



# SUSTAINABILITY FOR PROJECT MANAGERS

*ENCE 604 Course Syllabus, Summer 2014*

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## CATALOGUE DESCRIPTION

**ENCE 604 Sustainability for Project Managers** (3) *Majors only, or department permission.* This course addresses the fundamentals of sustainability for project managers including best practices of modern sustainable construction and project management. Commercial and residential buildings consume about 40 percent of the energy used in the United States. The course therefore emphasizes the application of the sustainable development standards to the built environment, including the practical operational aspects of sustainable facility project management. The course also will cover the fundamental concepts of sustainable development and the move towards economic prosperity, environmental protection, and social equity, taking all three dimensions into account to achieve sustainability. Project managers need to take responsibility for more sustainable development of organizations, facilities, and projects.

The owner of a facility, development, building, or project is the funding source for sustainability criteria and implementation; therefore, there is focus on the facility manager and facility owner.

Other topics covered in the course include organizational structure for sustainability management; cultural issues associated with sustainable project and facility management; financial features needed for sustainability, sustainable construction project management; environmental issues due to sustainability requirements; HVAC, energy, and water management impacts due to sustainability design and operations; and green buildings including LEED requirements for design and construction; and sustainability strategic management.

Additionally this course develops basic knowledge about the modern green rating systems, facilities management, environmental management, and budgeting for green initiatives.

The course includes thorough coverage of environmental and sustainable management including such topics as heat reclamation, chilled beams, digital controls and other ventilation/control systems; renewable wind, solar, photovoltaic, geothermal, hydro, and fuel cell energy sources; new lighting options; and state-of-the-art water conservation methods.

In addition, this course will include coverage of crucial recent and emerging trends in sustainable project management.

The course is suitable for project managers both in the government, military, and private sectors, including engineers, architects and other design professionals, consultants, developers, real estate professionals, facility owners in the private and public sectors, as well as non-technical professionals interested in the latest advances in sustainable project management.

Guest speakers and a field trip to a sustainable green building construction project job site on campus will be scheduled. The course requirements include real word examples by utilizing team case studies in sustainability.

## TEXTBOOKS

*Sustainable Facility Management: Operational Strategies for Today*, by John P. Fennimore, Published by Pearson@2014, ISBN 978-0-13-255651-4. (**Required**)

*Sustainability in Project Management*, by Gilbert Silvius, Published by Gower, ISBN 978-1-4094-3169-5 (**Optional**)

*Sustainable Construction: Green Building Design and Delivery, Third Edition*, by Charles J. Kibert, Published by Wiley, ISBN 978-0-470-90445-9 (**Optional**)

*Contractor's Guide to Green Building Construction: Management, Project Delivery, Documentation, and Risk Reduction*, by Thomas E. Glavinich, Published by Wiley, ISBN 978-0-470-05621-9 (**Optional**).

## COURSE OBJECTIVE

This course is designed to help students develop the ability to utilize techniques of sustainable project management. Some of the objectives of this course are to develop an understanding of the following items:

1. Analyze the organizational structure and cultural aspects of properties and facilities.
2. Review the Green Building Rating systems, including LEED building certifications.
3. Learn about the proper maintenance of facilities using advanced methods essential to sustainable operations.
4. Discussion of financial management and sustainable controls of facilities including proper budgeting to aid in green initiatives.

5. Understand sustainable design and construction project management methods and parameters, including discussion of recycling construction materials and post construction issues.
6. Understand facility and global environmental management including concerns of ozone, greenhouse gases, and carbon footprint.
7. Familiarization with fire and sustainable security management systems.
8. Understand facility environmental management issues.
9. Coverage of sophisticated building mechanical systems and controls including plant sustainability.
10. Review sustainable energy management and renewable energy processes.
11. Understand building site interior and personnel management including focus on water, the most precious commodity and the challenge to create a more sustainable environment.
12. Discussion of sustainable landscaping and housekeeping.
13. Understand concepts of green building construction and sustainable building design criteria.
14. Discussion of strategic planning and project financial analysis.
15. Sustainability goals we should be striving toward for the good of the planet, including appropriate case studies.

Upon completion of this course, the student will be conversant on the subject of sustainable project management, including the planning, design, construction, sustainment, and modernization criteria, as applied to sustainable facility project management, as well as to be able to identify the concepts, practices, and impacts of facilities sustainment, the longest and most costly function in the life cycle of a facility.

