

LANDSCAPE CONSTRUCTION: TOPOGRAPHIC DESIGN

USC MASTER OF LANDSCAPE ARCHITECTURE PROGRAM

WEEK 1, 01-08-19

COURSE SYLLABUS, LANDSCAPE CONSTRUCTION: TOPOGRAPHIC DESIGN – 2019

GENERAL INFORMATION

- ◆ Course number: ARCH 534
- ◆ Start Date January 8th; last scheduled class at 15th week April 23th (Probable Final Exam date May 7th)
- ◆ Class meeting time: Tuesdays, from 9:00 a.m. to 11:50 a.m.
- ◆ Number of class meetings: 16 meetings (includes one two-hour Final Exam)
- ◆ Units: 3 semester units
- ◆ Adjunct Associate Professor: Jerry Hastings, ASLA, CA license number 1577
- ◆ Room: WAH B7 – Clipper Lab, basement Watt Hall
- ◆ Office hours: Tuesdays, 7:00 a.m. to 8:50 a.m., 12:00 p.m. to 1:00 p.m. or as needed; location Watt Hall, 339a
- ◆ Contact Info: < jphastin@usc.edu >; Mobile phone 818-687-3430; mailing address: 494 Parkview Court, Simi Valley, CA 93065-8200

ABOUT TOPOGRAPHIC DESIGN AND SOME DEFINITIONS

The title of this course, Landscape Construction: Topographic Design (hereinafter referred to as Topographic Design, or ARCH 534), is a synthesis of landscape construction, landscape design, and civil engineering. At its most basic level, grading is both a construction skill and a design skill. The term "design" runs the gamut from aesthetic to functional: Construction is at the functional end, and design is at the aesthetic. In other words, grading is design.

Topographic – According the Merriam Webster, Topographic is defined as the art or practice of graphic delineation in detail usually on maps or charts of natural and man-made features of a place or region especially in a way to show their relative positions and elevations.

Topography combines *top-* with *graph*, a root meaning "write" or "describe". A topographic (or topo) map not only shows the surface features of a region but also indicates the contours and approximate altitude of every location, by means of numerous curving lines, we call "contours," each indicating a single elevation. In other words, it shows a "three-dimensional" picture on a two-dimensional surface. Topo maps are commonly used by hikers, surveyors, engineers, and of course landscape architects. See next.

- ◆ **Grading** – In grading, we move soil *to accommodate some human purpose*: a school campus, a pedestrian walk, a street, a freeway, a park, a hillside site for a home, or anything that requires some kind of intervention.

Grading is the first step in site design regardless of whether the site is undeveloped or is the redesign of a previously developed site. Undeveloped land in its raw, undisturbed state, is almost never suited to development without some level of grading intervention. Further, land that has been previously developed usually must be modified, sometimes extensively, to accommodate a new design program.

- ◆ **Drainage** – Defined by Wikipedia as "the natural or artificial removal of a surface's water from an area." When we grade a site, we grade to drain, meaning we grade to direct stormwater water away from structures or other site amenities where the presence of excess stormwater could negatively affect the amenity, or pedestrian or vehicular circulation.
- ◆ **Stormwater management** – Consists of two terms, stormwater and management.

- **Stormwater** is defined as any water running off a land surface before it reaches a natural water body. It occurs when the rate of precipitation or snow melt exceeds what the soil can absorb.
- **Management** – Urbanization has dramatically increased the percentage of impervious surfaces in our communities, which in turn has dramatically increased the amount of stormwater that flows into our waterways and ultimately the ocean. In the recent past, the goal had been to *dispose* of this stormwater runoff as quickly and completely as possible, moving it from its point source into a lake, river, wetland, or the ocean.

Today, we have a more enlightened view. In the city of Los Angeles for example, current regulations require that the first $\frac{3}{4}$ inch of stormwater that falls on 100% of a site be kept on that site. This allows a portion of that stormwater to infiltrate into the ground to help recharge our aquifers, and simultaneously reduce the burden on our drainage infrastructure. Thus, the essence of stormwater management as it applies to landscape architecture is to design landscapes that are capable of capturing, holding, and infiltrating stormwater in an aesthetically pleasing way. Over time, this strategy can in effect turn back the clocks to move us at least part back to a time before massive urbanization occurred.

