

COURSE SYLLABUS *updated May 1, 2004*

Title: SUBSURFACE CONTAMINANT BIOREMEDIATION

Instructor: Dr. Al Cunningham, Professor of Civil Engineering, Montana State University

Schedule of Topics: Fall 2004

Module I Abiotic Processes

August 23-27: Course Orientation and Session I-1: Flow through porous media

Aug. 30-Sept. 03: Session I-2: Mass Transport Through Porous Media

September 06-10: Session I-3: Multiphase flow concepts

September 13-17: Session I-4: Equilibrium Partitioning (EP Model)

September 20-24: Session I-4: Equilibrium Partitioning (EP Model)

September 27-01: Session I-5: NAPL Dissolution and dissolved plume formation

October 04-08: Session I-5: BIOSCREEN Model

October 11-15: **Examination #1**

Module II Contaminant Bioremediation

October 18-22: Session II-1: Biotransformation/Biodegradation overview

October 25-29: Session II-2: Oxidation - Reduction principles

November 01-05: Session II-3: Microbial process kinetics

November 08-12: Session II-4: Bioremediation of petroleum hydrocarbons

November 15-19: Session II-5: Bioremediation of petroleum hydrocarbons

November 22-26: Session II-6: Bioremediation of chlorinated organics

November 29-02: Session II-7: Bioremediation of chlorinated organics

December 06-10: **Examination #2**

December 15-19 Written Assignments submitted