DASSAULT SYSTEMES | The 3DEXPERIENCE® Company

GEOVIA Surpac Course Catalog Australia

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Contents

Surpac Foundation	
Course Code	N/A
Available	Classroom and on-demand
Duration	2 days
Course Material	Printed Manual (English)
Level	Fundamental
Audience	New users from any Exploration or Mining discipline
Description	Whether you are just starting out with Surpac, or have not used it in a while and want to refresh your knowledge, this introductory training course will give you the skills you need to perform common functions in the software and use it productively. It covers concepts and procedures that will allow the user to perform basic functions in the software, and will serve as a basis for more advanced training. **This course is awarded 14 PD Points by the AusIMM**
Objectives	Upon completion of this course, you will be able to accomplish the following: • Install and license Surpac • Customize Surpac's user interface • Use basic components of the software for setting up and viewing data • Understand data types, concepts and file structure • Create new data for points, lines and surfaces • Understand the concepts of surfaces and generate them • Generate simple volume calculations between surfaces • Display and create basic solids • Create simple plots
Prerequisites	Before taking this course, you require the following: • Knowledge of Windows® 2000, XP, Vista® or Windows 7 Operating System The Surpac 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 • Software installation and licensing • Surpac concepts (and data types) • The Surpac interface (graphics) • Forms and help Organizing your data • Recommended project folder configuration • Managing data in layers • Saving your project settings into profiles • Setting up customized icons and shortcuts Working with data • String, segment and point information • String concepts and file structure • Object properties • Using the selection and orbiting tool • Displaying and editing your data • Styles for strings Create menu • Creating new points and gradients • Basic digitizing techniques • Creating a grid • Breaklines and file preparation • Normalizing the data • Creating DTMs • Intersection • Contouring • Extracting sections under a surface • Draping • Reporting volumes • Cut and fill • Cutting planes • Viewing data on planes File tools menu • String summary/change string directions • String maths • Applying a boundary string • Classifying strings • Polygon intersections Surfaces • DTM concepts • Breaklines and file preparation • Normalizing the data • Validating DTM modelling • Creating and sectioning DTMs • Generating volumes • Contouring • DTM trimming • Color DTM functions • Draping (strings and imaged) Solids • Basic solid creation and viewing Plotting • Basic autoplot • Plot sheet setup Advanced Tools • Recording a macro Presentation Tools • Image draping • Animation / fly through • Embedding in web pages

Surpac Drill & Blast	
Course Code	N/A
Available	Classroom and on-demand
Duration	1 Day
Course Material	Printed Manual (English)
Level	Intermediate, Advanced
Audience	Open pit engineers and experienced users of Surpac with an interest to follow a blast design from start to finish.
Description	The Surpac Drill and Blast one-day course is not intended to be exhaustive in scope; however it will demonstrate the workflow required to achieve a result. **This course is awarded 7 PD Points 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 Surpac Foundation or an introductory Surpac course or basic experience and competency in the use of Surpac is also required. The Surpac 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	Getting started • Setting the work directory • Opening a blast profile Modifying blast design defaults • Drilling and charging defaults • Rock classifications • Firing classifications • Rock mass classification (RMC) polygons Designing a blast pattern • Design a blast pattern from polygons • Clip to top bench • Save to string and blast database • Use more than one burden and spacing Load and tie in • Charge holes • Diagonal, v-pattern and customised firing patterns • Create a blast boundary • Create a blast solid Blast report • Generate a blast summary report Pre-split • Create pre-split holes Blast database • Tables and fields • Creating a new database • Upgrading a database

