Introduction to STELLA

STELLA is a software package that allows the user to simulate systems without the use of any advanced programming language. STELLA stands for Structural Thinking Experimental Learning Laboratory with Animation. With STELLA the user creates a diagram of the interrelationships between the components of a model. In effect, STELLA provides a visual representation of the differential equation (or coupled differential equations) that describes the problem of interest, and then solves it numerically. STELLA can produce graphs and tables of data for any system modeled in the diagram.

A download of the STELLA software (version 10.0) for either Macintosh or PC-Windows platforms can be purchased for $59 (for a 6 mo. time of use limit copy) or $129 (for a copy with no time limit) from ISEE Systems over their web site [URL: http://www.iseesystems.com]. If you decide to purchase the $129 download of STELLA from HPS you will also be given an option to buy a backup CD for an additional $25 plus shipping. [A list of students in this year’s CEE 3510 class (limited to those expressing indication of interest) will be given to ISEE so that they can verify the requests they receive are from students. If you did not give permission for me to forward your name to ISEE, but now want to do so, please let me know.] Although the appearance and structure of the STELLA program’s user interface has changed over time, all problems for this class can be solved with any prior version of STELLA.

The STELLA program will be on the hard drive of the computers at each of CIT’s PC facilities including the ACCEL facility in Carpenter Hall (see www.it.cornell.edu/labs for locations and hours). STELLA can be found by clicking on the “Start” menu, choosing “All Programs”, then “Class Files”, then STELLA, and then STELLA again to start the program. Up to 20 simultaneous users of the STELLA software will be permitted at a time at CIT’s PC facilities. If all 20 copies of STELLA are being used, you will receive a message telling you to come back later. Otherwise, the computer will boot up STELLA.

The CIT lab locations will frequently have an operator on duty that can help you with basic questions about the computers and the printers, but not with STELLA itself.

If you are using one of the campus computer facilities, you will need some form of portable memory for saving your work. All campus computer facilities tend to be crowded in the afternoons. In general, evenings and early mornings provide the best opportunities to find an available computer. The limit of 20 simultaneous users is most likely to be a problem the day before STELLA assignments are due. Please start your assignments early so you have time to ask us questions.

You are now ready to try out STELLA. The ordering of layers and position of icons on the tool bar (described below) vary depending upon which version of STELLA you are using, however the same tools will be used to make models for CEE 3510 in any STELLA version. The description provided in this handout applies to version 10 of STELLA.
When you start STELLA for the first time, you should be looking at the first of four layers or “views” available in STELLA. The views are called the INTERFACE, MAP, MODEL and EQUATIONS (the Map and Model view were combined in earlier versions of STELLA). You can move between layers using the tabs (formerly up and down arrows) located on the left side of the screen.

An identifying feature of the Map or Model view is the "tool kit". The "tool kit" contains the items that you will need to create the structural diagram of your system. The icons for the "tool kit" run across the top border of the window. The figure on the following page shows the tool kit in STELLA v 10.0. Note that STELLA v 10.0 has some tool icons that we will not make use of and that were not included in earlier STELLA versions.

Although your instructor and TAs will be using STELLA v. 10.0, we should be able to open any files created using earlier versions that you bring to us when you need help.

In Assignment 1, you will learn how to use this tool kit to create your own model. You are now ready to begin.
This is the MODEL CONSTRUCTION layer of STELLA in version 10.0.

Summary of Instructions

1. Have some form of portable memory available for storing your STELLA assignments.

2. Buy STELLA or go to any the CIT computing facilities:
   see: http://www.cit.cornell.edu/labs for locations and hours of PC facilities.

3. Locate the STELLA program.
   Open the “Start” menu, choose “All Programs”, then “Class Files”, then STELLA, and then STELLA again to start the program.

4. Double click on the icon of the STELLA program.

5. Follow instructions as given on each STELLA homework assignment.