Chapter 1

Quick Start

Before You Install

Minimum System Requirements

In order to run **NCSS 2022**, your computer must meet the following minimum standards.

Processor: 450 MHz or faster processor
32-bit (x86) or 64-bit (x64) processor

RAM: 256 MB (*512 MB recommended*)

Operating Systems: Windows 11 or later
Windows 10
Windows 8.1
Windows 8
Windows 7
Windows Vista with Service Pack 2 or higher

Windows Server 2019 or later
Windows Server 2016
Windows Server 2012 R2
Windows Server 2012
Windows Server 2008 SP2/R2

Privileges: Administrative rights required during installation only

Third Party Software: Microsoft .NET 4.6 (*Comes pre-installed with Windows 10 or later and Windows Server 2016 or later. Installation required on Windows 8.1 or earlier and Windows Server 2012 R2 or earlier. For systems where .NET 4.6 installation is required, a .NET 4.6 download helper will start automatically when you run the NCSS setup file.*)

Microsoft Windows Installer 3.1 or higher

Adobe Reader 7 or higher (*required for the Help System only*)

Hard Disk Space: 350 MB for **NCSS** (*plus space for Microsoft .NET 4.6 if not already installed*)

Printer: Any Windows-compatible inkjet or laser printer

Installing NCSS

The installation procedure creates the necessary folders and copies the **NCSS** program from the installation file. The files in the installation file are compressed, so the installation program decompresses these files as it copies them to your hard disk. During the installation wizard dialog, you will be able to choose the **NCSS** installation location.

This section gives instructions for installing **NCSS** on your computer system. You must use the **NCSS** setup program to install **NCSS**. The files are compressed, so you cannot simply copy the files to your hard drive.

Follow these basic steps to install **NCSS** onto your computer system:

1. If you are installing from a CD, insert the CD in the disc drive on your computer. The installation program should start automatically. If it does not, use your file browser to explore the CD, locate the executable **NCSS** setup file (ends with .exe), and run the file to start the installation. If you are installing from a download, simply run the downloaded installation file.

2. Once the setup starts, follow the instructions on the screen. **NCSS** will be installed to the drive and folder you designate during the installation process.

If Something Goes Wrong During Installation

The installation procedure is automatic. If something goes wrong during installation, restart the installation procedure from the beginning. It may help to restart your computer before retrying the installation. If trouble persists, contact our technical support staff.

Starting NCSS

NCSS may be started using your keyboard or your mouse using the same techniques that you use to start any other Windows application. You can start **NCSS** by selecting it from your Start menu using standard mouse or keyboard operations.

Entering Your License Key

The first time you run **NCSS**, enter your license key in the pop-up window that appears. If you do not enter a valid license key, you will be able to navigate among **NCSS** windows, view the help, and run procedures, but you will only be able to obtain sample output. If you purchase a license, you can enter the license key anytime by going to the **NCSS** menu and choosing **License**. Once you enter a valid license key, the evaluation version will become fully functional. You do not need to reinstall **NCSS**.

For more information about obtaining a license, visit www.ncss.com.

Updating NCSS

We periodically release updates that fix bugs or provide enhancements to your current version of **NCSS**. These updates are provided with all purchased licenses, free of additional charge. You can view the problems that each update fixes and download updates from our website at www.ncss.com/download/ncss/updates. To determine whether you have the most recent update, click on **About** from the **Help** menu to find the current version and release date of your installed software. Compare this information to that of the updates available at our website.

The Three Primary NCSS Windows

NCSS is controlled by three main windows:

1. **Data Window**
2. **Procedure Windows**
3. **Output Window**

Each window has its own menu bar and tool bar. We will now briefly describe each of the three.

The NCSS Data Window

The **NCSS Data** window contains the data that is currently being analyzed. This window lets you view, modify, and save your data. It has the look and feel of a spreadsheet. This is the main **NCSS** window. Closing this window will exit **NCSS**.

The Data Window chapter provides a closer look at the Data window. This chapter can be found from the general help or by clicking the help button of the Data window.

The NCSS Procedure Windows

The **NCSS Procedure** windows let you set the options for a particular analysis. Whether you are running a multiple regression, an ANOVA, or a scatter plot, you will set the options of this procedure in the Procedure window. Closing this window will not exit **NCSS**.

Clicking the help button in the top right corner of a procedure window will show the help documentation for that particular procedure.

The Procedure Window chapter provides a closer look at the Procedure window.

The NCSS Output Window

The **NCSS Output** window displays the output from the statistical and graphics procedures. It serves as a mini-word processor—allowing you to view, edit, save, and print your output. Closing this window will not exit **NCSS**.

The Output Window chapter takes a closer look at the Output window. This chapter can be found from the general help or by clicking the help button of the Output window.

Moving from Window to Window

There are several ways of moving among the windows:

1. Remove the windows you are not currently using by minimizing them.
2. Arrange the windows on your screen so that all can be seen.
3. Use the task bar along the bottom of your screen.
4. Use the Windows menu.
5. Use the Navigator.
6. Use the toolbar (this is usually the quickest and easiest).

Selecting a Procedure

There are three primary ways to select a procedure:

1. Select the procedure from the Data, Analysis, Graphics, or Tools menu.
2. Click the button of the corresponding procedure from the Favorites, Recent, or Loaded buttons of the tool bar.
3. Select the procedure using the Procedure Navigator (click the Procedures button to open the Procedure Navigator).

