

Isfahan University of Technology (IUT) Department of Civil Engineering
RIVER ENGINEERING 1400-1401 Term II
Assignment #4 Bed-Susp.&Total-Load Transports Due: 11/02/1401

- 1 Write a summary and critical review on the research paper you obtained on bed-load transport. Your summary should include details of the research project, assumption and findings. Critique the paper as if you were reviewing it for publication. Comment on the engineering applicability of the work presented.
- 2 Having the sample you obtained from a reach of a given river, 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 $2.20 \text{ m}^3/\text{s}/\text{m}$. If the flow depth is 1.83 m, 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.
- 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.
 $Q = 55.5 \text{ m}^3/\text{s}$; $W = 41.0 \text{ m}$; $R = D = 2.0 \text{ m}$; $S = 0.000077$