Take Home Exam02C1: Yield Stress in Engineering Materials

## Assigned: Sunday 02/20/2022

## Due (as pdf by email) 02/23/2022 (within three working days)

You may submit your answers in one of two ways:

(i)

•For typed answers: as a .docx file (as is) or converted into a pdf file. (DO NOT SEND GOOGLE DOC)

•For handwritten answers: Please scan as images, and group together into one pdf file. Or you may hand them manually to my office (ECME-212)

(ii) Please send your submission via email starting with HWExam02C in the subject line.

## Diagram  Description automatically generatedHW 02C1.1

Compare the average value of  for ceramics vs. metals. What is the ratio of this number for these two types of materials?

## HW 02C2.1

Please take a note of the dispersion of values for different classes of materials, that is, the spread of the ellipse enclosing the numbers for different materials in a given class.

Why is it that the ellipse is much broader for metals than it is for graphite fiber reinforced polymer composites.

## HW 02C3.1

It was argued that the dislocation is characterized by a slip vector,  and a line vector, . While the line vector can meander into a curved configuration, the slip vector has a unique value for a dislocation. Why?

Why is is lattice translation vector?