quality variable (e.g. calorific value) • Control optimum pit slopes by seam or zone • Control haulage cost by area and depth • Introduction to SQL for creating cost and price model • Display and present Optimiser results • Report waste and coal quantities for the optimum pit shells • Understand the benefits of margin ranking versus pit optimization
Prerequisites	Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex Foundation or an introductory Minex course or basic experience and competency in the use of Minex. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Overview • Pit optimization theory Geological model validation • Methods for checking the geology model for validity before optimizing Create the merged model • Rationalize the geological model into a mining model • Create merged model Identify optimization parameters • Identifying mining and physical constraints • Establish revenue and sale price on a quality variable (e.g. calorific value) • Setup fixed cost model for mining/processing • Setup variable cost model for mining/processing Pit optimization • Optimizer menu introduction • Run pit Optimiser Reporting • Create report template • Report pit optimizer result Intro to SQL • Set mining costs for layer thickness, depth, location • Set sale value for multi-product mines (e.g. domestic, export) Advanced pit optimization • Using the MNX file • Control optimum pit slopes by zone • Control haulage cost by area and depth • Creating price and cost model using SQL scripts Analyzing results • Using simple methods to choose your ultimate pit • Display and present optimizer results • Report waste and coal quantities for the optimum pit shells Validating results • Analyzing log file • Check strip ratio vs. basic costs • Base limiting grids

Minex Coal Washability

Available	Classroom and on-demand
Duration	1 day
Course Material	Soft Copy Manual (English)
Level	Fundamental
Audience	Intermediate to Advanced Minex users
Description	The Minex Coal Washability one-day course is designed to cover all key concepts and functionality, around the Minex Coal Washability module. **Note: This training course has been allocated 7 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Concepts of coal washability • Creating coal washability database • Loading and edit of floats and sinks of washability data • Report from a washability database • Regularise a washability database • Update borehole database from a washability database • Product, middle and reject grid creation
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex for Geologists course or equivalent or equivalent experience and competency in the use of Minex The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Introduction • Overview of wash data and key deliverables Washability database creation, loading and edit of sample and wash float and sink data • Database creation • Loading and editing of sample data • Loading and editing of wash data • Selecting wash data Reporting coal wash data • Report seam/sample check • Report a composite report • Create basic report • Create float and sink report Regularizing coal wash data • Setting up parameters and wash curve type • Regularise wash data Updating coal wash data to borehole database • Creating prime, middling and reject variables in borehole database • Update database with cutoff and yield control Modelling of coal wash data • At different cut points modelling of wash yield, density etc. Detailed resource report • Run through the ROM and yield resources

Minex Fault Modeling

Available	Classroom and on-demand
Duration	2 Days
Course Material	Printed Manual
Level	Intermediate, Advanced
Audience	Minex Users (Engineers)
Description	The Minex Faulting two-day course will provide geologists with the fundamental knowledge of fault interpretation from seismic sections and contour plans. **Note: This training course has been allocated 14 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Understand discontinuities • Use quick faulting tools for 2D Faulting • Fault interpretation though 2D sections and contour plans • Generation of fault surfaces from strings • Generation of fault strings from surveyed fault surface • Fault block (fault ERA) generation • Generation of fault picks, to cross check in boreholes • Edit fault picks and supplement in faulting • Unfaulting the borehole/geometry data • Validation of faults (sections and plans) • Generate the faults through refaulting • Validation of final model • Resource reports for faulted models
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex for Geologists course or equivalent or equivalent experience and competency in the use of Minex. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Overview • Understanding discontinuities and faulting process and terminology Faulting quick tools /2D faults • 2D faults without throw and vertical faults with throw Fault interpretation • Fault interpretation through 2D sections and contour plans Generation of 3D fault surface and strings • Generating fault surfaces from interpreted strings • Generation of fault strings from surveyed fault surfaces Generation of fault ERA • Generation of fault blocks • Investigation of fault blocks for possible errors Generation of fault picks • Creating borehole – fault intersection database • Validating the fault database and editing if required • Supplementing fault picks for faulting Unfaulting borehole and geometry database • Unfaulting borehole database • Unfaulting geometry data • Validation of data Rapid seam modelling • Run through bore seam modelling for splitting and missing seam interpretation • Multi seam and multi variable gridding Validating unfaulting models • Generation of cross sections • Generation of structural contour plans • Validation of unfaulted model Refaulting • Generation of refaulted grids • Generation of cross sections • Generation of structural contour plans • Validation of final models Detailed resource reporting • Resource generation for faulted blocks