LEARNING OUTCOMES

Upon completion of this course, students will be able to:

- ◆ grade a site of moderate complexity.
- ◆ identify natural and manmade contour signatures and utilize these signatures to execute grading solutions through the manipulation of contours.
- ◆ apply the basic grading formulas to calculate grade, length, vertical difference in elevation and cross slope.
- ◆ apply stormwater management design competencies, including the design of retention and detention basins, control of first flush runoff, erosion control, and knowledge of current regulatory requirements.
- ◆ design aesthetically satisfying grading solutions.
- ◆ understand and apply the principles of landform grading as they relate to large scale land development.
- ◆ design drainage systems; apply common drainage formulae such as the Rational Formula.
- ◆ be familiar with other knowledge, skills and abilities that are traditionally associated with Landscape Construction: Topographic Design. These include:
 - basic elevation surveying and the creation of topographical maps from raw survey data
 - cut and fill calculations (volumes of soil that moved when a site is graded)
 - design of road alignments through use of horizontal and vertical curve design techniques
 - working with coordinate systems
 - use of formulas to determine areas of geometric shapes; the use of CAD software and the polar planimeter to determine areas of non-geometric shapes
 - knowledge of field grading practices
 - familiarity with codes and ordinances pertaining to grading, drainage and stormwater management design
 - knowledge of how soil is compacted and compaction testing

- familiarity with standard construction details that pertain to grading and drainage design

LEARNING PHILOSOPHY AND COURSE WORK

To paraphrase Confucius, *“That which you do not know, the doing will quickly teach you.”* This is the essence of experiential learning or learning by doing. This goal is realized through the assignment of progressively more rigorous in-class exercises and homework assignments, a two-part term project, and a midterm and final exam.

- ◆ *Exercises* – there are 32 exercises that will be completed in class. Exercises are crafted to introduce and teach new concepts and serve as an introduction to each of the 12 homework assignments. Exercises are not graded, but solutions are provided to enable you to self-evaluate your solutions.
- ◆ *Homework* – consists of 12 assignments. As mentioned above, each is introduced by an exercise that presents a similar learning experience. Each homework assignment is worth 50 points (or 600 points total out of a total of 1250 points for the semester), so together they are a significant part of your letter grade (see Grading Standards and Letter Grade Earned and Point Spread on page 12).
- ◆ *Two Part Term Project*
 - Part I – The goal of Part I is to gain familiarity with landforms, both natural and manmade, and the physical elements that make up drainage and stormwater management systems. Part I will be assigned at the beginning of the semester and will be due at the 11th week (March 26th).
 - Part II – Part II will be a project that combines grading, drainage, and stormwater management knowledge, skills, and abilities with your design studio work. Part II will be assigned later in the semester after you have acquired the necessary knowledge, skills and abilities (KSAs) to move forward.
- ◆ *Incremental delivery of course content* – To minimize the need to make gross leaps in understanding, every effort is made to make the flow of information is as *incremental* as possible.
- ◆ *Reading Assignments* – The Week-By-Week Course Outline below includes a required reading assignment from the required course reader each week. In addition to the course reader reading assignments, it will be essential that you read *and comprehend* all course handouts. Knowledge of the subjects covered in the handouts will be tested on the midterm and final exams.
- ◆ *Field Trip* – An on-campus field trip of about one-hour in duration will be scheduled for the early part of the semester. The exact date will be determined based on the weather; the starting time will be within the first twenty minutes of class start time.
- ◆ *Guest Lecturer* – Date, time, and subject to be announced.
- ◆ *Exams* – Reinforcement and validation of learning is achieved through the administration of a mid-term and final examination. The exam format is multiple-choice, true/false, and graphic response (meaning you’ll be required to draw your solution graphically). Exams serve two purposes:
 - Reinforcement of learning. Exams oblige you to review and synthesize what has been previously learned.
 - Validation. The *psychometric* aspect of an exam. It measures what you have learned, highlighting areas of strength while at the same time exposing areas of weakness. It also reveals how effectively the teacher/student relationship is functioning

Rigor

- ◆ Foundational Course Structure – This means that each skill area mastered serves as the foundation for what is to follow. If a skill area is not mastered, there will be a gap in your knowledge that will likely cause difficulties later on.
- ◆ Quantity of Information – Topographic Design is an *information intensive* course.
- ◆ Pace of Course – To achieve the required learning outcomes, the course is fast-paced.

Students who diligently apply themselves typically come away with a profound sense of accomplishment. Most importantly, the knowledge, skills and abilities learned in ARCH 534 will continue to play an increasingly vital role in solving design problems in the future.

SYMBOLS USED IN THIS SYLLABUS

The letters and symbol shown below are used in the Week-By-Week Course Outline below to denote and emphasize exercises, homework assignments, term project milestones, and reading assignments in the course *Reader*.