Surpac Surface Engineering	
Course Code	N/A
Available	Classroom and on-demand
Duration	2 days
Course Material	Printed Manual (English)
Level	Intermediate
Audience	Mining and planning engineers who have successfully completed a Surpac Foundation training course.
Description	The Surpac Surface Engineering two-day course covers advanced topics to provide the user with knowledge of all the tools available in conducting pit design. **This course is awarded 14 PD Points by the AusIMM**
Objectives	Upon completion of this course, you will be able to accomplish the following: • Style set-up • Using GEOVIA Whittle shells for design the pits • Block modelling basics and reporting • Pit design fundamentals • Plotting
Prerequisites	Before taking this course, you require the following: • Knowledge of Windows® 2000, XP, Vista® or Windows 7 Operating System • Completion of Surpac Foundation or an introductory Surpac course or basic experience and competency in the use of Surpac is also required. The Surpac 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 • Software installation • User interface customization Block modelling • Block model concepts • Block model tools • Block model reporting Open pit design overview • Concepts • Basic design tools Open pit design • Setting up ramps • All cut ramps • Multi bench design • Slope design options • Designing a switchback • Creating a DTM • DTM tools • Volume reports Waste dump design • Designing a waste dump • Plotting Autoplot Entities • Plotting sheet set up

Surpac for Surveyors	
Course Code	N/A
Available	Classroom and on-demand
Duration	3 Days
Course Material	Printed Manual (English)
Level	Fundamental
Audience	Surveyors who are either new to Surpac or would like to refresh their skills.
Description	This course covers concepts and procedures that will allow the user to perform basic functions in the software, and will serve as a basis for good survey processes in Surpac. **This course is awarded 21 PD Points by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Install and license Surpac • Customize Surpac's user interface • Use basic components of the software for setting up and viewing data • Understand the data types and concepts • Learn how to create and display a survey database • Create new data for points, lines and surfaces • Create and validate DTMs and solids • Generate simple volume calculations between surfaces and within solids • Create simple plots • Use mesh tools for simplifying and analysis
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. The Surpac 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 • Software installation and licensing • Surpac concepts (and data types) • The Surpac interface • Forms and help Organizing your data • Recommended project folder configuration • Managing data in layers • Saving your project settings into profiles Working with dataString, segment and point information • String concepts and file structure • Object properties • Using the selection and orbiting tool • Displaying your data • Editing data Styles • Creating your own styles for strings and points • DTMs and 3DMs Create menu • Creating new points and gradients • Basic digitizing techniques • Creating a grid Maths functions • Applying expressions to data Surfaces • DTM concepts • Breaklines and file preparation • Normalizing the data • Creating DTM's • Intersection • Contouring • Extracting sections under a surface • Draping • Reporting volumes • Cut and fill • Simplifying surfaces and analysis Solids modelling • Use the different methods to create a solid • Validate solids • Edit solids Sections and planes • Utilizing planes with viewports • Cutting planes • Viewing data on planes File tools menu • String summary and directions • Applying a boundary • 2D transformation Survey database • Create a database • Importing text files • Displaying database Plotting • Autoplot • Plot sheet setup • Entities • Creating maps Advanced tools • Recording a macro • Block models for volume checks

Surpac Geology Foundation

Course Code	N/A
Available	Classroom and on-demand
Duration	2 Days
Course Material	Printed Manual (English)
Level	Fundamental
Audience	New users from any exploration or mining discipline.
Description	Whether you are just starting out with Surpac, or have not used it in a while and want to refresh your knowledge, this introductory training course will give you the skills you need to perform common functions in the software and use it productively. It covers concepts and procedures that will allow the user to perform basic functions in the software, and will serve as a basis for more advanced training. **This course is awarded 14 PD Points by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Install and license Surpac • Customize Surpac's user interface • Use basic components of the software for setting up and viewing data • Understand data types, concepts and file structure • Create new data for points, lines and surfaces • Understand the concepts of surfaces and generate them • Generate simple volume calculations between surfaces • Display and create basic solids • Create simple plots
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. The Surpac 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 • Software installation and licensing • Surpac concepts (and data types) • The Surpac interface (graphics) • Forms and help Organizing your data • Recommended project folder configuration • Managing data in layers • Saving your project settings into profiles • Setting up customized icons and shortcuts Working with data • String, segment and point information • String concepts and file structure • Object properties • Using the selection and orbiting tool • Displaying and editing your data • Styles for strings • Importing files functions Create menu • Creating new points and gradients • Basic digitizing techniques • Breaklines and file preparation • Normalizing the data • Viewing data on planes File tools menu • String summary/change string directions • String maths • Classifying strings
	SurfacesDTM concepts • Breaklines and file preparation • Validating DTM modeling • Creating and sectioning DTMs • Generating volumes • Contouring • DTM trimming • Color DTM functions • Reporting volumes between DTMs Geological database • Database concept • Importing data • Mapping the database Database validation • Database audit • Database reporting QA/QC tools • Extracting data • Precision plots • R-chart plots Displaying drillholes • Creating styles for drillholes • Different methods of displaying drillholes • Drillhole manipulation • Drillhole sectioning Plotting • Basic autoplot • Plot sheet setup

