

UT-2800: SPECIAL TOPICS: HEAVY EQUIPMENT PRACTICE

Cuyahoga Community College

Viewing: UT-2800 : Special Topics: Heavy Equipment Practice

Academic Term:

Summer 2026

Subject Code

UT - Utilities Technology

Course Number:

2800

Title:

Special Topics: Heavy Equipment Practice

Catalog Description:

Supervised additional practice of heavy equipment usage learned in UT-2000. Emphasis on safety practices when using Safe Dig site equipment.

Credit Hour(s):

1

Lecture Hour(s):

0

Lab Hour(s):

3

Requisites

Prerequisite and Corequisite

UT-2000 Equipment Operations I or departmental approval.

Outcomes

Course Outcome(s):

Demonstrate and recommend earthwork techniques for tractor backhoes.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Identify trench cutting path and profile.
2. Perform trench cutting technique.
3. Identify cross-trench paths and profiles.
4. Perform cross-trench technique.
5. Identify loading techniques.
6. Perform loading techniques.
7. Identify backfill techniques.
8. Perform backfill techniques.

Course Outcome(s):

Analyze and perform the functions of a tractor with an excavating backhoe.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Perform excavation with a tractor backhoe.
 2. Recognize load limits of an excavating backhoe.
 3. Perform backfill techniques with an excavating backhoe.
 4. Recognize OSHA regulations for trenching and excavation.
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Methods of Evaluation:

1. Quizzes
2. Lab Activities
3. Participation

Course Content Outline:

1. Excavation processes
 - a. Trenching
 - b. Front end loading
 - c. Pipe installation
 - d. Grading
 - e. Backfilling
 - f. Site restoration
 - g. Work zone safety
 - h. Directional bore machine
 - i. Hydrovac
2. Tractor backhoe operation
 - a. Trench digging
 - b. Tractor stabilization
 - c. Soil loading and unloading
 - d. Backfill techniques
 - e. Safety guidelines
 - f. Tractor loading onto trailer
 - g. Tractor unloading from trailer

Religious Accommodation

Before reviewing the course schedule, students should carefully review the following religious accommodation policy and other required instructional policies:

Religious Accommodation:

Students seeking an accommodation for absences permitted under Ohio's Testing Your Faith Act must provide the instructor with written notice of the specific dates for which the student requires an accommodation and must do so not later than fourteen (14) days after the first day of instruction. Please submit requests for accommodations at this link: <https://portal2.tri-c.edu/ReligiousAccommodation/> Religious Accommodation Form. Students with questions about their religious accommodations under Ohio's Testing Your Faith Act may contact the College's Office of General Counsel and Legal Services by phone at 216.987.4856 or via email at legal@tri-c.edu.

Other Required Instructional Policies:

<https://www.tri-c.edu/student-resources/curriculum/documents/syllabus-part-b.pdf>

Weekly Schedule

	Topics
Week 1	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 2	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 3	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 4	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 5	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000

Week 6	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 7	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 8	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 9	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 10	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 11	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 12	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 13	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 14	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 15	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000
Week 16	Student practice using heavy equipment in safe dig site, continuation of activities from UT-2000

The Course Schedule is subject to change due to pedagogical needs, instructor discretion, parts of term, and unexpected events.

Required/Recommended Readings

Albayati, A. & Panzer, L. (2021) *Underground utilities for construction practitioners and homeowners*, ASCE Press.

Resources for the Instructor

Albayati, A. & Panzer, L. (2021) *Underground utilities for construction practitioners and homeowners*, ASCE Press.

Ober, G. J. (1999) *Operating techniques for the tractor loader backhoe*, Equipment Training Resources.

Additional Resources for the Instructor

1. OSHA Cooperative Program. *Backhoe operation best practices for supervisory personnel and operators*. American Pipeline Contractors Association.
2. Ditch Witch. (2024). *Cx series operators manual*.
3. TT Staff. (2024). 2024 Horizontal directional drilling guide. Trenchless Technology. <https://trenchlesstechnology.com/hdd-guide/>

Top of page

Key: 5486