Instruction for Using the Automatic Control Systems **(ACSYS)** Toolbox

The first time user must follow steps (1) and (2) prior using ACSYS.

(1) Create directory C:\ACSYS2002
(2) Copy all **MATLAB and Image** files from ACSYS2002 folder in the CD to your C:\ACSYS2002

Note: Any other valid directory name or location may be used.
In that case, the above and the following directions should be modified accordingly.

To run **ACSYS,** simply start **MATLAB**[1]. Once the MATLAB Command window appears, at the prompt, type
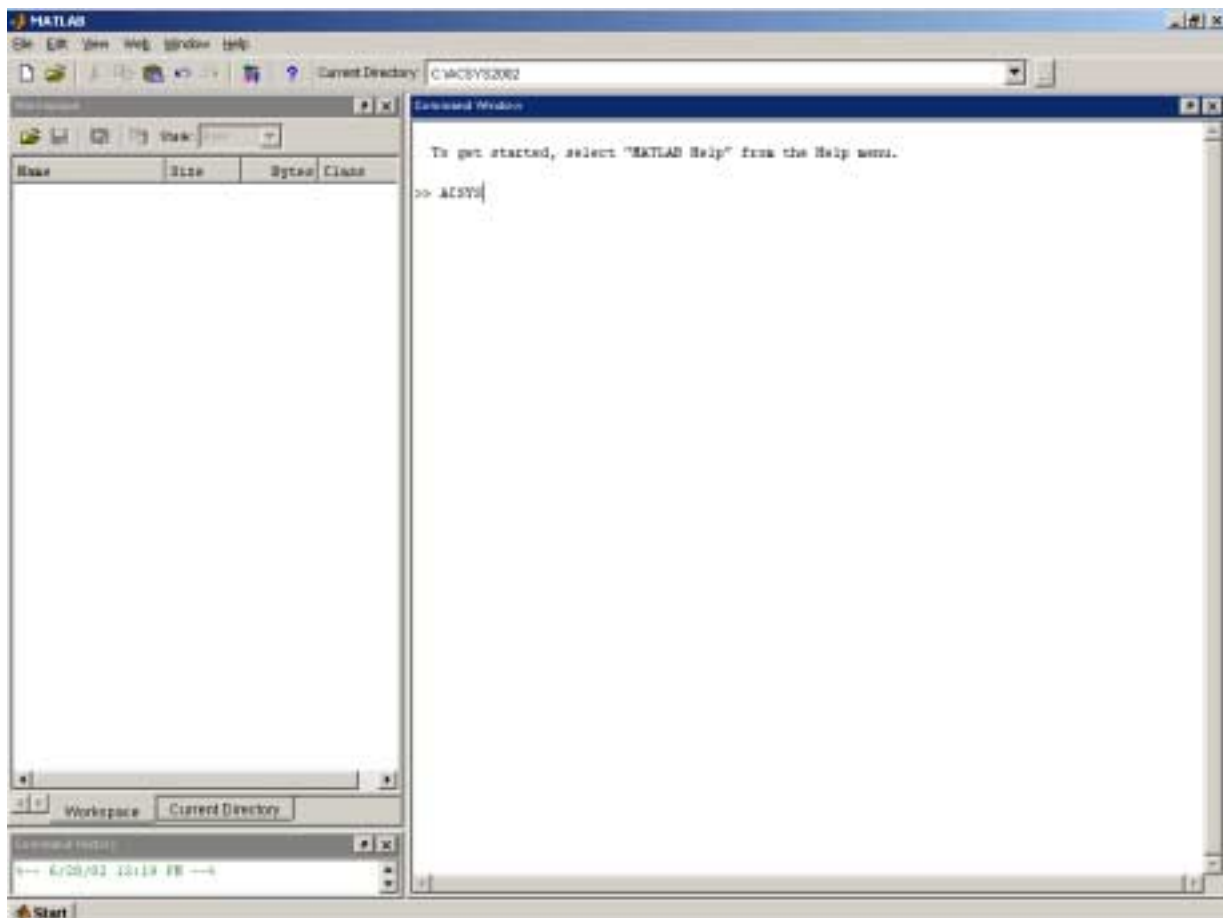
     cd C:\ACSYS2002