Surpac Geology Intermediate	
Course Code	N/A
Available	Classroom and on-demand
Duration	2 Days
Course Material	Printed Manual (English)
Level	Intermediate
Audience	Geologists who have successfully completed a Surpac Foundation training course.
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. **This course is awarded 14 PD Points by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Understand the geology data types and concepts • Domaining and drillhole flagging • Create different types of drillhole and bench composites • Basic statistics and geostatistics • Perform grade control calculations from blast polygons • Basic solid modelling and manipulation • Sectional interpretation • Basic resource estimation • Basic block model validation and reporting • File plotting for printing geological maps
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. The Surpac 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	Geological interpretation • Domaining definition Solid modelling • Creating different solids using various functions • Bifurcation • Volume calculations • Solid tools and manipulation Flagging intervals • Coding and flagging concepts • Drillhole/surface intersection flagging Compositing • Concepts • Downhole compositing • Advanced grade compositing • Graphical compositing Data analysis • Statistical analysis • Dealing with skewed populations • Verifying domains Block model set-up • Block modelling concepts • Creating a block model • Creating attributes • Creating/applying constraints Filling blocks in a block model • Assigning values • Inverse distance calculations • Ordinary kriging estimation Geological mapping • Digitizing geological polygons • Classifying DTM • DTM display by geology Importing external data • Import/export tools File plotting • Overview • Plot entities • Create plot map • Look-up file properties

Surpac Geotechnical Engineering	
Course Code	N/A
Available	Classroom and on-demand
Duration	2 Days
Course Material	Printed Manual (English)
Level	Intermediate, Advanced
Audience	Geotechnical engineers and all other mining professionals who are involved in this area of work.
Description	This course covers concepts and procedures that will allow the user to perform the required functions in the system, and will serve as a basis for more advanced training. **This course is awarded 14 PD Points by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Use display tools to color the pit slope angle by range • Create section from DTM • Model and validate solids • Drape image over DTM • Create plotting with raster data • Understand simple design tools • Understand the concept of Mining Rock Mass model (MRM model) • Composite within a domain • Validate domain using basic statistics tools • Insert data into block model • Validate a MRM model • Use MRM model in your daily tasks
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of the Surpac Geology Foundation and Surpac Geology Intermediate courses, or equivalent experience and competency in the use of Surpac The Surpac 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	DTM surfaces applications • Pit slope inspection • Create section from DTM • Color DTM by domain 3D mapping • Section of 3DM • Drape image over DTM • Solid concepts and creation • Solid validation and solid repair tools Plotting • Plot as raster from autoplot Simple design tools • Horizontal drainage holes • Simple dam design tools • Simple pit design tools Geotechnical database • Translation table • Calculated filed Mining Rock Mass model (MRM model) • Concept • Data collection / Data validation • Model construction • Block model concept and creation • Block model attributes • Block model constraints • Fill block model • Block model validation/ Block model display • Color block model by attribute • Block model section • Applications in open pit and underground mines