HW Homework Assignment

EX Exercises

TP-I Term Project Part I

TP-II Term Project Part II

 Reading Assignments

CRITICAL DATES TO KNOW

Week 1, January 8th Term Project Part I assigned

Week 3, January 25th (Friday) is the last day to register and add classes or drop a class without a “W”

Week 7, February 19th Mid Term Exam

Week 10, March 12th Week of Spring Break – No Classes this week

Week 11, March 26th Term Project Part I due for hand-in

Week 12, April 5th is the last day to drop this class with a mark of W

Week 14, April 16th Term Project Part II due for hand-in

Week-by-Week Course Road Map begins on next page

WEEK-BY-WEEK COURSE ROAD MAP**WEEK 1 – JANUARY 8th**

- ◆ Introduction, class roster, name placards
 - How your letter grade is determined
 - Calculator and drafting gear requirements
 - Course Reader and weekly reading assignments
 - About homework assignments and exercises
- ◆ Why we grade and the language of grading – *Grading is Design!*
- ◆ Introduction to topographic maps, basic contours, and contour signatures
- ◆ How contours behave when they encounter a vertical object such as a curb or a wall
- ◆ Flat versus level – what's the difference?
- ◆ Drainage – all surfaces must slope to drain; drainage is implicit in grading design
- ◆ Methods for plotting whole number contours
- ◆ Introduction to grid coordinate systems and engineering stationing

TP-I Assign Term Project Part I, review problem statement**EX Exercise 1, Basic Contour Signatures and Contour Interpolation****HW Homework 1, Plotting Whole Number Contours Through Interpolation**

 **Reading – Read this syllabus in its entirety; read all materials handed out in class; read Chapter One Preview**

WEEK 2 – JANUARY 15th

- ◆ Turn in Homework 1 and review assignment
- ◆ The natural landscape: Dynamics of earth building processes and plate tectonics
- ◆ Review course syllabus
- ◆ Introduction to the three grading formulas (also refer to desk placard): Grade, Difference in Elevation, and Length
- ◆ Keynote Presentation, grading and drainage overview
- ◆ Basic soils and Soil classification systems
 - Agricultural
 - Engineering
 - Geologic
- ◆ Soil testing and how to take a soil sample and
- ◆ How soil pH impacts nutrient availability

EX Exercise 2, Familiarization with Contours**EX Exercise 3, Introduction to Grading Formulas****HW Homework 2, Using the Grading Formulas**

 **Reading – read all materials handed out in class; Reader, pages 25 to 29; then pages 31 to 40 (to middle of page 40), How to Plot Whole Number Contours.**

WEEK 3 – JANUARY 22nd

- ◆ Return Homework 1; hand out solutions
- ◆ Turn in Homework 2, review assignment
- ◆ Review of the three grading formulas
- ◆ Contours versus spot elevations
- ◆ Where to use spot elevations, where not to use them
- ◆ Plotting contour lines on plane surfaces
- ◆ How contours are revised
- ◆ Existing contours and revised contours

EX Exercise 4, Plotting Whole Number Contours on Plane Surfaces

EX Exercise 5, Revising Contours

HW Homework 3, Plotting Whole Number Contours on a Plane Surface

 **Reading – read all materials handed out in class; Reader pages 40 to 51**

WEEK 4 – JANUARY 29^h

- ◆ Return Homework 2 and hand out solutions
- ◆ Turn in Homework 3 and review assignment
- ◆ Hand out solutions to Homework 2
- ◆ Turn in Homework 3 and review assignment
- ◆ Introduction to cross slopes and the cross-slope formula

EX Exercise 6, Cross Slopes on Plane Surfaces

EX Exercise 7, Using Contour Run to Determine Vertical Height or Depth

EX Exercise 8, Calculating the Length of a Contour Run

HW Homework 4, Cross Slopes, Revising Contour Lines, & Calculating Spot Elevations

 **Reading – read all materials handed out in class; Reader pages 52 to 57**

WEEK 5 – FEBRUARY 5th

- ◆ Return Homework 3 and hand out solutions
- ◆ Turn in Homework 4 and review assignment
- ◆ Keynote presentation – miscellaneous grading
- ◆ Freeboard, what it is and how it is used
- ◆ Role of landscape architect, civil engineer, and grading contractor in the execution of a grading solution

EX Exercise 9, Grading a Simple Parking Lot

HW Homework 5, Grading Problems, Various

 **Reading – read all materials handed out in class; Reader pages 58 to 80**

WEEK 6 – FEBRUARY 12th

- ◆ Return Homework 4 and hand out solutions
- ◆ Turn in Homework 5 and review assignment
- ◆ Setting finish floor elevations
- ◆ Use of steps in the landscape
- ◆ Disabled person ramp design
- ◆ Introduction to retaining walls
- ◆ Introduction to design of horseshoe swales
- ◆ **Mid-term exam** next week; in-class review of what mid-term exam will test