Or,

use the MATLAB Directory Browser to move to the ACSYS directory. Next, in the MATLAB Command Window, at the prompt (>>) type
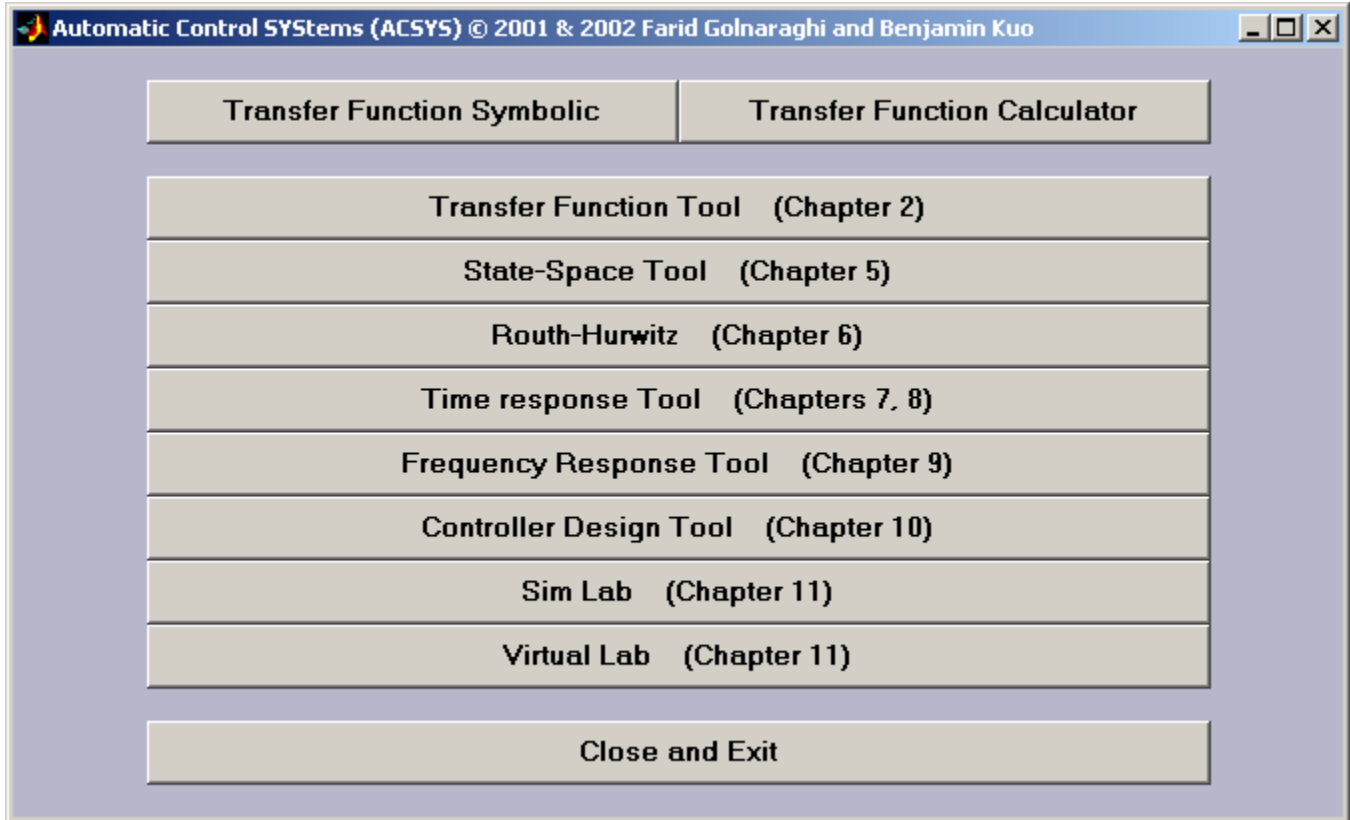
     acsys (or ACSYS)

 as shown in Figure below:

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[1] Please ensure to read <u>An Important note regarding MATLAB and Windows XP,</u> in the end of this document

See MATLAB documentation for more instructions on changing folders.

