

Course Information

CM 715 Construction Operations

- Instructor:** Scott J. Amos, PhD, PE, CPC
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- Description:** Course addresses the materials and methods of earthmoving, heavy, and building construction operations.
- Objectives:** After completing this course, you should be able to:
- Describe how machines, ingenuity, and capital are linked when it comes to construction technology.
 - Explain the differences in the depreciation of construction equipment for value/business or tax purposes.
 - Discuss the impact of improvements on construction equipment for the company and the operators.
 - Explain the different ways a backhoe operator can influence the outcome of a trenching operation positively or negatively.
 - List the facts and reasons that define the “switching” distance when using scrapers.
 - List the specific and quantitative goals a manager might establish to define the meaning of optimal fleet utilization and optimal delivery time.
 - Describe the main contributions of crane technology over time.
 - Describe the techniques, tools, and materials that allow contractors to build soil retaining structures.
 - Describe the various approaches that have been developed to respond to different ground conditions.
 - List the benefits of different forming technologies.
 - Elaborate briefly about the common features of short-span bridges and long-span bridges in relation to materials used for the superstructure and methods of construction.
- Prerequisite:** CM prerequisites are graduate standing or permission of instructor. The ability developed through undergraduate training to analyze cases, think critically, and express yourself in writing.
- Text:** Bernhold, L., *Construction Equipment and Methods: Planning, Innovation, Safety*. Hoboken, NJ: John Wiley & Sons, Inc. (2013).

Note: Text is subject to change as new texts and/or versions become available.

Course Site:	https://d2l.sdbor.edu/ All course materials, schedules, learning objectives, assignments, and supplementary materials are posted to a D2L course site that is accessible to enrolled students beginning the first day of the semester.
Topical Coverage:	<ol style="list-style-type: none"> 1. Costing the operation of equipment. 2. Creating and deploying massive power safely 3. Backhoes, dozers, scrapers, and graders 4. Trucks, loaders, and quarry operations 5. Cranes 6. Deep digs 7. Deep foundations 8. Forms and temporary structures 9. Bridge building technologies
Onsite or Distance?	All CM course offerings serve both onsite and distance learners simultaneously in a common section (M840T).
Course Delivery:	This course will be delivered in the HyFlex format. HyFlex represents an approach to creating and managing blended courses that provides students even greater choices when trying to manage their time. Hyflex, (Hybrid/Flexible), allows a student to choose whether they will attend a face-to-face class, or complete the required work online for any particular class date. Hybrid – combines both online and face-to-face teaching and learning activities. Flexible – students may choose whether or not to attend face-to-face sessions ... with no “learning deficit.”