

FLORIDA STATE COLLEGE AT JACKSONVILLE

NON-COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: TRA 0076
COURSE TITLE: Heavy Equipment Operators I
PREREQUISITE(S): None
COREQUISITE(S): None
TOTAL CONTACT HOURS: 210-222

(For Office Use Only:
Vocational Credits _____)

FACULTY WORKLOAD POINTS: N/A

COURSE DESCRIPTION:

This course is designed to teach entry level skills to students in the heavy construction industry. Topics covered include: safety, fuel oils, and lubricants, preventive maintenance, types of soils, setting grades and stakes, and basic math skills.

SUGGESTED TEXT(S): None

IMPLEMENTATION DATE: Fall Term, 1996 (971)

REVIEW DATE:

COURSE TOPICS	<u>CONTACT HOURS PER TOPIC</u>
I. Introduction to Apprenticeship Program A. Classroom Procedures B. Safety	16
II. Fuel Oils and Lubricants A. Diesel B. Gas C. Hydraulics D. Oils E. Filters	24
III. Orientation on Construction Equipment	32
IV. Different Types of Soil and Their Compaction A. Types B. Compaction	20
V. Grades and Grade Stakes A. Introduction to Survey Instruments B. Learning to Shoot Grade C. Marking	32
VI. Basic Math Skills A. Solving Problems for Volume, Weight, Area, Circumference and Perimeter B. Measure Tolerances	20
VII. Basic Science A. Molecular Action B. Health Problems from Exposure C. Safe Handling of Chemicals D. P.S.I.	30
VIII. How to Seek Employment A. Job Search B. Completing Employment Documents C. Making Job Changes	10
IX. Standard Hardware, Hand and Power Tools	10
X. Heavy Equipment and the Impact on Our Environment	8
XI. Signals	12

PROGRAM TITLE: Heavy Equipment Operation
 COURSE TITLE: Heavy Equipment Operators Apprenticeship I
 CIP NUMBER: 0649.020200

LIST PERFORMANCE STANDARD ADDRESSED:

- | NUMBER(S): | TITLE(S): |
|------------|--|
| 01.0 | <u>DEMONSTRATE UNDERSTANDING OF PROCEDURES</u> -- The student will be able to:
01.01 Apply safety practices during operation of heavy equipment.
01.02 Discuss function of each piece of heavy equipment as appropriate. |
| 02.0 | <u>DEMONSTRATE UNDERSTANDING OF OPERATION AND MAINTENANCE OF MECHANICAL SYSTEMS AND ENGINES</u> -- The student will be able to:
02.01 Perform preventive maintenance on equipment including greasing, changing oil, and replacing filters.
02.02 Perform additional maintenance based on specific equipment needs.
02.03 Safety check equipment prior to operation. |
| 03.0 | <u>OPERATE PNEUMATIC AND CRAWLER-TYPE TRACTOR WITH ATTACHMENTS</u> -- The student will be able to:
03.04 Remove and replace dozer blade.
03.05 Remove and replace bucket.
03.06 Attach cutting teeth as needed. |
| 04.0 | <u>OPERATE BACK HOE</u> -- The student will be able to:
04.01 Dig pit to specified grade.
04.04 Install bucket teeth to back hoe. |
| 05.0 | <u>OPERATE A MOTOR GRADER</u> -- The student will be able to:
05.02 Apply use of grading stakes when operating motor grade.
05.05 Change blade and sacrificial teeth on motor grader. |
| 06.0 | <u>OPERATE A CRANE</u> -- The student will be able to:
06.01 Apply crane safety procedures.
06.02 Review <u>Construction Industry Manufacturers Association</u> safety manuals. |
| 08.0 | <u>DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS</u> -- The student will be able to:
08.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
08.02 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
08.03 Read and follow written and oral instructions.
08.04 Answer and ask questions coherently and concisely.
08.05 Read critically by recognizing assumptions and implications and by evaluating ideas.
08.06 Demonstrate appropriate telephone/communication skills. |

LIST PERFORMANCE STANDARD ADDRESSED: (Continued)

NUMBER(S): TITLE(S):

- 09.0 DEMONSTRATE APPROPRIATE MATH SKILLS -- The student will be able to:
- 09.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 09.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 09.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 09.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 09.05 Demonstrate an understanding of federal, state and local taxes and their computation.
- 10.0 DEMONSTRATE APPROPRIATE UNDERSTANDING OF BASIC SCIENCE --The student will be able:
- 10.01 Understand molecular action as a result of temperature extremes, chemical reaction, and moisture content.
 - 10.02 Draw conclusions or make inferences from data.
 - 10.03 Identify health related problems which may result from exposure to work related chemicals and hazardous materials and know the proper precautions required for handling such materials.
 - 10.04 Understand pressure measurement in terms of P.S.I., inches of mercury and K.P.A.
- 11.0 DEMONSTRATE EMPLOYABILITY SKILLS -- The student will be able to:
- 11.01 Conduct a job search.
 - 11.02 Secure information about a job.
 - 11.03 Identify documents which may be required when applying for a job interview.
 - 11.04 Complete a job application form correctly.
 - 11.05 Demonstrate competence in job interview techniques.
 - 11.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 11.07 Identify acceptable work habits.
 - 11.08 Demonstrate knowledge of how to make appropriate job changes.
 - 11.09 Demonstrate acceptable employee health habits.
 - 11.10 Demonstrate a knowledge of the "Florida Right-To-Know Law" as recorded in Florida Statutes Chapter 442.
- 12.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP -- The student will be able to:
- 12.01 Define entrepreneurship.
 - 12.02 Describe the importance of entrepreneurship to the American economy.
 - 12.03 List the advantages and disadvantages of business ownership.
 - 12.04 Identify the risks involved in ownership of a business.
 - 12.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 12.06 Identify the business skills needed to operate a small business efficiently and effectively.