HW No homework assignment this week – use time to study for Mid-Term

EX Exercise 10, Designing Horseshoe Swales

EX Exercise 11, Grading a Level Sports Field, a Road, and Disabled Person Ramp

 **Reading** – read all materials handed out in class; *Reader* pages 83 to 92

WEEK 7 – FEBRUARY 19th

- ◆ **Mid-Term Exam** (covers all material covered 1st through 6th week), time one-hour
- ◆ Introduction to drainage design with Keynote Presentation
- ◆ Drainlines and calculating cover and minimizing head loss
- ◆ Drainage intake structures and discharge structures
- ◆ Drainage discharge structures and how to differentiate from intake structures
- ◆ Bench drains, down drains, wattling and other erosion control techniques
- ◆ Endwalls and headwalls

EX Exercise 12, Minimizing Head Loss at Drainage Structures, Setting Invert Elevations

EX Exercise 13, Cover Over Drainlines

HW Homework 6, Intermediate Grading Problems

 **Reading** – read all materials handed out in class; *Reader* pages 95 to 119

WEEK 8 – FEBRUARY 26th

- ◆ Return Homework 5 and hand out solutions
- ◆ Turn in Homework 6 and review assignment
- ◆ Head loss in drainage systems and setting invert elevations
- ◆ Mass gravity retaining structures (gabions)
- ◆ Sub drainage using perforated pipes
- ◆ Trail design

EX Exercise 14, Ubehebe Crater Trail Design

EX Exercise 15, Endwall Grading and Setting Invert and Rim Elevations

HW Homework 7, Advanced Grading Problems

 **Reading** – read all materials handed out in class; *Reader* pages 119 to 126

WEEK 9 – MARCH 5th

- ◆ Return Homework 6 and hand out solutions to Homework 6
- ◆ Turn in Homework 7 and review assignment
- ◆ Secondary escape of stormwater
- ◆ Rational Formula for sizing drainlines
- ◆ Mass gravity retaining structures (gabions)
- ◆ Introduction to stormwater management
- ◆ Regulatory:
 - National Pollution Discharge Elimination System (NPDES)
 - Standard Urban Stormwater Mitigation Plan (SUSMP)
 - Stormwater Pollution Prevention Plan (SWPPP)
 - City of Los Angeles Stormwater Program
- ◆ Introduction to Best Management Practices (BMP)
- ◆ Introduction to Low Impact Design (LID)
- ◆ On-site storage of stormwater
- ◆ Retention versus detention of stormwater
- ◆ Infiltration of stormwater: bio-swales and permeable paving
- ◆ First flush runoff and debris separators

EX Exercise 16, Rational Method

EX Exercise 17, Curb Cut at Driveway

EX Exercise 18, The Earthen Dam Contour Signature

HW Homework 8, Rational Method, Pool Deck, and Parking Lot Grading Design

 **Reading – read all materials handed out in class; Reader pages 129 to 151**

WEEK of MARCH 12th Spring Break – NO CLASS

WEEK 10 – MARCH 19th

- ◆ Return Homework 7 and hand out solutions
- ◆ Turn in Homework 8 and review assignment
- ◆ Introduction to erosion control
- ◆ Keynote presentation – stormwater management
- ◆ Wetlands and sustainability
- ◆ Sediment control
- ◆ Design of retention basins based on cubic foot capacity
- ◆ Earthen dam and embankment design; contour revisions for earthen dams and embankments
- ◆ Designing a retention basin on a flat site based on cubic feet of water
- ◆ Designing a retention basin on a sloping site

EX Exercise 19, Retention Pond Based on Existing Swale

EX Exercise 20, Retention Pond Based on Gently Sloping Site

HW Homework 9, Advanced Rational Method, Design of Retention/Retention Structures

 **Reading – read all materials handed out in class; in Reader page 153 to page 165**

WEEK 11 – MARCH 26th

- ◆ Return Homework 8 and hand out solutions
- ◆ Turn in Homework 9 and review assignment
- ◆ How to prepare a slope analysis map
- ◆ Defining watershed areas
- ◆ Designing to specific grade limits
- ◆ Aesthetics of grading

EX Exercise 21, Defining a Watershed Area and Slope Analysis

EX Exercise 22, Defining a Large-Scale Watershed Area

HW Homework 10, Defining a Large-Scale Watershed Area

TP-I Term Project Part A Hand-in

 **Reading – read all materials handed out in class; in Reader page 167 to page 176 to Velocity of Flow Criteria**

WEEK 12 – APRIL 2nd

- ◆ Return Homework 9 and hand out solutions
- ◆ Turn in Homework 10 and review assignment
- ◆ Grading engineering requirements, utilities, permits, and codes
- ◆ Cut and fill calculations
 - Barrow Pit Method
 - Average End Area Method
 - Planimeter (Contour) Method
 - Demonstration of polar planimeter and use of CAD software to measure areas of non-geometric shapes
- ◆ Compaction of soil, measuring compaction
- ◆ Introduction to performing an elevation survey

