

LAND363 – Advanced Landscape Site Engineering

Meets: M,W, 9-11:40am, B101 NESB

Instructor: Joe McGrane

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Course Description

One of the most important, practical skills specific to the profession of Landscape Architecture is the ability to solve the more pragmatic issues of site grading and storm drainage, the layout of vehicular circulation, and the location of site utilities in an efficient, cost effective, and aesthetically functional landscape solution. The goal of this course is to introduce students to the practical aspects of site engineering and provide them with the skills and vocabulary to interface effectively with other design professions. Its content is considered one of the minimum core skills associated with professional practice.

Through reading and class assignments the class will gain experience in the following topics:

- Basic grading as a continuum of LAND360
- Field measurements
- Cut and fill calculations
- Graphic standards for layout and grading plans
- Parking lot and road layout
- Engineering considerations with regard to storm drainage, detention facilities and water quality, sanitary sewerage, site electrical systems, potable water systems, water feature design,
- Design implications of municipal codes and federal accessibility requirements.
- Cost estimating
- AutoCAD

Texts:

Site Engineering for Landscape Architects, sixth edition, by Steven Strom **(REQUIRED)**

Time Saver Standards for Landscape Architecture, latest edition, by Charles Harris and Nicholas Dines. (optional)

Sustainable Landscape Construction, A guide to Green Building Outdoors, by J William Thompson, Kim Sorvig (optional)

Equipment:

ENGINEERS SCALE, CALCULATOR, PENCIL, ERASURE, REQUIRED IN EACH CLASS

Studio work space with all required drafting supplies

25' tape measure,

CST/berger or Johnson Pocket Site Level available at Hixon Surveying Supply, Ft. Collins or online. (about \$20)

3 ring binder from LAND360 with 30 sheets of white bond paper for inclass assignments

Course Grading:

The course is based on a series of readings and exercises designed for skill development and practical experience. The exercises are intended to demonstrate a student's mastery of the subject matter. Each exercise will be evaluated on accuracy, clarity and creativity. Anyone suspected of copying or cheating will be dealt with per the University Code. (see Honor Pledge)

Course grades will be determined as a cumulative average.

	<u>Score</u>	<u>Grade</u>
	90 – 100	A Accurate, clear and creative solution that is well justified.
50% homework, in class assignments and exams	80 – 89	B minor changes, good understanding of material
	70 – 79	C moderate changes, general understanding of material
25% final project	60 – 69	D major changes, poor understanding of material
25% park ACAD	0 - 59	F Incomplete or missing assignment, without redeeming qualities or unintelligible

Graphic Quality

Assignments may be either hand drawn or digital on 8 ½"x 11or 11x17 white bond paper. Hand drawn work shall reflect professional quality draftsmanship, lettering, and organization. No assignments on trace paper will be accepted. Neatness matters. Show your work.

Late policy

Should a student elect not to participate in project due dates, the grade for that assignment will be reduced by 20 points or 2 grades. Incompletes will only be considered as defined in the University Code. Inclass assignments can only be made up by prior arrangement with instructor.

Attendance

Students are expected to attend all classes. There will be in class problems and exams.

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Tentative Class Schedule 2014

The class meets at 9am in NESB101 for a 1hour lecture and topic orientation. 10 to 11:40 am will be spent in the studio working on an assignment that will be generally due at the end of the class.

Part 1- Earthwork and Grading

Week	Monday	Wednesday
1		Introduction
2	Chapter 1,2,3 Review Contours, sections, landforms,	Chapter 4 Calculating slope, interpolation, slope analysis
3	Chapter 5 Grading linear elements, roads and paths	Chapter 5 Grading simple slabs and terraces
4	Chapter 6 Grading process, basic surveying	Chapter 6 Problems
5	Chapter 6 Problems	EXAM - grading
6	Chapter 7, 8 Soils and earthwork Cut and fill Contour method	Chapter 8 Cut and fill Average end method
7	Chapter 8 Cut and fill Borrow pit method	Chapter 16 Horizontal road alignment
8	Chapter 17 Vertical road alignment	Chapter 15 Site layout and dimensioning
9	Spring break	

Part 2 – Storm Drainage, Site Utilities and the Engineering Interface

10	Chapter 9,10,11 Stormwater mgmt. strategies and techniques, erosion control	Chapter 9,10,11 Stormwater mgmt. strategies and techniques, erosion control
11	Chapter 12 Engineering systems and the civil interface, Detention design	Chapter 14 Piped drainage systems
12	Sanitary sewer systems, potable water supplies, irrigation design	Site electrical
13	Water feature mechanical design	Water feature design
14	Final project- Office Park design Case studies, layout	Final project grading
15	Final project Site utilities	Final project planting and irrigation
16*	Cost estimating	City codes
17	Finals week	

*Park ACAD project and Final Project due 5pm. Friday, before final exam week

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STATEMENT OF ACADEMIC HONESTY

As required by the University regarding the Academic Integrity Policy, please read the following:

- This course will adhere to the Academic Integrity Policy of the Colorado State University General Catalog and the Student Conduct Code. Please review it.
- All graded components will respect the Honor Pledge.
- HONOR PLEDGE: I will not give, receive, or use any unauthorized assistance.

Student Signature

Date