Civil 3D Advanced 3-4 Day** Training Course

Overview
AutoCAD Civil 3D Advanced introduces advanced techniques and teaches you to be proficient in your use of the AutoCAD Civil 3D Software.

The primary objective is for students to become proficient in:
- Interchange Design
- Storm water and Sewer Design
- Platform Grading and Pond Design
- Customization of Civil 3D

Prerequisites
- It is recommended that delegates are Microsoft Windows proficient.
- Students who attend this course must have been on AutoCAD Civil 3D Essentials course, have worked with Civil 3D for at least 6 months.

Software
- Autodesk Civil 3D

What’s Included?
- Course Notes & Stationery*
- Computer and software for the duration of course*
- Coffee, Tea & Delicious Lunch*
- WiFi Access*
- Autodesk Certified Instructor
- Internationally recognized Autodesk Authorized Training Certificate

* Pertains to in-class training only
** In-class training typically occurs over a 3-4 day period, customised training may differ

Course Content

SESSION 1 - THE BASICS
- The Interface
- Toolspace
- Panorama
- Contextual Ribbon Tab
- Civil 3D Templates
- Starting New Projects
- Importing Styles
- Command Settings
- Creating Lines
- COGO Line Commands
- Direction-Based Line Commands
- Re-Creating a Deed Using Line Tools
- Creating Curves
- Standard Curves
- Best-Fit Entities
- Attaching Multiple Entities
- Adding Line and Curve Labels
- Using Transparent Commands
- Standard Transparent Commands
- Matching Transparent Commands
SESSION 2 - SURVEY
- Setting Up the Databases
- Survey Database Defaults
- The Equipment Database
- The Figure Prefix Database
- The Linework Code Set Database
- Configuring Description Keys for Point Import
- Creating a Description Key Set
- Creating Description Keys
- Activating a Description Key Set
- Understanding the Survey Database
- Working with Survey Networks
- Other Methods of Manipulating Survey Data
- Other Survey Features
- The Astronomic Direction Calculator
- The Geodetic Calculator
- The Mapcheck Report
- The Coordinate Geometry Editor
- Using Inquiry Commands

SESSION 3 - POINTS
- Anatomy of a Point
- COGO Points vs. Survey Points
- Creating Basic Points
- Point Settings
- Importing Points from a Text File
- Converting Points from Non-Civil 3D Sources
- A Closer Look at the Create Points Toolbar
- Basic Point Editing
- Graphic Point Edits
- Panorama and Prospector Point Edits
- Point Groups: Don’t Skip This Section!
- Changing Point Elevations
- Point Tables
- User-Defined Properties
- The Bottom Line

SESSION 4 - SURFACES
- Understanding Surface Basics
- Creating Surfaces
- Creating a Surface with Point Groups
- Adding Breaklines & Boundaries
- Additional Surface Creation Methods
- Surface from LandXML & DEM Files
- Surface from GIS Data & Polylines
- Refining and Editing Surfaces
- Surface Properties
- Manual Surface Edits
- Surface Analysis
- Elevation Banding
- Slopes and Slope Arrows
- Visibility Checker
- Comparing Surfaces
- TIN Volume Surface
- Labeling the Surface
- Contour Labeling

SESSION 4 - SURFACES (continued)
- Additional Surface Label Types
- Point Cloud Surfaces
- Importing a Point Cloud
- Working with Point Clouds
- Creating a Point Cloud Surface

SESSION 5 - PARCELS
- Introduction to Sites
- Think Outside of the Lot
- Creating a New Site
- Creating a Boundary Parcel
- Using Parcel Creation Tools
- Creating a Right-of-Way Parcel
- Adding a Cul-de-Sac Parcel
- Creating Subdivision Lot Parcels - Precise Sizing Tools
- Attached Parcel Segments
- Parcel Sizing Settings
- Parcel Sizing Tools
- Editing Parcels by Deleting Parcel Segments
- Best Practices for Parcel Creation
- Forming Parcels from Segments
- Parcels Reacting to Site Objects
- Constructing Parcel Segments - Appropriate Vertices
- Labeling Parcel Areas
- Labeling Parcel Segments
- Labeling Multiple-Parcel Segments
- Labeling Spanning Segments
- Adding Curve Tags to Prepare for Table Creation
- Creating a Table for Parcel Segments

