

**CWR 3540 – WATER RESOURCES ENGINEERING – Fall 2024**

**Assigned Study Material:** Modules 2 and 3

**Homework Set No.3:**

**Required Problem A:** see statement below\*

**\*Problem A:** For the two sets of results of Example 2.6 (p. 56), which are plotted in Figure 2.6 and tabulated in Table 2.7, respectively for the Return Periods of 10 and 20 years, determine the constants A and B for Equation 2.15, using linear (or non-linear, at your discretion) regression analysis. Report the final A and B values and the coefficient of determination (i.e., R-squared) for each set of regressed data. Do notice that the solution of Equation 2.15 for each documented Return Period (i.e., 10 and 20 years) should represent the curves of Figure 2.6. Both Equation 2.15 and curve of Figure 2.6 for each return period may be used by governmental agencies and engineering practitioners.

**Required Problem B:** See statement below\*\*

**\*\*Problem B:** Using the Thiessen Polygon method for the area that is described in Figure P 2.13 (p. 62), which is part of Problem 2.13 (i.e., p. 62), determine the annual precipitation (in *inches*). In your analysis consider only stations C, E and F within the area boundaries with precipitation records of 4.2, 6.0 and 4.5 inches, respectively (i.e., ignore all other stations).

***Due on September 24, 2024 (at the start of the lecture). Please keep a copy of this assignment for your records and discuss your solution with either the TA or instructor prior to your Exam No. 1).***

**Recommended Practice Problems:** 2.4, 2.6, 2.7, 2.10, 2.12, 2.15

***Exam No. 1: Thursday, September 26, 2024***