Surpac Workflow Automation	
Course Code	N/A
Available	Classroom and on-demand
Duration	2 Days
Course Material	Printed Manual (English)
Level	Fundamental, Intermediate
Audience	Users from any exploration or mining discipline.
Description	The Surpac Workflow Automation two-day course is designed to allow participants to gain the competence to modify recorded scripts by adding user forms, variables and control logic to customize and automate daily tasks performed within Surpac. **This course is awarded 14 PD Points by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Record TCL Macros to accomplish a specific goal • Insert user forms and control logic into recorded macros • Use various TCL commands to achieve goal • Modify and debug existing site macros • Confidently explore further TCL/SCL commands
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. The Surpac 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	Logicals, command aliases and hotkeys • Purpose and definition of Surpac logical • Definition of command aliases to run commands and macros • How to create hotkeys that run commands and macros Creating your own menus and toolbars • Brief introduction to Surpac profiles • Creating menu bars and menu items • Defining toolbars and buttons Recording tasks in a TCL script • Basic macro structure • The different types of Surpac functions • Using the _action switch Some required TCL basics to get working • TCL command syntax • Creating and accessing TCL variables • Quotes, braces and square brackets Creating user forms for your scripts Introduction to GUIDO forms • Using fields and combo boxes for data collection • Using checkboxes and radio buttons • Using file browser fields to select files • Passing form data in variables back to Surpac functions Automating a recorded script • An exercise to automate a string maths operation • Applies current course knowledge A better way to select points in graphics • Using the SclSelectPoint command Passing coordinate data into graphics functions Useful TCL commands • Working with numbers and performing calculations • Working with text strings (i.e. dfields) • Working with files on disk Basic flow control in TCL • Making decisions in scripts using the if command • Repeating many commands using the while loop • Repeating many commands using the for loop Manipulating Surpac ranges with SCL • Using the SCL range commands • Implementation of a basic range processing template Macro development • An application development exercise that will apply all course knowledge to achieve a set goal. A choice of two tasks is provided. • Mine grid conversation script or Geology database sectional plots File I/O – reading and writing text files • Commands to read and write text files Macro to create a CSV file • Macro to read a message log

Surpac Resource Estimation	
Course Code	N/A
Available	Classroom and on-demand
Duration	5 Days
Course Material	Printed Manual (English)
Level	Intermediate, Advanced
Audience	Geologists and Engineers (or other mining professionals) involved in resource estimation.
Description	The Surpac Resource Estimation is a five-day course. Please note day one is a Surpac Refresher course (optional), and Resource Estimation is held over the remaining four days. **This course is awarded 35 PD Points by the AusIMM**
Objectives	At the completion of the course, you will have been exposed to the following topics and concepts: • Understand the Surpac interface • Understand strings and its manipulations • Knowledge on geological databases in Surpac • Knowledge on mapping and importing geological data • Knowledge on displaying drillholes and sectioning • Knowledge on creating simple solid wireframes • Understand block modelling concepts and creation • Knowledge on creating attributes and constraints • Understand reporting an estimated block model • Knowledge on simple TCL macro recording and playback • Resource Estimation • Understand the importance of data integrity • Understand sample population analysis • Understand domaining and geological interpretation • Understand the role of descriptive statistics • Knowledge of variogram analysis and maps • Understand the use of EZ Kriging software tool • Knowledge of inverse distance estimation technique for block models • Knowledge of ordinary kriging estimation technique for block models • Knowledge on resource reporting and classification methods • Basic understanding of MIK and simulation models • If a desired Expected Outcome is not listed above, please contact us to learn more about what you will learn or how we can tailor training for your needs.
Prerequisites	Before taking this course, you require the following: • Knowledge of: Microsoft® Windows®; file management; ASCII files and Microsoft Excel®. • Completion of the Surpac Geology Foundation and Surpac Geology Intermediate courses, or equivalent experience and competency in the use of Surpac

	The Surpac 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	Surpac Basics • Startup folder • GUI • Basic File types • Layers • Basic Functions Geological Database • Database structure • Displaying Data • Creating Composites Solid Modelling • Creating a simple solid • Validating a solid Block Modelling • Creating a block model • Adding attributes • Creating constraints • Reporting tonnes and grade Marcos • Recording • Editing • Playback


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