

Exploring AutoCAD Map 3D, 2012

CADCIM Technologies

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*To teachers, who make it possible to disseminate knowledge
to enlighten the young and curious minds
of our future generations*

*To students, who are dedicated to learning new technologies
and making the world a better place to live in*

SPECIAL RECOGNITION

*A special thanks to Mr. Denis Cadu and the ADN team of Autodesk Inc.
for their valuable support and professional guidance to
procure the software for writing this textbook*

THANKS

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To employees of CADCIM Technologies for their valuable help

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Preface

AutoCAD Map 3D 2012

AutoCAD Map 3D 2012, developed by Autodesk Inc., is one of most efficient mapping software that is used mainly for designing infrastructure, planning layout, performing geospatial analysis, managing GIS datasets, and topobase database. Built on the latest release of AutoCAD software, the latest tools in AutoCAD Map 3D help you create, edit, analyze, and interpret various kinds of datasets effectively.

The tools in this mapping software such as Connect, Object Classification, Style Editor, Map Book, Point Cloud Manager, and Surface Manager help the users perform complex geospatial analysis, create and publish maps, create layouts, and much more. Using the FDO Data Access Technology, you can connect to various databases such as Web Mapping Server and Spatial Database with ease. Furthermore, you can use various object creation and raster data analysis tools to create customized datasets based on your own project specifications; perform various operations on the elevation, survey, topobase, and LiDAR data; create contours and exchange information with various agencies and contractors in both CAD and GIS data easily, thereby saving your time and effort considerably.

Exploring AutoCAD Map 3D, 2012 is a descriptive textbook written to cater the needs of the students and the professionals who want to create, edit, and analyze the feature and drawing data. The chapters in this textbook are structured in a pedagogical sequence, which makes the learning process very simple and effective for both the novice as well as the advanced users of AutoCAD Map 3D. Complex geospatial processes have been illustrated through easy-to-understand flow diagrams. A wide range of processes such as data management, creating the feature and drawing data, COGO routines, object classification, styling the vector and raster data, using FDO-Connections, Point Cloud analysis, creating 3D surfaces, creating contours, creating a Map Book have been covered in this textbook that will enable the readers to take full advantage of this cutting-edge technology. The current edition introduces users to the concepts and software modules used for analyzing industry model data or topobase database.

The highlight of this textbook is that each concept introduced in it is explained with the help of suitable examples to facilitate better understanding. The simple and lucid language used in this textbook makes it a ready reference for both the beginners and the intermediate users.

- **Tutorial Approach**

The author has adopted the tutorial point-of-view and learn-by-doing theme throughout the textbook. This approach guides the users through the process of performing simulation of analysis problem. At the end of each chapter, tutorials are provided to practice the

concepts learned in the chapter. Also, two chapters that are entirely based on tutorials have been added in this textbook to enable the users to understand and solve various analyses problems in an easy and effective manner.

- **Real-World Projects as Tutorials**

The author has used about 30 real-world GIS projects as tutorials in this book. This will enable the readers to relate the tutorials to the real-world projects in GIS industry. In addition, there are about 25 exercises based on the real-world GIS projects.

- **Tips and Notes**

The additional information related to various topics is provided to the users in the form of tips and notes.

- **Learning Objectives**

The first page of every chapter summarizes the topics that are covered in that chapter.

- **Self-Evaluation Test, Review Questions, and Exercises**

Every chapter ends with a Self-Evaluation test so that the users can assess their knowledge of the chapter. The answers to the Self-Evaluation Test are given at the end of the chapter. Also, the Review Questions and Exercises are given at the end of each chapter and can be used by Instructors as test questions and exercises.

- **Heavily Illustrated Text**

The text in this book is heavily illustrated with about 300 line diagrams and screen capture images.

Symbols Used in the Text



Note

The author has provided additional information related to various topics in the form of notes.



Tip

The author has provided a lot of information to the users about the topic being discussed in the form of tips.



This symbol indicates the new command or tool introduced in AutoCAD Map 3D 2012.



This symbol indicates the existing command or tool that has been enhanced in AutoCAD Map 3D 2012.

File Conventions Used in the Text

Please refer to the following list of conventions used in this textbook, see Figure 1.

Data files are represented in italics	<i>image002.jpg</i>
Files to be used for tutorials are italicized	<i>c02-map3d-2012-tut01.dwg</i>
Files saved at the end of tutorials are italicized followed by letter ‘a’	<i>c02-map3d-2012-tut01a.dwg</i>
The text to be typed in an edit box is given in bold letters	Enter c08-map3d-2012-def01 in File name edit box

Figure 1 File name conventions

Naming Conventions Used in the Text

Tool

If you click on an item in a panel of the ribbon and a command is invoked to create/edit an object or perform some action, then that item is termed as **tool**.

For example:

Rotate tool, **Connect** tool

If you click on an item in a panel of the ribbon and a dialog box is invoked wherein you can set the properties to create/edit an object, then that item is also termed as **tool**.

For example:

Assign tool, **Attach/Detach** tool

Button

The item in a dialog box that has a 3d shape like a button is also termed as **Button**. For example, **OK** button, **Cancel** button, **Apply** button, and so on. If the item in a ribbon is used to exit a tool or a mode, it is also termed as button. For example, **Finish Edit Mode** button, **Cancel Edit Mode** button, and so on.

Drop-down

A drop-down is one in which a set of common tools are grouped together for creating an object. You can identify a drop-down with a down arrow on it. These drop-downs are given a name based on the tools grouped in them. For example, **Property** drop-down, **COGO** drop-down, and so on.

Drop-down List

A drop-down list is one in which a set of options are grouped together. You can set various parameters using these options. You can identify a drop-down list with a down arrow on it. For example, **Lineweight** drop-down list, **Units** drop-down list, and so on.

Options

Options are the items that are available in shortcut menu, drop-down list, dialog boxes, drop-down lists, and so on. For example, choose the **Zoom Extents** option from the shortcut menu displayed on right-clicking in the drawing area.

Free Companion Website

It has been our constant endeavor to provide you the best textbooks and services at affordable price. In this endeavor, we have come out with a Free Companion website that will facilitate the process of teaching and learning of AutoCAD Map 3D 2012. If you purchase this textbook from our website (www.cadcimtech.com), you will get access to the files on the Companion website.

The following resources are available for the faculty and students in this website:

Faculty Resources

- **Technical Support**

You can get online technical support by contacting techsupport@cadcim.com.

- **Instructor's Guide**

Solutions to all review questions and exercises in the textbook are provided in this link to help the faculty members test the skills of the students.

- **PowerPoint Presentations**

The contents of the book are arranged in PowerPoint slides that can be used by the faculty for their lectures.

- **Part Files**

The part files used in illustration, tutorials, and exercises are available for free download.

If you are a faculty member, please contact the publisher at sales@cadcim.com or the author at stickoo@purduecal.edu or tickoo525@gmail.com to access the website that contains the teaching resources.

Student Resources

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