## LOGISTICS

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<i>Time &amp; Location</i>	On-Campus – Mondays and Wednesdays 5:30 PM to 8:00 PM; Location - TBD On-Line video Conferences via Scopia – Tuesdays and Thursdays 7:00 PM to 8:00PM
	On-line students will have access to view the video of the recorded on campus lectures, which take place one day prior to the Scopia videoconference.
<i>Instructor</i>	Neil Schulman
<i>Office Hours</i>	Office Hours - by appointment
<i>Email Address</i>	nrs@umd.edu
<i>Learning Management System (LMS)</i>	Canvas is the current system. All assignments for this course are posted on Canvas as well as lecture slides/notes and other materials. Answers to homework problems as well as practice tests are posted. We use Canvas for all examinations. Canvas can be used for team sites, wiki's, blogs, and emails to the class, groups, or individuals. <a href="http://umd.instructure.com/courses/710073?invitation=5lpiaREO7FmYNdOtnh0qm9ps6e5RzGPkdLCyEcuO">http://umd.instructure.com/courses/710073?invitation=5lpiaREO7FmYNdOtnh0qm9ps6e5RzGPkdLCyEcuO</a>
<i>Videoconferences</i>	For our On-Line students, weekly videoconferences are required. They are an integral element of the On-Line course paradigm. The conferences encourage the students to ask clarifying questions and to get to know one another. The software we are using is Scopia and it may be accessed at <a href="http://emeeting.eng.umd.edu/scopia/entry/index.jsp">http://emeeting.eng.umd.edu/scopia/entry/index.jsp</a> . The meeting room is 60604

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## POLICIES

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<i>Grading</i>	Grading is based on comprehension and mastery of the material. Incremental elements that influence final grade approximately include: tests and quizzes (55%), project case studies (35%), evaluations, attendance, class participation, and peer reviews (10%). Final grades will take into account breaks in the score distribution for the class.
<i>Class Format</i>	The course is a graduate level class designed to develop the student's understanding to the management of sustainability. The class will be case study oriented. Materials will be presented in lectures, discussions, and assigned readings, and applied to the team case study assignments. The cases will serve as a focal point for real world discussions. Guest speakers and a field trip to an on campus construction site will also be included.
<i>On Time Delivery</i>	We expect all deliverables to be on time or early. Despite the best laid plans, life does sometimes intervene. We can be flexible in assignment due dates as long as the student makes arrangements in advance. After the fact submissions, without prior approval, will not be accepted.
<i>Individual Extra Work</i>	The answer is no! We cannot permit extra work for additional credit in hopes of earning a higher grade because it simply is not fair to the other students. This is firm.

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*Students w/  
Disabilities*

The University has a legal obligation to provide appropriate accommodations for students with disabilities. Please inform the instructor of any accommodations needed relative to disabilities.

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## CODE OF ACADEMIC INTEGRITY

The course is subject to the Code of Academic Integrity and Honor Pledge available on the web at <http://www.studenthonorcouncil.umd.edu/index.html>. They prohibit students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents, and forging signatures. The instructor is not reluctant to assign the grade “XF” for the course should any of the above apply.

## LEARNING ASSISTANCE SERVICE

If you are experiencing difficulties in keeping up with the academic demands of this course, contact the Learning Assistance Service, 2202 Shoemaker Building, 301-314-7693. Their educational counselors can help with time management, reading, math learning skills, note-taking and exam preparation skills. All their services are free to UMD students.

## CLASS SCHEDULE

Class	On-Campus Date	Topic	On-line Date	Chapter
1	6/2	Facility Types and Management Methods	6/3	1
2	6/4	Sustainable Maintenance Operations & Managing Outsourced Services	6/5	2 & 3
3	6/9	Financial Management and Control	6/10	4
		<u>Test #1 – Chapters 1-4 – this week</u>		
4	6/11	Construction Management and Sustainable Design	6/12	5
5	6/16	Fire and Security Systems and Disaster Prevention	6/17	6
6	6/18	Facility and Global Environmental Management	6/19	7
		<u>Team case study #1 due – this week</u>		
7	6/23	Building Systems and Controls	6/24	8
		<u>Test #2 – Chapters 5-8</u>		
8	6/25	Major Building Equipment Systems and Subsystems	6/26	9
9	6/30	Energy Management and Renewable Energy	7/1	10
10	7/2/	Building Site Interior and Personnel Management	7/3	11
11	7/7	Green Building Construction	7/8	12
12	7/9	Strategic Planning and Project Financial Analysis	7/10	13
	-	<u>Test #3 - Chapters 9-13 – this week</u>		
		<u>Team case study #2 due – this week</u>		
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Note: **This syllabus is a plan and is subject to change!** 7/14/2013