ME 7953: Simulations in Materials

Fall 2002

Survey (let me know your background and teach better)

1) What do you want to achieve through this course?

2) Please write down something you know about MATLAB.

3) Consider a plane stress state. In *x-y* coordinate system, a stress tensor at a point is

$$\begin{bmatrix} \sigma_{xx} & \sigma_{xy} \\ \sigma_{yx} & \sigma_{yy} \end{bmatrix} = \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$$

What is the stress at that point on the surface with normal vector as $\left(\dfrac{1}{\sqrt{2}} \quad \dfrac{1}{\sqrt{2}} \right)$?

4) Write something about the stress field around a crack tip under mode I load.