SESSION 6 - ALIGNMENTS
- Alignment Concepts
- Alignments and Sites
- Alignment Entities
- Creating an Alignment
- Creating from a Line, Arc, or Polyline
- Creating by Layout
- Best-Fit Alignments
- Reverse and Compound Curve Creation
- Creating with Design Constraints and Check Sets
- Editing Alignment Geometry
- Grip Editing
- Tabular Design
- Component-Level Editing
- Understanding Alignment Constraints
- Changing Alignment Components
- Alignments as Objects
- Alignment Properties
- The Right Station
- Assigning Design Speeds
- Labeling Alignments
- Alignment Tables
SESSION 7 - PROFILES AND PROFILE VIEWS
- The Elevation Element
- Surface Sampling
- Layout Profiles
- The Best-Fit Profile
- Creating a Profile from a File
- Editing Profiles
- Grip-Editing Profiles
- Editing Profiles Using Profile Layout Parameters
- Editing Profiles Using Profile Grid View
- Component-Level Editing
- Other Profile Edits
- Profile Views
- Creating Profile Views during Sampling
- Creating Profile Views Manually
- Splitting Views
- Editing Profile Views
- Profile View Properties & Labeling Styles
- Applying Labels
- Using Profile Label Sets
- Profile Utilities
- Superimposing Profiles
- Projecting Objects in Profile View
- Creating a Quick Profile

SESSION 8 - ASSEMBLIES AND SUBASSEMBLIES
- Subassemblies
- The Tool Palettes
- The Corridor Modeling Catalogs
- Adding Subassemblies to a Tool Palette
- Building Assemblies
- Creating a Typical Road Assembly
- Subassembly Components
- Jumping into Help
- Commonly Used Subassemblies
- Editing an Assembly
- Creating Assemblies for Non-road Uses
- Specialized Subassemblies
- Using Generic Links
- Daylighting with Generic Links
- Working with Daylight Subassemblies
- Advanced Assemblies
- Offset Assemblies
- Marked Points Used with Partner Subassemblies
- Organizing Your Assemblies
- Storing a Customized Subassembly on a Tool Palette
- Storing a Completed Assembly on a Tool Palette

SESSION 9 - BASIC CORRIDORS
- Understanding Corridors
- Recognizing Corridor Components
- Working with Corridor Feature Lines
- Understanding Targets
- Using Target Alignments and Profiles
- Editing Sections
- Creating a Corridor Surface
- The Corridor Surface
- Corridor Surface Creation Fundamentals
- Adding a Surface Boundary
- Performing a Volume Calculation
- Building Nonroad Corridors

SESSION 10 CORRIDORS INTERSECTIONS & ROUNDABOUTS
- Using Multiregion Baselines
- Modeling a Cul-de-Sac
- Using Multiple Baselines
- Establishing EOP Design Profiles
- Putting the Pieces Together
- Troubleshooting Your Cul-de-Sac
- Moving Up to Intersections
- Using the Intersection Wizard
- Creating Intersections Manually
- Troubleshooting Your Intersection
- Finishing Off Your Corridor
- Using an Assembly Offset
- Understanding Corridor Utilities
- Using Corridor Utilities in Practice
- Using a Feature Line as a Width and Elevation Target
- Tackling Roundabouts
- Drainage First
- Roundabout Alignments
- Center Design
- Profiles for All
- Tie It All Together
- Finishing Touches

SESSION 11 - SUPERELEVATION
- Preparing for Supererelevation
- Critical Stations
- Design Criteria Files
- Ready Your Alignment
- Super Assemblies
- Applying Supererelevation to the Design
- Start with the Alignment
- Transition Station Overlap
- Calculating Cants for Rail
- Preparing for Cants
- Creating a Rail Assembly
- Applying Cant to the Alignment
- Supererelevation and Cant Views
- Using a Supererelevation View to Edit Data

SESSION 12 - CROSS SECTIONS AND MASS HAUL
- Section Workflow
- Comparing Sample Lines and Frequency Lines
- Creating Sample Lines
- Editing the Swath Width of a Sample Line Group
- Creating Section Views
- Creating a Single-Section View
- Creating Multiple Section Views
- Section Views and Annotation Scale
- Calculating and Reporting Volumes
- Computing Materials
- Creating a Volume Table in the Drawing
- Adding Soil Factors to a Materials List
- Generating a Volume Report
- Adding Section View Final Touches
- Adding Data with Sample More Sources
- Adding Cross-Section Labels
- Using Mass Haul Diagrams
- Taking a Closer Look at the Mass Haul Diagram
- Creating a Mass Haul Diagram
- Editing a Mass Haul Diagram
SESSION 13 - PIPE NETWORKS
• Setting Up a Pipe Network
• Understanding Parts List—Waste Water Systems
• Planning a Typical Pipe Network - Using Part Rules
• Putting Your Parts List Together
• Creating a Waste Water Network
• Establishing Pipe Network Parameters
• Using the Network Layout Creation Tools
• Storm Drainage Pipe Network from a Feature Line
• Editing a Pipe Network
• Changing Flow Direction
• Editing Your Network in Plan View
• Using the Pipe Network Vista Effectively
• Editing Using the Pipe Networks Contextual Tab
• Creating an Alignment from Network Parts
• Drawing Parts in Profile View
• Adding Pipe Network Labels
• Labeled Pipe Network Profile with Crossings
• Using Pipe and Structure Labels
• Creating an Interference Check & Pipe Tables
• Exploring the Table Creation Dialog
• The Table Panel Tools
• Setting and Using a Pressure Pipes Network
• Pressure Network Parts List
• Creating a Pressure Network
• Using Design Checks
• Understanding Part Builder
• Part Builder Orientation
• Understanding the Organization of Part Builder
• Exploring Part Families
• Adding a Part Size Using Part Builder
• Sharing a Custom Part
• Adding an Arch Pipe to Your Part Catalog