EX Exercise 23, Differentiating Between Cut and Fill in Plan and Section

EX Exercise 24, Calculating Cut and Fill Three Ways

EX Exercise 25, Elevation Survey

HW Homework 11, Cut and Fill Calculations

 **Reading – read all materials handed out in class; final Reader assignment page 177 to page 193**

WEEK 13 – APRIL 9th

- ◆ Return Homework 10 and hand out solutions
 - ◆ Turn in Homework 11 and review assignment
 - ◆ Geotechnical – interpreting soil borings
 - ◆ Soil modeling, mounding, and land sculpting
 - ◆ Keynote Presentation – how a golf green is constructed
- TP Term Project Part II Hand-in (Part II will be returned at the Final Exam)**

EX Exercise 26, an Interactive Exercise – Grading a Tot Lot

EX Exercise 27, Designing an Alternate Path of Travel Using a Disabled Person Ramp

EX Exercise 28, an Interactive Exercise – Screening with an Earthen Berm

HW Homework 12, Grading a Croquet Court (Geotechnical Problem)

 **Reading – read all materials handed out in class**

WEEK 14 – APRIL 16th

- ◆ Return Homework 11 and hand out solutions
- ◆ Turn in Homework 12 and review assignment
- ◆ Golf course design
- ◆ Capillary action and how it affects the movement of water in soil

EX Exercise 29, LARE Simulation – Grading a Playground

EX Exercise 30, a Timed Exercise – Site Evaluation

EX Exercise 31, an Interactive Exercise – Road Cut Through Berm

 **Reading – read all materials handed out in class**

WEEK 15 – APRIL 23th

- ◆ Return Homework 12 and hand out solutions
- ◆ Final Exam prep – review of what will be tested
- ◆ Horizontal and vertical curve design

EX Exercise 32, Dress Rehearsal for Graphic Response Section of Final Exam

EX Exercise 33, Horizontal Curve Design

EX Exercise 34, Timed Exercise – Grading a Hilltop Pad

EX Exercise 35, Road Design

- ◆ Course wrap-up

WEEK 16 – FINAL EXAMINATION – ASSUMED DATE MAY 7TH (Time Two-Hours; location TBA)**GRADING STANDARDS**

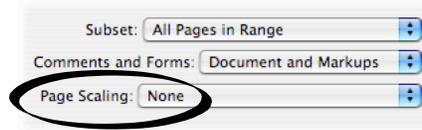
Homework Assignments, twelve, each worth 50 points	600	points
Mid-term Exam	100	points
Final Examination	200	points
Term Project Part I	100	points
Term Project Part II	250	points
Total Points Possible for Semester	1250	Points

POINT SPREAD USED TO DETERMINE LETTER GRADE

Grade	From	To	Grade	From	To
A+	1250	1215	C	998	963
A	1214	1179	C-	962	927
A-	1178	1143	D+	926	891
B+	1142	1107	D	890	855
B	1106	1071	D-	854	819
B-	1070	1035	Fail	< 818	

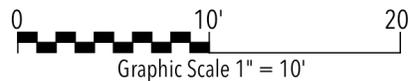
PRINTING – PLEASE READ THIS CAREFULLY

- ◆ PDF Scaling Issue – Many handouts will contain drawn-to-scale graphics. To ensure that the original scale is maintained, **it is essential that they be printed at full scale**. Adobe's PDF Reader defaults to *Fit to Printable Area*, which arbitrarily reduces the scale of the printed page by some arbitrary amount, which in turn makes it impossible to solve graphic problems correctly.
- ◆ Print Settings – In order to print full scale, select **None** as the setting for Page Scaling in the printer's print dialog as shown below (Mac OS example shown, Windows is similar).



Scale Setting in Print Dialog

- ◆ Correct Scale Responsibility – It is your responsibility to ensure that you are printing at the correct scale. If your homework is not printed at the correct scale, you could lose as many as 50 points for the assignment!
- ◆ Verification – To confirm that handouts containing graphic images have been printed at the correct scale, a graphic scale similar to that shown below is included on all drawn-to-scale handouts. Use your engineer's scale to verify.



