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Program Name: [Blank]
 Department: [Blank]
 Course Number: [Blank]
 Title: [Blank]
 Credits: [Blank]
 Prerequisites: [Blank]
 Corequisites: [Blank]
 Electives: [Blank]
 Notes: [Blank]

Curriculum Change
 Program Revision
 Program Title Change
 New Program
 New Degree
 New Minor Program
 Liberal Studies Requirement Changes
 Other
 Current program name: [Blank]
 Proposed program name: [Blank]

Signature	Date
	4/20/14
	4/20/14
	4/20/14

- 5. Approvals**
- Department Curriculum Committee Chair
 - Department Chairperson(s)
 - College Curriculum Committee Chair
 - College Dean
 - Director of Liberal Studies (as needed)
 - Director of Honors College (as needed)

Part II. Description of Curricular Change

1. SYLLABUS OF RECORD

I. Catalog Description

GEOS 363 Volcanology

(3c-3l-4cr)

Prerequisite: Grade of C or better in GEOS 301

Introduces volcanoes, volcanic eruption styles, and deposits in subaerial and submarine environments. Students assess risks and hazards associated with living near active volcanoes and discuss the cultural influences of volcanoes around the world throughout human history. Study of different types of volcanic eruptions through historical and pre-historical case studies.

Laboratory exercises focus on rock identification and interpretation, fluid dynamics experiments, and learning laboratory and field skills of volcanologists that allow the determination of eruption dynamics.

II. Course Objectives

At the end of this course, students will be able to:

- 1) Correlate volcanic deposits and rocks with eruption style, intensity, and composition.
- 2) Recognize the devastating, yet constructive, nature of volcanoes and the environmental and climactic effects of volcanic eruptions.
- 3) Evaluate the relationship between rock chemistry, phase relations, and geologic occurrence for

K. *Submarine eruptions: Mid-ocean ridges, hot spots, and seamount volcanoes; volcanological exploration techniques* (4 hours)

L. Final exam (2 hours during final exam period)

Lab Schedule

Week 1 Textures of volcanic rocks; hand samples and optical microscopy

Week 2 SEM image analysis: quantifying vesicularity and crystallinity of volcanic rocks

This is the most recent edition.

VIII. Special Resource Requirements.

Students must purchase a 10X hand lens for lab exercises. These typically run \$5-20 depending

Course Analysis Questionnaire

Section A: Details of the Course

A1 Volcanology is a new course designed for junior and senior geology majors. It will be a controlled elective option for all Geology (Geology, Environmental, Energy Resources) Tracks.

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A5 This will not be a variable credit course.

A6 Many undergraduate geology programs in the United States offer an upper-level undergraduate course similar to this. There are numerous examples of recent offerings, including:

Oregon State University: GEO 427 Volcanology

University of Alaska, Fairbanks: GEOS F606

University of Bristol: Physical Volcanology and Geological Flow

areas with classic outcrops or unique examples of igneous and metamorphic rocks. Dr. Deardorff's professional research in the Pacific Northwest will also allow him to collect additional igneous samples for use in his volcanology course.

Our optical microscopes are growing old and many are not aligned well enough for students to use them easily. We are implementing a plan to replace six of them at a time using college equipment resources, so that each work table of students in the lab has access to at least one new microscope to examine optical features of the rocks in thin sections. Students supply