**ES458 River Geology Field Course**
**Summer 2014 – Final Portfolio Instructions**

The final report should be compiled as a portfolio, presented in the neat, professional-looking three ring binder, with cover and tab-separators. In addition to paper-hard copy version, portfolios can also be compiled as electronic Adobe Acrobe *.pdf documents. The final class portfolio may be submitted electronically via email attachment, uploaded via moodle, copied/mailed via flash drive, or submitted in hard copy/three ring binder format. The field trip report will be organized according to the following outline format, and presented in the following order, with section tabs clearly labeled:

I. Introduction
- a. General overview of course and field trip
  - i. Figure: Road Map with Trip Stops
- b. Summary of Course Objectives and Goals of Field Trip

II. Systematic Field Stop Description (repeat this section for each stop, sequentially on the trip; see stop summary at the end of this document)

- A. Location Map / Stop Identification / Physiographic Description
- B. Geologic Overview
  - i. Bedrock Geology
    - a. rock types
    - b. chronology / rock age
    - c. geomorphic setting
- C. Geomorphic Field Observations (for each stop)
  - i. Landforms
  - ii. Processes
  - iii. Materials (types of deposits, texture, grainsize, description)
- D. Photo Gallery (from field photos)
- E. Stop Interpretation and Summary (1 to 3 paragraphs summarizing the take home message for each stop)

III. Course Synthesis and Summary Questions (Answer the following in narrative format; word processed, neat and professional looking)

A. Landforms and Processes Associated with western and central Oregon Rivers

What are the dominant processes that influence western and central Oregon Rivers? In your narrative include both a discussion of both geologic and tectonic processes.

What are the landforms associated with lower hillslope and valley environments along western and central Oregon Rivers?

B. Meteorologic and Climate Controls on Fluvial Processes in western and central Oregon

Compare and contrast precipitation patterns west of the Cascades vs. east of the Cascades. What are the dominant controls on these precipitation patterns?

What types of meteorologic conditions cause flooding west of the Cascades? What meteorologic condition causes the highest magnitude floods?

What types of meteorologic conditions cause flooding east of the Cascades?

C. Geologic Controls on Fluvial Processes in western and central Oregon

What types of climatically-driven and tectonically driven geologic processes result in large magnitude flooding in western and central Oregon?

Compare and contrast the magnitude of floods associated with meteorological vs. geological processes in western and central Oregon.

IV. Results from Lab/Field Exercises (answer all questions / type written; present in the following order:)

A. Pre- and Post-Trip Reading Questions (p. 191-194; include sections 1, 2, 3, 4, and 5 all questions)
B. Fluvial Hydrology Problem Set (Rational Runoff Problem) (p. 201)
C. River Hydrology Concept Review Questions (p. 203-204, quest. 1, 2 and 3 – skip the "last q. 3" typo)
D. Paulina Creek Review Questions (p. 206, Questions 7 and 8)
E. Whiskey Dick / Whitehorse Profile Exercise (p. 209 Question 2 only)
F. Buckskin Mary Flood Hydrology Exercise (p. 212 Question 4 only).
G. Deschutes Incision Rate Problem (p. 219-220; Part 3)
H. Deschutes Water Budget Problem (p. 221-222; Part 4, all questions)
H. Field notes, sketches, field calculations:
    i. Mt. Washington Overlook / Road Cut Sketch (Day 1)
    ii. LaPine Camp Sidewalk Geologic Map Model (Day 2)
    iii. Deschutes River State Recreation Area / discharge data collection (Day 3)
    iv. Trout Creek Road Cut Sketch (Day 4)
    v. Warm Springs Railroad Cut Sketch (Day 4)

V. Acknowledgements
VI. References Cited
VII. Appendix I – Copies of Field Notes, as available