Typical Graphic Scale for 1" = 10'

- ◆ Suggestion – To avoid a false start, print the first page only and verify that the scale is correct before continuing to print the rest of the pages.
- ◆ Adobe occasionally issues security patches for its software. When you install a patch, Page Scaling will revert back to the default *Fit to Page* setting. Therefore, it will be necessary to re-verify that Page Scaling is set to *None* after installing any patches or updates.
- ◆ Hard Copy Printing Requirement – It is a requirement that all exercises posted on Blackboard be printed on paper as a hard copy for use in class before class begins at 9:00 AM. Having the exercise on a laptop, tablet or other mobile device, is not an acceptable substitute.
- ◆ Printing Optional – Some files posted on Blackboard will be marked with a diamond symbol (◊). Such documents are Printing Optional. If you decide not to print out hard copies, you are still responsible for reading the documents. (content may be tested on the mid-term or final exams.)
- ◆ Portable Document Format Files – All files posted on Blackboard will be saved as PDFs to facilitate viewing and printing.
- ◆ Ledger Sized Documents – Some exercises and homework assignments will be output as 11" x 17" (ledger) pages. For convenience, all ledger-sized documents will be printed by USC and handed out in class

ORGANIZING HANDOUTS, HOMEWORK AND EXERCISES

Students are strongly encouraged to purchase a three-inch (3-inch) 3-ring binder for this class within a week or two of the beginning of the semester to keep the large volume of handouts that will accumulate (expect to fill the binder). In setting up your notebook, give thought to its organization. Many students have found that keeping all of the exercises and

homework assignments in numeric order works well. Keeping general informational handouts organized either by week or by subject is also helpful. Retain completed homework assignments and exercises for future reference.

SAVE ON PRINTING

The purchase of an inexpensive monochrome laser printer will save time and money on printing over the long haul. Laser printers are faster than inkjet printers (typically 30 plus pages per minute), and they avoid the hassle of dealing with clogged ink jet nozzles. They also generally reduce printing costs (under 3 cents a page), so can at least partly offset their original cost. Several good quality laser printers are available for as little as \$75. Some manufacturers offer refurbished units and special promotional deals from time-to-time at even lower prices – check manufacturers' Web sites for refurb and deals. Also consider a used laser printer.

REQUIRED READING AND COURSE READER

This is a repeat of information you received before the beginning of the semester. Having your own personal copy of the Course Reader is a requirement of the course. The Reader is available from University Readers, <www.universityreaders.com> or by phone at 800-200-3908, extension 503. The selling price has typically been under \$35. Reading assignments begin at the second week. Hopefully you already have your Reader. If not, order it as soon as possible.

- ◆ Reading Assignments – It is imperative that reading assignments be completed *during the week immediately prior to the next class meeting*. Reading is assigned to provide a context for the material currently being covered. Keeping up with reading assignments will ensure that you have a thorough understanding of the subject currently being taught.
 - ◆ White Papers – During the semester, a number of white papers will be posted for download on Blackboard. Though printing is optional, consider printing these out for later reference. The white papers are intended to supplement the Course Reader by adding relevant content not contained in the Reader. Consider these as part of your reading assignments.
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OPTIONAL RECOMMENDED READING AND REFERENCE RESOURCES

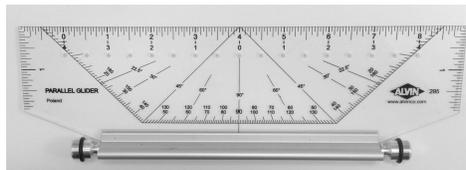
- ◆ *Time-Saver Standards for Landscape Architecture* by Charles Harris and Nicholas Dines. Publication Date: February 4, 2002; ISBN-10: 0071357610; ISBN-13: 978-0071357616, Edition 1. Amazon sells this book new for approximately \$150; used copies are usually available for less. This is the one book that should be in every landscape architect's library.
- ◆ *Site Engineering, 6th edition*, by Steven Strom, FASLA, Kurt Nathan, MS, PE, and Jake Woland, ASLA, published by Wiley. ISBN 978-1-118-09086-2 (cloth-bound version). Site Engineering is arguably the most thorough book on the subject of grading, drainage and stormwater management. Many find it too technical, but it is complete.
- ◆ *Landforming: An Environmental Approach to Hillside Development, Mine Reclamation and Watershed Restoration*, Aug 3, 2007, Horst J. Schor and Donald H. Gray. Horst Schor is the originator of landforming as we know it today.
- ◆ *The Devil in the White City*, a novel by Erik Larson based on real-life events. This is the story of three men's obsessions with the Chicago World's Fair of 1893 (Columbia Exhibition), one is its architect, one its landscape architect, and the other a murderer. The *Devil in the White City* draws the reader into a time of magic and majesty, made all the more appealing by a supporting cast of real-life characters, including architects Daniel Burnham and Louis Sullivan, landscape architect Fredric Law Olmstead, Buffalo Bill, Susan B. Anthony, Thomas Edison, and others. If you've read *Devil in the White City*, you already know why it is being recommended here; if you haven't read it, reading will lend a real-

world perspective on site grading, site drainage, and stormwater management and Olmstead's grading prowess.