The **ACSYS** window appears as shown bellow:

Next click the appropriate button for the desired toolbox.

The **ACSYS** toolboxes may also be called directly by typing their name at the MATLAB prompt. That is:

To run the Transfer function Calculator, type in **tfcal** in the MATLAB Command window.
To run the Transfer function Symbolic, type in **tfsym** in the MATLAB Command window.
To run the Transfer function Tool, type in **tftool** in the MATLAB Command window
To run the Routh Hurwitz Tool, type in **stabtool** in the MATLAB Command window
To run the Time response Tool, type in **timetool** in the MATLAB Command window.
To run the State Space Tool, type in **statetool** in the MATLAB Command window.
To run the Frequency response Tool, type in **freqtool** in the MATLAB Command window.
To run the Controller Design Tool, type in **controls** in the MATLAB Command window.
To run the SIMLab, type in **simlab** in the MATLAB Command window.
To run the Virtual Lab, type in **virtuallab** in the MATLAB Command window.
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This version has been compiled using MATLAB R12, R12.1 and prerelease R13 (versions 6.0, 6.1 and 6.5, respectively), and may possibly have problems with earlier MATLAB versions. The MATLAB Toolboxes used in this software include: Control Systems, Simulink, Real-time Workshop and Windows Target.

Students who want to use the Student Version of MATLAB, should note that it contains MATLAB, Simulink and the Symbolic Math Toolbox. Students can purchase and download additional products to use with their student version. The Control System Toolbox is one of these products (see the Mathworks web page for more information).

For more information: http://www.mathworks.com/products/studentversion/

For bug reports and enhancements, please send email to:

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Thank you for trying **ACSYS**.

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An Important note regarding MATLAB and Windows XP

At the time of publication of this book, there is an issue of compatibility between MATLAB version 6.0 (R12), the student version of MATLAB (R12) and MATLAB version 6.1 (R12.1) and Windows XP. **Fortunately, the prerelease R13 of MATLAB has just become available in the final stages of the publication of this book,** which has addressed this compatibility issue. The **ACSYS** software has been tested and proven fully functional on MATLAB R12, R12.1 and prerelease R13, and is expected to work on final release R13.

As a result, we have decided to release three versions of the **ACSYS** software, which accompanies this book:

1. ACSYS 2002 (R12), which is supported by all Microsoft Operating Systems except for Windows XP. The users of the student version of MATLAB (R12) must use this version.
2. ACSYS 2002 (R12.1) is supported by all Microsoft Operating Systems, and appear to work fine with the Windows XP. Although we have not observed any problems running MATLAB 6.1 under Windows XP Operating System, Windows XP users may expect to encounter some problems.
3. ACSYS 2002 (prerelease R13), which is supported by all Microsoft Operating Systems. Mathworks Inc. is expected to issue a professional and a student version based on R13 in Fall 2002.

Regarding the Releases 12 and 12.1, upon our request, Mathworks Inc. issued the following statement:

"The Student Version of MATLAB 6.0 (R12) is not officially supported under Windows XP. For more information on the system requirements for the Student Version of MATLAB 6.0 (R12), please see the following URL:

Currently, there are no plans to officially support the Student Version of MATLAB 6.0 (12) on Windows XP, though our development staff may readdress support for Windows XP on the Student Version in the future."

Further in a statement in the following URL they suggest:

"MATLAB 6.1 (R12.1) was released before Windows XP was finalized and thus was not validated under Windws XP. Windows XP will be officially supported in our next release of MATLAB. The system requirements for MATLAB 6.1 (R12.1) can be found at the following URL:

In the minimal testing that we have done, we have experienced some incompatibilities with MATLAB 6.1 (R12.1) and Windows XP. There are two possible workarounds that you can do to address these issues:

   1. You can use Windows XP in the "Windows Classic Style" mode
   and/or
   2. You can download a new file, hg.dll …

PLEASE NOTE: The new hg.dll file is not meant for use with the Student Version of MATLAB 6.0 (R12) on Windows XP."

Based on the previous statements, it is our understanding that MATLAB R12 is not compatible with Windows XP and MATLAB version 6.1 (R12.1) may be used with Windows XP with some possible problems.