Obtaining Help

Help System

The Help System is started from the Help menu or by clicking on any of the help buttons (blue circle with a question mark). In most cases, clicking the help button will open the general help system and then go to the chapter corresponding to window in which the help button was pressed. **NCSS** updates, available for download at www.ncss.com, may contain adjustments or improvements of the **NCSS** Help System. Adobe Acrobat or Adobe Reader version 7 or later is required to view the help system. You can download Adobe Reader for free by going to www.adobe.com. Adobe Reader can also be installed from the *Utilities* folder on your **NCSS** installation CD.

Navigating the Help System

There are a few key features of our help system that will let you use the help system more efficiently. We will now explain each of these features.

Contents Tab

Clicking on the Contents tab opens the Contents portion of the viewer. From this tab you can expand the table of contents to view nested headings.

Index Tab

You can go view the index options by clicking the Index tab. The index allows you to quickly locate keywords and/or statistical topics. You can narrow the list of index entries displayed by selecting a specific topic category in the uppermost dropdown box.

Index entries are displayed in the format

        Index Entry   CHAPTER NAME   or   CHAPTER NAME   Index Entry.

You can control which entries are displayed by clicking on the radio buttons at the bottom of the tab window.

Searching a Document

Right-click on the document and select Find to search for a keyword in the document.

Printing the Documentation

To print pages from the documentation, click on the **Print** button at the top of the PDF. This will launch the Adobe Reader print dialogue screen. You can choose to print a single page or a range of pages from the help file.

Technical Support

If you have a question about **NCSS**, you should first look to the Help system. If you cannot find the answer there, look for help on the web at www.ncss.com/support. If you are unable to find the answer to your question by these means, contact **NCSS** technical support for assistance by calling (801) 546-0445 Monday – Friday between 8 a.m. and 5 p.m. (MST). You can contact us by email at support@ncss.com or by fax at (801) 546-3907. Our technical support staff will help you with your question.

If you encounter problems or errors while using **NCSS**, please view our list of recent corrections before calling by going to www.ncss.com/download/ncss/updates to find out if you problem or error has been corrected by You can download updates anytime by going to the update website. If updating your software does not correct the problem, contact us by phone or email.

To help us answer your questions more accurately, we may need to know about your computer system. Please have pertinent information about your computer and operating system available.

Creating and Opening a Dataset

Creating a Dataset

When the **NCSS** program is started, it will automatically open an untitled dataset. Here you can enter values by typing them directly or copying and pasting from another location. The Fill button at the top may be useful for entering columns of data with specific patterns. The column names may be entered in the light yellow Column Info portion of the Data window. If it is not showing, click the blue Column Info tab button. You can view the column information as columns or rows. To switch between the two, click the Rotate View button.

A dataset is saved by going to the File menu and selecting Save or Save As.

Opening a Dataset

To open a dataset you have saved, go to the File menu and select open. You can also open a recently used dataset by going to the File menu and selecting Recent, or by selecting from the file list at the bottom of the File menu options. To open an example dataset, go to File and select Open Example Data.

Running a T-Test

In this example, we will compare the average percent brain weight (of body weight) of small mammals (those under 100 kg in weight) to the average percent brain weight of large mammals.

Opening the Mammals Dataset

From the **NCSS** Data window, go to the File menu and select Open Example Data. Select Mammals and press OK.

Setting up the T-Test Procedure

To open the T-Test procedure, go to the Analysis menu, then Select T-Tests, and then select Two-Sample T-Test.

Click the Reset button to reset the Comparing Two Means or Distributions procedure.

Double-click in the Response Variable(s) box and select Percent. Press OK.

Double-click in the Group Variable 1 box and select SizeGroup. Press OK.

Click the green Run button to run the procedure.

Viewing T-Test Output

The results are displayed in the **NCSS** Output window.

This T-Test compares the mean percent of the two groups. Often, all you will need is the t-value and associated probability level. These are contained in the Equal-Variance T-Test Section. In this case the T-Value is 3.6496 and the probability level (p-value) is 0.00294. We reject the null hypothesis that means are equal.

A quick glance at the means of the two groups shows that the mean percent for small animals is 1.03 and for large animals is 0.13.

The Two-Sample T-Test chapter of the Help system goes into much more detail on how to perform a T-Test analysis.

Creating a Scatter Plot

In this example, we plot the sepal length against the petal length for three Iris varieties.

Opening the Fisher Dataset

From the **NCSS** Data window, go to the File menu and select Open Example Data. Select Fisher and press OK.

Setting up the Scatter Plot Procedure

To open the Scatter Plot procedure, go to the Graphics menu, then select Scatter Plots, and then select Scatter Plots.

Click the Reset button to reset the Scatter Plot procedure.

Double-click in the Vertical Variable(s) box and select SepalLength. Press OK.

Double-click in the Horizontal Variable(s) box and select PetalLength. Press OK.

Double-click in the Grouping Symbol Variable box and select Iris. Press OK.

Under Format Options, change Value Labels to Value Labels.

Click the green Run button to run the procedure.

Viewing Scatter Plot Output

The results are displayed in the **NCSS** Output window.