CE 770: ENGINEERING FRACTURE MECHANICS
FALL, 2002

Course Hardware and Software

In previous years, this course used software running only on UNIX workstations. This is the first time that this course will use (hopefully!) only the PC's in the ACCEL instructional computing facility and your own PC's. This means that all of the programs you will use will operate under either the Windows or LINUX operating systems. Have patience please--progress will need it.

1. SOFTWARE

You will use the following programs for crack growth simulation in this course:

- a 2D finite element mesh generator, **CASCA**
- a special-purpose 2D finite element code, **FRANC2D** (**FR**acture **AN**alysis **C**ode-2D), and its variant, **FRANC2D/L**
- a 3D fracture simulation system consisting of:
  - **OSM**, a 3D geometry modeler;
  - **FRANC3D** (**FR**acture **AN**alysis **C**ode-3D) a special-purpose 3D crack growth simulator; and
  - **BES**, a 3D boundary element analysis engine.
- **NASGRO,** NASA's standard program for fracture and fatigue calculations
- **AFGROW**, the US Air Force's standard program for fracture and fatigue calculations

A primer for the use of **CASCA** is available in "CEE Apps ---> CASCA" path on all the PC's in the ACCEL facility. Both "short" and "full length" primers for the use of **FRANC2D/L** are available in "CEE Apps ---> FRANC" path. Tutorials and other documentation for all of the **FRANC** codes are available at **http://www.cfg.cornell.edu.**

NASGRO 3.0 is available online at
`http://mmptdpublic.jsc.nasa.gov/nasgro/nasgromain.html`

AFGROW is available online at
`http://fibec.flight.wpafb.af.mil/fibec/afgrow.html`

For the first few weeks of the course, you will be using **CASCA** and **FRANC2D/L**. The following table shows the availability of these and the other programs in ACCEL:

Program/OS	Windows	LINUX
CASCA	yes	yes
FRANC2D/L	yes	no
FRANC2D	no	yes
OSM	no	yes
FRANC3D	no	yes
BES	no	yes
NASGRO		
AFGROW		

2. HARDWARE

All of the PC's in the ACCEL facility will be available for your use. Most will be running Windows/NT, some LINUX. Some are much faster than others. Some have Zip drives, some do not. Choose wisely and appropriately.

You should feel free to download all of the simulation software to your own PC. Follow the instructions at www.cfg.cornell.edu carefully.

3. USERNAMES and PASSWORDS

Your username on the ACCEL PC's is your NETID. Your initial password is your social security number, without spaces/hyphens.