Geography 213
Simon Fraser University
Department of Geography
Fall Semester 2021

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INTRODUCTION TO GEOMORPHOLOGY

LECTURE, LABORATORY TOPICS AND READING ASSIGNMENTS

Week 1: What is this course about?

Logistics, organization, and topics
Review of basic geological concepts
Historical conceptions of the landscape (Davis, Gilbert, Leopold, Wolman, modern era)

Readings: Review of geological concepts from GEOG 111 and/or EASC 101 textbooks.

Textbook Readings: Chapters 1 & 2 in Bierman and Montgomery, 1st edition.
or
Chapters 1 & 2 in Bierman and Montgomery, 2nd edition.

Week 2: What is the fundamental basis of geomorphology?

The delicate balance
Mass conservation and geomorphic transport laws

Readings: Wolman, M.G. and W.P Miller, 1960, Magnitude and frequency of forces in geomorphic processes, *Journal of Geology*, 68: 54-74.

Textbook Readings: Chapters 1 & 2 in Bierman and Montgomery, 1st edition.
or
Chapters 1 & 2 in Bierman and Montgomery, 2nd edition.

Suggested further readings: Dietrich et al. 2003. Geomorphic transport laws for predicting landscape form and dynamics. In: *Prediction in Geomorphology* edited by P.R. Wilcock and R.M. Iverson, American Geophysical Union, Washingt2 0 612 792 rem(D)000091,,1( )-62p. 1 213

or

Chapters 12, 15 & 16 in Bierman and Montgomery, 2nd edition.

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Lab 2: Tectonically-controlled and volcanic terrain.

Week 4: Where do landscape materials come from?

Weathering, soil production, and bedrock erosion

Textbook Readings: Chapter 3 in Bierman and Montgomery, 1st edition.

or

Chapter 5 & 6 in Bierman and Montgomery, 2nd edition.

No lab exercise

Weeks 5 & 6: How do landscape materials get down from mountain tops to valley floors?

Hillslope morphology and transport (slips, slides, flows, and falls)

Textbook Readings: Chapter 5 in Bierman and Montgomery, 1st edition.

or

Chapter 7 in Bierman and Montgomery, 2nd edition.

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Lab 3: Landforms of mass wasting.

Lab 4: Slope stability analysis.

Tentative Lecture and Laboratory Exercise Schedule

Week	Lecture	Lecture Topic	Lab Dates	Assigned Lab	Due	Returned
1	Sept. 13	Introduction	–	–	–	
2	Sept. 20	Fundamentals	Sept. 20			