

## **Construction Management (CEM) 680 Sustainable Construction**

**Catalog Description:** Overview of the regulatory, social, environmental and economic impacts of sustainable planning, design and construction including a detailed analysis of supply-side sustainable renewable energy generation and demand-side design and construction systems in the context of urban, regional, local and corporate policy. Required course for the Solar and Renewable Energy graduate certificate

**Prerequisites:** Laboratory science course, consent of instructor.

**Co-requisites:** None

**Credits:** 3

**Instructor:** Brandon T. Moore

**Course Learning Outcomes:** At the conclusion of this class, students will be able to:

- Formulate an overview of the built environment from both a technical and policy perspective with a focus on sustainable development.
- identify the considerations required for sustainable projects and communities.
- Enumerate the rating systems available for sustainability.
- Explain the planning, design and construction of sustainable supply-side and demand-side systems within the built environment.
- Calculate life-cycle impacts for sustainable systems.

**Topics covered:**

1. Introduction to Sustainable Planning, Design & Construction
2. The (Built) Environment – Past, Present & Future
3. Social, Regulatory & Legal Considerations
4. Sustainable Public Policy, Legislation & Community Implementation
5. Sustainable Planning, Design & Rating Procedures
6. Sustainable Infrastructure, Building & Home Systems
7. Life-cycle Environmental Cost Analysis
8. Emerging Sustainability Trends & Developments

**Supplemental Information:** This course will be conducted in a lecture/discussion format using computer and web-based tools. Class lectures are premised on familiarity with assigned readings. Therefore, class material will not necessarily replicate assigned reading material, and both will be covered on exams. Any material covered by videos shown, videos assigned and speakers' presentations may also be covered on exams. Students are responsible for reading the appropriate material before it is covered in lecture. Additionally, students shall bring their textbook(s) and other reading materials to each lecture.

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The course also utilizes a number of industry guest speakers, green building or LEED development tours, interactive discussions and field visits outside of the classroom. While these sessions outside of class are not required, they are highly recommended and encouraged. Topics relating to these sessions will be part of the course, but can be considered homework. It is these sessions that also set the course apart from other lecture-only formats.

**Computer Usage:** Mandatory use of electronic spreadsheets, presentation graphics and word processing inclusive of related software.

### **Required Textbooks:**

Kibert, C.J. (2013). *Sustainable Construction: Green Building Design & Delivery*, 3<sup>rd</sup> Edition. John Wiley & Sons, Inc.

Gibson, S., Johnston, D. (2008). *Green from the Ground Up: Sustainable, Healthy & Energy-Efficient Home Construction*, 1<sup>st</sup> Edition. The Taunton Press.

### **Library Resources**

- Students may consult with a librarian on research needs. For this class, the subject librarian is Sue Wainscott.  
([https://www.library.unlv.edu/contact/librarians\\_by\\_subject](https://www.library.unlv.edu/contact/librarians_by_subject)). UNLV Libraries provides resources to support students' access to information. Discovery, access, and use of information are vital skills for academic work and for successful post-college life. Access library resources and ask questions at <https://www.library.unlv.edu>.

### **UNLV Policies:**

**Academic Misconduct**—Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution.

An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the *Student Academic Misconduct Policy* (approved December 9, 2005) located at: <https://www.unlv.edu/studentconduct/student-conduct>.

**Copyright**—The University requires all members of the University Community to familiarize themselves **with** and to follow copyright and fair use requirements. **You are individually and solely responsible for violations of copyright and fair use laws. The**

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**university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws.** Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

**Disability Resource Center (DRC)**—The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you. If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to the instructor during office hours so that you may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach the instructor in front of others to discuss your accommodation needs.

**Religious Holidays Policy**—Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor within the first 14 calendar days of the course for fall and spring courses (excepting modular courses), or within the first 7 calendar days of the course for summer and modular courses, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

**Transparency in Learning and Teaching**—The University encourages application of the transparency method of constructing assignments for student success. Please see these two links for further information:

<https://www.unlv.edu/provost/teachingandlearning>  
<https://www.unlv.edu/provost/transparency>

**Incomplete Grades**—The grade of I—Incomplete—can be granted when a student has satisfactorily completed three-fourths of course work for that semester/session but for reason(s) beyond the student’s control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. The incomplete work must be made up before the end of the following regular semester for undergraduate courses. Graduate students receiving “I” grades in 500-, 600-, or 700-level courses have up to one calendar year to complete the work, at the discretion of the instructor. If course requirements are not completed within the time

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indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.

**Tutoring and Coaching**—The Academic Success Center (ASC) provides tutoring, academic success coaching and other academic assistance for all UNLV undergraduate students. For information regarding tutoring subjects, tutoring times, and other ASC programs and services, visit <http://www.unlv.edu/asc> or call [702-895-3177](tel:702-895-3177). The ASC building is located across from the Student Services Complex (SSC). Academic success coaching is located on the second floor of the SSC (ASC Coaching Spot). Drop-in tutoring is located on the second floor of the Lied Library and College of Engineering TEB second floor.

**UNLV Writing Center**—One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 702-895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: <http://writingcenter.unlv.edu/>.

**Rebelmail**—By policy, faculty and staff should e-mail students' Rebelmail accounts only. Rebelmail is UNLV's official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students' e-mail prefixes are listed on class rosters. The suffix is always [@unlv.nevada.edu](mailto:@unlv.nevada.edu). **Emailing within WebCampus is acceptable.**

**Final Examinations**—The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. See the schedule at: <http://www.unlv.edu/registrar/calendars>.