CE 716 EROSION AND SEDIMENTATION
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Assignment #3 - Chapters 6 and 7 due March 22, 2023

Problem # 1 (20 points) in SI units
Solve Problem 6.5 for the clear water velocity profile.

Problem # 2 (40 points) in English units

Refer to Problem 6.9 and consider the data from the Low Flow Conveyance Channel (alongside the Rio Grande, NM) on p. 138 and 139. Compare the results at the same discharge of the two velocity profiles at two locations with different bedform types.

Plot the semi-logarithmic velocity profile, extrapolate the log law to the free surface, and determine the following:
a) von Karman constant
b) shear stress
c) mean flow velocity
d) Froude number
e) Darcy-Weisbach friction factor
f) Manning n
g) Chezy coefficient
h) laminar sublayer thickness in mm
i) friction slope, and the
j) momentum correction factor.

Compare the results.

Problem # 2 (20 points) in English Units
Solve Problem 7.4.

Problem # 3 (20 points)
Solve Problem 7.10.