Minex SQL for Geologists

Available	Classroom and on-demand
Duration	1 Day
Course Material	Printed Manual
Level	Intermediate, Advanced
Audience	Minex Users (Geologists)
Description	The Minex SQL for Geologists one-day course is designed to provide geologists with the fundamental knowledge of SQL macros in Minex. **Note: This training course has been allocated 7 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Report data from borehole database with a defined set of conditions • Calculate the values for new variable from existing variables using any empirical formulae • Thicken or thin seam sections based on conditions • Compute working sections from ply models with user defined conditions • Classify the resources as per JORC • Compute ROM models from in situ models for loss, dilution, etc. • Classify reserves as per JORC
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex Foundation and Minex for Geologists course or equivalent experience and competency in the use of Minex. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	What is SQL • Introduction to the SQL language • Understanding the language syntax as implemented in Minex Types of SQL • Interface of SQL - initiation, saving, and execution Syntax (anatomy) of SQL • Macro type • Declaration statements / Assignment statements • Conditional clauses / Selection criteria • Executable statements • Input/output statements SQL application with sample database SQL (B32) • The macro showing the status of the variables in the sample database • Creating a macro that identifies the sample that complain ash > 25 and/or with a calorific value less than 12,000 Btu/Lb • Calculating in situ RD from total moisture using the Preston Sanders equation Borehole SQL variables • Creating variable SQL • Setting the properties for execution • Example macro for computing RD from ash by empirical formulae Flag SQL Flag SQL and its applications in Minex • Flag SQL in borehole plotting / database seam reporting Seam pick SQL (B33) • The macro showing status of seam pick SQL • Syntax for delete/update the seams • Creating a macro to compute working section where IB is less than 0.30m Grid SQL • The macro showing status of grid SQL • Example of macro execution through seam model operations (menu explanation) • Compile - fill table – run • Creating ROM models • JORC grids for classifying the resource • Grids SQL with suffix

Minex Resource Reporting

Available	Classroom and on-demand
Duration	1 Day
Course Material	Printed Manual
Level	Intermediate, Advanced
Audience	Minex Users (Geologists)
Description	The Minex Resource Reporting one-day course is designed to cover all key concepts and functionality for resource reporting using Minex. **Note: This training course has been allocated 7 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Understand the implications of structural models in resource reporting • Understand the implications of quality models in resource reporting • Validate structural models – sections, contour plans and diff plots • Validate quality data – check extents, default values, diff-plots (model vs database), line contour and shade contour plots • In-situ reporting – seam weighted average reports • Detailed resource reporting– setting up grid limits and polygon limits • Classify resources on depth, ash and multiple variables • Set-up report templates • Report in-situ, qualities and ROM and Yield tonnages • Set-up parameters for reuse
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex for Geologists course or equivalent or equivalent experience and competency in the use of Minex. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Overview • Understanding implications of structural models in resource • Understanding quality models in resource Validate models • Validate structure models- diff plots, sections, line contour plots • Validate quality models – diff plots, grid stats vs. borehole database stats • Statistics reports and regression curves Simple in-situ reports • In-situ reports for tonnage and volume • Weighted quality reporting JORC distance grids • Create distance grids for classifying resources (no more polygons) • Option to create JORC polygons Detailed resource reporting • Set up defaults and weighted models • Set up quality and surface limits • Class reports, bench reports Template definition • Defining resource template- rgt for reuse • Variables, filers, keys, global summaries and groups Reporting • Setting up parameter files • Report to CSV/text

Minex Coal Quality Modeling

Available	Classroom and on-demand
Duration	2 Days
Course Material	Printed Manual
Level	Intermediate, Advanced
Audience	Participants who have successfully completed a Minex Foundation training course.
Description	Coal Quality Modeling 2 day training course is designed to provide users with a good understanding of Coal Quality Modeling in Minex. It is essential to understand various composite and weightage options (ply / seams) to generate accurate quality models. **Note: This training course has been allocated 14 PD hours by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Understanding Coal Quality Modelling in Minex • Create data types and variable for proximate, ultimate and mineralogical quality data • Understand compositing and its application in Minex database • Mass, density and yield compositing • Loading coal quality data • Data Validation- Sample reports, quality validation reports, statistics, histograms and cross correlation plots • Analysing different gridding methods growth tech, inverse distance (standard, modified standard and structural) • Validating quality models - diff plots, line contour and shade contour plots • Reporting weighted quality and tonnages- Insitu and detailed resource estimation
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of Minex Foundation or an introductory Minex course or basic experience and competency in the use of Minex is also required. The Minex menu structure and graphical user interface (GUI) are similar to most Windows-based packages and therefore a basic knowledge of the Windows operating system and environment is necessary.

Course Structure Flow	Overview • Understanding Coal Quality data base • Overview of Quality data types/variables • Understanding Proximate, ultimate and mineralogical data Organizing Data • Preparing the basic files for various types of quality data • Setting up a new borehole database with quality data types, variables Quality / Borehole Database Loading Quality data • Validating Quality data • Updating Quality data • Data validation exercises Reporting Data • Reporting quality sample data Seam Quality Validation • Statistics • Histograms • Cross correlation - regression equation • Selecting optimal compositing setting - tolerance and % sample for quality database Different Quality Modelling Methods • Growth tech modelling • Inverse distance – standard, modified standard and structural Validate Quality models • Quality model statistics vs database • Difference plots for quality models vs quality database Reporting and exporting data Reporting tonnage and weighted quality • Reporting weighted quality - Insitu resource reporting- • Quality reporting in Detailed resource reporting • Exporting quality data


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