

## Homework #1

All problems are from the course textbook (Chapra).

### 1. Problem 14.1 (2 points)

Total: 2 points

#### 14.1

#### Problem

The data in Table P14.1 were collected on Boulder Creek, CO, on 12/23/94. The slope at the sampling location is approximately 0.004. Use the data along with the appropriate formulas to determine:

- (a) Cross-sectional area
- (b) Mean depth
- (c) Flow
- (d) Mean velocity
- (e) Longitudinal dispersion coefficient, and
- (f) Distance needed to attain lateral mixing

Table P14.1

x (ft)	H (ft)	U <sub>60%</sub> (fps)	U <sub>20%</sub> (fps)	U <sub>80%</sub> (fps)
0	0			
3	1.3	0.3		
6	1.25	0.35		
9	0.85	0.48		
12	1.2	0.46		
15	1.85	0.58		
18	1.85	0.66		
21	1.75	0.68		
24	1.9	0.67		
27	2.25		0.4	0.68
30	2.4		0.4	0.62
33	2.1		0.29	0.5
36	1.5	0.37		
39	1.0	0.25		
42	1.3	0.09		
45	1.2	0.13		
48	1.0	0.14		
51	0.8	0.08		
54	0			

*Assigned: 11 Sept 2017*

*Due: 20 Sept 2017*