Isfahan University of Technology (IUT)Department of Civil EngineeringRIVER ENGINEERING1401-1402Term IIAssignment #5Bed&Suspended LoadTransportDue: 10/2/1402

- 1 Given the data given in Example (2.3), calculate the bed-load discharge using the methods proposed by Schoklitsch, Meyer-Peter et al., and Einstein, and compare the results with the measurement.
- 2 For the size distribution obtained in problem #1, assume that the river has a rectangular section and the width is 300 m. The slope of the bottom is 0.0005 and the discharge is $2.20 \text{ m}^3/\text{s/m}$. The measured volumetric suspended load concentration is shown in the figure. If the flow depth is 1.83 m,

a) Fill out the size fraction table.

b) Determine the suspended load discharge in terms of kN/year, using Laursen method. Show the calculation for the first fraction size, step by step, and fill out a table for the remaining sizes. Compare the calculated value to the measured value.



3 Having the sample you obtained from a reach of a given river and assuming the following data, compute the Total load using Einstein method.

$$Q = 55.5 \text{ m}^3/\text{s}$$
; $W = 41.0 \text{ m}$; $R = D = 2.0 \text{ m}$; $S = 0.000077$