SESSION 14 - GRADING
• Working with Grading Feature Lines
• Accessing Grading Feature-Line Tools
• Creating Grading Feature Lines
• Editing Feature Line Information
• Labeling Feature Lines
• Grading Objects
• Creating Gradings
• Using Gradings for Interim Surfaces
• Finishing Touches
• The Bottom Line

SESSION 15 - PLAN PRODUCTION
• Preparing for Plan Sets
• Prerequisite Components
• Using View Frames and Match Lines
• The Create View Frames Wizard
• Creating View Frames
• Editing View Frames and Match Lines
• Creating Plan and Profile Sheets
• The Create Sheets Wizard
• Managing Sheets
• Creating Section Sheets Multiple Section Views
• Drawing Templates

SESSION 16 - ADVANCED WORKFLOWS
• Data Shortcuts
• Getting Started
• Setting a Working Folder and Data Shortcut Folder
• Creating Data Shortcuts
• Creating a Data Reference
• Updating References
• Sharing Data with a Non–Civil 3D World
• Delivering DWG Formats
• Using LandXML

SESSION 17 - QUANTITY TAKEOFF
• Employing Pay Item Files
• Pay Item Favorites
• Searching for Pay Items
• Keeping Tabs on the Model
• AutoCAD Objects as Pay Items
• Pricing Your Corridor
• Pipes and Structures as Pay Items
• Highlighting Pay Items
• Inventorying Your Pay Items

SESSION 18 - LABEL STYLES
• Label Styles
• General Labels
• Frequently Seen Tabs
• General Note Labels
• Point Label Styles
• Line, Curve & Single Segment Labels
• Spanning Segment Labels
• Curve Labels
• Pipe and Structure Labels
• Structure Labels
• Profile and Alignment Labels
• Label Sets
• Alignment Labels
• Advanced Style Types
• Table Styles
• Code Set Styles

SESSION 19 - OBJECT STYLES
• Getting Started with Object Styles
• Frequently Seen Tabs
• General Settings
• Point and Marker Object Styles
• Creating Linear Object Styles
• Alignment Styles
• Parcel Styles
• Feature Line Styles
• Creating Surface Styles
• Contour Styles
• Triangles and Points Surface Styles
• Analysis Styles
• Creating Pipe and Structure Styles
• Pipe Styles
• Structure Styles
• Creating Profile View Styles
• Profile View Bands
• Creating Section View Styles
• Group Plot Styles
**Course Registration Form**

Please complete, sign and return together with proof of payment to mgfxsales@mgfx.co.za or fax 086 694 9404

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**Terms & Conditions:**

1. Above Pricing Excludes VAT.
2. Students are to be at the training venue by 08h00 in preparation for a 08h30 start time.
3. Bookings can only be considered confirmation on receipt of payment.
4. Bookings may be changed up to three weeks in advance of the course. A fee of 20% will be levied to cover charges.
5. For full day courses, we will supply you with the relevant training material. A desktop computer to use for the training (where applicable) tea/coffee and a full lunch for full day InClass training hosted at the training center only.
6. Catering is not included for OnSite training and laptop is available for hire at an additional cost if required.
7. Cancellation or rescheduling requests must be in writing and reach us at least 5 (five) working days prior to the course commencement date.
8. Full course fees may be retained for no shows or requests within 5 working days prior to commencement.
9. Although we go to great lengths to ensure that all training proceeds as scheduled, we reserve the right to cancel or postpone dates if we require to do so and undertake to inform clients in writing and telephonically of these changes.
10. We suggest clients wait until a week prior to course commencement that a course has been confirmed to go ahead as scheduled before booking flight and accommodation. We are NOT responsible for cost associated with cancellation of classes such as flight and accommodation for clients.
11. Full training fees will apply if the above condition is not complied with.

**Signed & Accepted**

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Micrographics SA (Pty) Ltd

ABSA Newton Park | Branch: 632005 | Account: 4093 847 926 | Reference: invoice number