UTAH SYSTEM OF HIGHER EDUCATION

Utah System of Higher Education
Civil Construction I
FY2027 / 4 Credits (120 Clock-Hours)

Foundational Courses

TECI 1010 Civil Construction Fundamentals **4 Credits / 120 Clock-Hours**

This comprehensive course is designed to provide students with a foundational understanding of civil construction processes, equipment, safety protocols, and environmental considerations. From the initial bid to project hand-off, students will delve into the intricacies of construction blueprint reading, measurement techniques, and soil mechanics. Real-world application through site visits and a culminating capstone project will solidify their knowledge and skills for successful entry into the heavy civil construction industry.

Objectives:
• Explore the fundamental concepts and practices within the heavy civil construction industry.
• Identify the standard processes involved from project bidding to final hand-off.
• Identify the functions of various heavy equipment commonly used in construction projects.
• Explain the environmental factors affecting construction projects.
• Integrate sustainable practices into construction planning and execution.
• Demonstrate safety throughout all aspects of heavy civil construction.
• Interpret blueprints including recognizing symbols and measurements.
• Perform depth and slope calculations, read grade stakes, and review GPS data.
• Interpret and explain the basics of geotechnical reports.
• Identify sand and gravel aggregate types.
• Explain proctor and moisture requirements for soil compactions.
• Describe asphalt paving techniques, including sand and aggregate requirements.
• Follow safety protocols associated with asphalt paving.
• Perform practical site visits, focusing on earthwork, excavation, and material transportation.
• Demonstrate ability to maneuver heavy equipment utilizing heavy equipment simulators and emphasizing safety protocols.
• Demonstrate basic utility layout principles.
• Explain load requirements for utilities.
• Demonstrate trenching and excavation with a focus on safety.
• Prepare a comprehensive capstone project based on a module from prior learning, or alternatively, utilize on-the-job projects to meet capstone project requirements.