

- 1** Having the sediment distribution obtained in Assignment #1 and assuming an average velocity of 1 m/s, calculate the fall velocity and the critical shear stress using different methods. Explain the reasons behind the differences.

- 2** Given the following data, design a trapezoidal channel with the vertical banks protected by wooden boards.
 $Q = 20 \text{ m}^3/\text{s}$; $S_0 = 0.0010$; $n = 0.025$; $d_{50} = 6 \text{ mm}$; $Z = 1$

- 3** Given the following data,
 $y = 1 \text{ m}$; $S_0 = 0.0008$; $B = 5 \text{ m}$; $d_{35} = 0.3 \text{ mm}$
 $d_{65} = 0.9 \text{ mm}$; $\nu = 10^{-6} \text{ m}^2/\text{s}$; $S_s = 2.65$; $m_s = 2$
Obtain the discharge for the upper flow regime, using the method proposed by Engelund and Hanson.