REQUIRED DRAFTING AND GRAPHICS GEAR

Tools noted with this symbol (\approx) are required

- ◆ Pencils \approx – Push-button or side-click style pencils are a good choice because they don't require sharpening or pointing. For a light touch 0.5 mm; medium touch; 0.7 mm; heavy touch; 0.9 mm; use either a H or F lead, nothing harder.
- ◆ Eraser \approx (Magic Rub or other vinyl type eraser is highly recommended; end of pencils erasers not recommended).
- ◆ Engineer's scale \approx (an architect's scale is not required, but may be for other courses you'll take).
- ◆ 12" or wider roll of sketch paper \approx (also referred to as trace)
- ◆ Drafting tape or dots \approx
- ◆ Parallel glider having 10-inch blade \approx . This tool is will become your go-to all-purpose drafting tool. It's available from Amazon and other resellers for less than \$20. Enter *Alvin 295 Professional Parallel Glider 10 inches*.



Ten Inch Alvin Parallel Glider

- ◆ Triangles, both 30°/60° and 45° \approx
- ◆ Circle template or templates (optional)
- ◆ Erasing shield (optional; allows you to do precision erasures without affecting adjacent line-work)

Beginning at the second meeting, in-class exercises will be assigned that will require a calculator and drafting gear. A drawing board and/or parallel bar are not required. Nonetheless, be aware that desktops in the classroom have Formica laminate tops. If you dislike drawing over laminate, bring a sheet of fine textured cardboard that can accommodate an 11" x 17" drawing.

Use of ink is strongly discouraged. Applies to exercises, homework assignments, and the term project. Ink includes fountain pens, all types of technical pens, felt tip markers, ballpoint pens, rollerball pens, or gel pens. Here's why: First, ink isn't necessary. A suitable pencil will produce a crisp, clear image. Second, errors, which are inevitable, are difficult or impossible to erase. Also, when used in drafting, ink in its liquid form (i.e., technical pens) will slow your work because it needs time to dry. Unless you have a lot of experience, it tends to run under straight edges such as triangles. Use pencils.

CALCULATOR REQUIREMENT

In addition to the above-mentioned Required Drafting and Graphic Gear, a calculator is also required. Review the email you received prior to the beginning of the semester that provided specific information on calculators. If you did not receive this email, see me before the end of this first meeting.

HELP AND OFFICE HOURS

How to get help on exercises, homework assignments, or either part I or II of the term projects:

Office Hours – Taking advantage of office hours is the most convenient and effective way to get help. Bring in your homework or term project. Although that I won't solve a given problem for you, I will be glad to critique your solution and/or point you in the right direction as appropriate. *This seemingly simple choice could save you a lot of points on any given homework assignment or your term project.* Office hours are available on a first come, first served bases.

Time – All Tuesdays from 7:00 am to 8:45 am and from 12:00 pm to as long as students require help. The office is located in Watt Hall, room 339a, which is adjacent to the Landscape Corner. Additional office hours can be scheduled on an as-needed basis. Complementary tutoring is also available by prior arrangement.

In Addition to Office Hours – Help is just a phone call, text, or email away! If you wish to get help via a phone call, please have a clear idea of what you want to ask before calling. If I am available I can usually answer your question immediately. If I'm not available to take your call, leave a message. Say your name and phone number distinctly and slowly at the beginning of the message and I'll do my best to return your call in a timely manner. For those using an iPhone, FaceTime is an extremely useful tool for getting help because the camera can be used to show your work and my graphic response. You may also ask for help via email or a text message. Sending an email message supported by an attached graphic image is also an effective way to get questions answered. For graphic images, scanning is preferred because it preserves scale. If you send a photo, include an engineer's scale in your image so I can adjust the scale of the image. Be aware that due to distortion inherent in photographic images, the scale still won't be exact, but it will likely be adequate for the purpose of answering your question. Save scans or photos in any one of these formats: PDF, PNG, TIFF, or JPEG. See page 1 for contact info.

CLASS PARTICIPATION AND ASKING QUESTIONS

You are encouraged to ask questions in class at any time as long as your question is relevant to the current discussion. That said, if your question reveals that you have not done the assigned reading, I may elect to defer response until break or after class.

WORKING WITH OTHERS AND STUDY GROUPS

Now that I know, I can help others know, and in doing, increase my own understanding. This old cliché is so true. Studying together, either in pairs or in small groups, is highly recommended *as long as you understand that all I final work must be your own work, not that of another student or a group.* You only benefit when you do the work yourself. If outright copying is detected (believe me, it's always obvious) those doing the copying as well as those permitting it risk losing some or all of the points for any given assignment. Keep in mind that copying is in direct violation of USC's Statement on Academic Conduct which is rigorously enforced (see Academic Conduct, Plagiarism, below).

