

**PRGR 639**  
**Construction and Demolition Waste Management (2 credit)**

**Catalog description:**

Building disposal techniques including deconstruction as well as selective and partial selective demolition. Design and construction for deconstruction and reuse. Sustainable waste management including recycling and reuse of waste materials and components.

No pre-requisite courses are required. However, having prior experience with design or construction is preferred.

**Textbook:**

Diven, Richard, and Shaurette, Mark. "Demolition: Practices, Technology, and Management," Purdue University Press, 2010, ISBN: 978-1-55753-567-2.

**References:**

- Winkler, Greg. "Recycling Construction & Demolition Waste: A LEED-Based Toolkit," McGraw-Hill Professional, First Edition, 2010, ISBN: 978-0071713382.
- Liss, Helene, Loizeaux Family of Controlled Demolition Inc. "Demolition: The Art of Demolishing, Dismantling, Imploding, Toppling and Razing," Black Dog & Leventhal Publishers; First Edition, 2000, ISBN: 978-1579121495.

**Coordinator:**

Issam Srour, Associate Professor, Department of Civil and Environmental Engineering, American University of Beirut ([is04@aub.edu.lb](mailto:is04@aub.edu.lb))

**Prerequisite by Topic:**

No pre-requisite courses are required for this course.

**Educational Objectives/Learning Outcomes**

Students that successfully complete this course will:

- Become familiar with various building disposal techniques.
- Be able to assess the recyclability of building materials during demolition operations.
- Be able to evaluate the risks associated with building demolition.
- Be able to estimate quantities of construction and demolition waste
- Understand supply chain of recycling waste
- Understand behavioral aspects of recycling waste

**Topics covered**

- Introduction: History, Definitions (Ch. 1), and Demolition Techniques and Strategies (Ch. 3 Diven & Shaurette)

- Demolition Structures: low and high rise buildings, foundations, bridges, industrial and marine buildings (Ch. 4 Diven & Shaurette); Demolition Regulations (Ch. 5 Diven & Shaurette)
- Demolition Equipment and Safety (Ch. 8/9 Diven & Shaurette)
- Estimating and Pricing Contracts of Demolition Projects (Ch. 6/7 Diven & Shaurette)
- Estimating quantities of construction and demolition waste (journal papers)
- Material Handling and Recycling (Ch. 10 Diven & Shaurette)
- Behavioral aspects of recycling CDW (journal paper)

No lab experiments are required.

### **Assessment and grades**

- Class Activities (70%)
- Term Exam (30%)

### **Resources for the course**

- Course handouts and slides
- Case studies

### **Computer usage**