Reading Guide

CEEG 340–Introduction to Environmental Engineering

Instructor: Deborah Sills

Reading assigned for Monday 11/11: Textbook pp.337-341, 456-461

After completing the reading, you should be able to:

1. Describe the importance of oxygen in aquatic ecosystems
2. Given Henry's Law Constant, K_H, and P_{CO_2} calculate $D.O._{sat}$.
3. Given Henry's Law Constant, K_H, P_{CO_2}, and the actual concentration of D.O., calculate the oxygen deficit.
4. Calculate BOD (L and BOD_5) for a mixture of two streams in a river (Example 7.5, another example of an exam-like problem).
5. Describe the activated sludge process.
6. Define mixed liquor suspended solids (MLSS) and mixed liquor volatile suspended solids (MLVSS).
7. Conduct a mass balance on biomass (X) within secondary treatment (control volume drawn in Figure 9.10, p. 458).
8. Conduct a mass blanace on BOD (substrate, S) within secondary treatment (control volume drawn in Figure 9.10, p. 458).
9. Define paramters described in Table 9.6: Y, k_d, S, S_0, Q_0, Q_w, and X_w.
10. Define the term solids retention time.