BUTTE COLLEGE
COURSE OUTLINE

I. **CATALOG DESCRIPTION**

AET 35 - Heavy Equipment Methods **3 Unit(s)**

Prerequisite(s): NONE
Co-requisite(s): AET 36
Recommended Prep: AET 30 and Math Level II
Transfer Status: CSU
51 hours Lecture

This course will examine construction regulations, erosion control, drainage, environmental mitigations, soils and aggregates, technical report writing, interpreting blueprints and site plans, applied mathematical calculations, management skills, fleet management practices, project organization, and entrepreneurship.

II. **OBJECTIVES**

Upon successful completion of this course, the student will be able to:

A. Explain regulations and rules concerning construction and excavation work sites.
B. Write clear and concise reports, estimates, and plans.
C. Identify skills required for management of work teams.
D. Evaluate soils for excavation.
E. Develop an erosion control strategy.
F. Assess the fundamentals of fleet management.
G. Communicate and work cooperatively with others.

III. **COURSE CONTENT**

A. **Unit Titles/Suggested Time Schedule**

Lecture

Topics		Hours
1.	Introduction to Heavy Equipment Systems	3.00
2.	World of Opportunities	3.00
3.	Construction Site Safety	3.00
4.	Construction Regulations	3.00
5.	Construction Mathematics	6.00
6.	Excavation Techniques	3.00
7.	Fleet Management	3.00
8.	Technical Report Writing	3.00
9.	Blueprints and Plans	3.00
10.	Management Skills	3.00
11.	Project Organization	3.00
12.	Soils and Aggregates	3.00
13.	Erosion Control and Drainage	3.00
14.	Environmental Mitigation	3.00
15.	Pathways of Program Graduates	3.00
16.	Entrepeneurship	3.00
Total Hours		51.00

IV. **METHODS OF INSTRUCTION**

A. Guest Speakers
B. Collaborative Group Work
C. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
D. Discussion
E. Demonstrations
F. Multimedia Presentations
G. Lecture/Discussion

V. **METHODS OF EVALUATION**

A. Homework
B. Class participation
C. Final Examination
D. Written Assignments
E. Short papers

VI. **EXAMPLES OF ASSIGNMENTS**

A. Reading Assignments
   1. Go to website for California Department of Water Resources - follow links to find how to get a job with DWR. Prepare a list of questions for discussion in class.
   2. Go to website for Operating Engineers Local 3. Read the history, purpose, benefits and structure of OpEng. Read how to become a member of the Operating Engineers. Prepare a list of questions for class discussion.

B. Writing Assignments
   1. In a 2 page report state the benefits and drawbacks of working with an Operating Engineers union contractor versus non-union employers.
   2. Build in outline form a 1 page guide to gaining employment with DWR, listing the steps in order that you would take. Include timelines and due dates.

C. Out-of-Class Assignments
   1. Visit Valley Contractors Exchange at 951 E. 8th Street in Chico (M/F 8-5). Find out what the Exchange is, what they do, and the resources they provide members. Prepare a 2 page report summarizing what you have found.
   2. Build a maintenance guide using our Heavy Equipment listing of machines. This should include maintenance intervals, fluid and filter types and location, and periodic adjustments required. The operator's manual will be your primary reference; you may also find useful information on the internet. Think about how this would be a useful tool in managing a fleet of equipment.

VII. **RECOMMENDED MATERIALS OF INSTRUCTION**

Materials Other Than Textbooks:

A. Industry websites
B. Equipment Manufacturers' Operator Manuals
C. Handouts
D. Industry Specific Materials

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