Exam 2 – Skills List

1. Given a stiffness matrix and a strain tensor, determine the stress tensor, OR given a compliance matrix and a stress tensor, determine the strain tensor.

2. Given a three point loading test of a ceramic and all but one of: the flexural strength, the load, and the sample dimensions, determine the remaining variable.

3. Given a slip plane, slip direction, and normal-stress direction, calculate either σ_y given τ_c, or τ_c given σ_y.

4. For a cyclic fatigue problem where $Y = 1.0$, when given a sufficient set of σ_{max}, σ_{min}, initial crack length, critical crack length, number of cycles to failure, and A and m, determine the value of the remaining variable. Also determine the units of A.