**CE 374K Hydrology, Spring 2011**

**Review for Second Exam**

The material is classified according to ***Bloom’s Taxonomy of Educational Objectives***:

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| --- | --- | --- |
| **Level** | **Title** | **Meaning** |
| 1 | Knowledge | Definitions, facts, formulas |
| 2 | Comprehension | Explanation of definitions, formulas, problem solving procedures |
| 3 | Application | Know how to use a formula or procedure to solve simple problems |
| 4 | Analysis | Break down a complex problem and solve by steps |
| 5 | Synthesis | Derivation of basic formulas, design of new systems |
| 6 | Evaluation | Advantages and limitations of alternative approaches |

**Lectures**

|  |  |  |
| --- | --- | --- |
| **Lecture** | **Topic** | **Leve**l |
| 1 | CUAHSI Hydrologic Information System | 2 |
| 2 | Runoff processes, and flow in the Everglades | 3 |
| 3 | Excess rainfall | 5 |
| 4 | Hydrologic measurement, flow gaging, rating curve | 2 |
| 5 | Unit Hydrograph | 3 |
| 6 | Hydrologic routing, Sanderson flood studies | 4 |
| 7 | EWB Panama | 2 |
| 8 | HEC-HMS for Waller Creek | 4 |
| 9 | Hydraulic routing in rivers | 5 |
| 10 | HEC-RAS for Waller Creek | 4 |
| 11 | Mapping flood risk | 3 |
| 12 | Hydrologic statistics | 2 |
| 13 | Flood frequency analysis and HEC-SSP | 2 |

**Readings: Applied Hydrology**

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| --- | --- | --- |
| **Source** | **Topic** | **Level** |
| Sec 5.1-5.4 | Runoff processes | 3 |
| Sec 5.5 | SCS method for Excess Rainfall | 5 |
| Sec 5.6 – 5.7 | Flow velocity and time of travel | 4 |
| Chap 6 | Hydrologic measurement, flow gaging, rating curve | 2 |
| Sec. 7.1 – 7.3 | Linear systems, unit hydrograph definition | 3 |
| Sec 7.5, 7.7 | Hydrograph computation, SCS unit hydrograph method | 4 |
| Sec 8.1, 8.2 | Level pool routing | 5 |
| Sec 8.4 | River routing, Muskingum method | 4 |
| Sec 9.1 – 9.2 | St Venant equations, definition of wave types | 5 |
| Sec 11.1 – 11.5 | Statistics and statistical parameters | 2 |
| Sec 12.1 – 12.3 | Flood frequency, return period, Log Pearson III | 2 |

**Other Readings**

|  |  |  |
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| Open Channel Flow equations | HEC-RAS Manual pp. 2-1 to 2-12  <http://www.hec.usace.army.mil/software/hec-ras/documents/HEC-RAS_4.1_Reference_Manual.pdf> | 5 |
| Flood Mapping Report Summaries | <http://www.ce.utexas.edu/prof/maidment/CE374KSpring2011/docs/FloodElevationData.pdf>  <http://www.ce.utexas.edu/prof/maidment/CE374KSpring2011/docs/MappingFloodRisk.pdf> | 3 |

You may bring with you one review sheet 8 ½” x 11” with anything written on it that you like.