STATEMENT ON STUDENTS WITH DISABILITIES

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in STU 301 and is open 8:30 A.M.–5:00 P.M., Monday through Friday. The phone number for DSP is (213) 740-0776.

Go to <<https://policy.usc.edu/scampus-part-c/>>. SCampus consists of six sections:

Section 1 – Class Notes Policy

Section 2 – Disputed Academic Evaluation Procedures

Section 3 – General Academic Petitions

Section 4 – Timeline for Degree Programs

Section 5 – Student Education Records

Section 6 – Falsification of Financial Aid Information

It is your responsibility to be aware of the specific policies contained within this document.

ACADEMIC CONDUCT

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Section 11, Behavior Violating University Standards <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct/>. Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the Office of Equity and Diversity <http://equity.usc.edu/> or to the Department of Public Safety <http://capsnet.usc.edu/departments/departments-public-safety/online-forms/contact-usc>. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. The Center for Women and Men <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

WITHDRAWALS

Late or Retroactive Withdrawal from One or More Courses

The final deadline for dropping one or more courses is the end of the 12th week of classes or its equivalent for a given term. To officially drop a course, the student must process a drop form through the Registration Department or drop through Web registration and secure a Registration Confirmation as proof of having dropped. This 12-week time period is considered generous. CAPP will entertain petitions for exceptions to the drop deadline when the student has documented extenuating circumstances or the student was unable to evaluate his or her level of performance prior to the drop deadline.

Withdrawal petitions based on medical reasons require accompanying documentation from the student's physician. It is assumed that such requests will usually involve a complete withdrawal from all classes. If the request involves less than cancellation of the whole academic program, a complete explanation must be provided of courses to be dropped or retained, plans for completion of the remaining courses and an explanation of why the student's medical condition allowed completion of some courses but not all. In general, if a student is healthy enough to participate in campus activities outside of class, he or she is considered responsible for all courses undertaken. In all cases, a petition to drop a course must include a statement from the instructor indicating the quality of work and dates of attendance.

A final word of caution: CAPP almost never approves requests for late withdrawals if the student has taken the final exam in a course. However, a student should not take this word of caution as an indication that she or he should purposefully miss a final exam because of a pending petition to drop. A student who misses a final exam because of a pending petition and then discovers that the petition was denied, will surely be in a worse position because the final exam grade will be calculated as an "F."

ACCREDITATION

Information about landscape architecture education and accreditation in the United States may be found on-line at <http://www.asla.org/Education.aspx>.

Disclosure – Since accreditation is a recurring fact of academia, I am required by the university to scan homework assignments, term projects, and both the midterm and final exams as part of the required resource needed for future accreditations. To comply with this requirement, I will scan the highest score (referred to as high pass), the median score (mid pass), and the lowest score (low pass). The scanned files will be transmitted to the Department for archiving.

RELIGIOUS HOLIDAYS

The University of Southern California recognizes the diversity of our community and the potential for conflicts involving academic activities and personal religious observation. The University provides a guide to such observances for reference and suggests that any concerns about lack of attendance or inability to participate fully in the course activity be discussed at the start of the term. As a general rule, students will be excused from class for these events if properly documented and if provisions can be made to accommodate the absence and make up lost work. Constraints on participation that conflict with adequate participation in the course and cannot be resolved to the satisfaction of the faculty and the student need to be identified prior to the add/drop date for registration. After the add/drop date the University and the School of Architecture shall be the sole arbiter of what constitutes appropriate attendance and participation in a given course.

SUPPORT SYSTEMS

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the American Language Institute <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs at http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, USC Emergency Information <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

SCHOOL OF ARCHITECTURE ATTENDANCE POLICY

A student may miss the equivalent of one week of class sessions. In the case of ARCH 534, this means THREE excused absences are permitted without directly affecting the student's grade and ability to complete the course. An excused absence is a confirmed personal illness, family emergency, or religious holiday. For each absence over the allowed number, your grade can be lowered by 1/3-letter grade. If additional absences are required for a personal illness, family emergency, pre-approved academic reason/religious observance, you must discuss the situation with your faculty member immediately.

Any student not in class within the first 10 minutes is considered tardy, and any student absent (in any form including sleep, technological distraction, or by leaving mid class for a long bathroom/water break) for more than 1/3 of the class time can be considered fully absent. If arriving late, a student must be respectful of a class in session and do everything possible to minimize the disruption caused by a late arrival. It is always the student's responsibility to seek means (if possible) to make up work missed due to absences, not the instructor's, although such recourse is not always an option due to the nature of the material covered.

SUSTAINABILITY INITIATIVE

The School of Architecture has adopted the 2010 Initiative for Sustainability. Solutions to design problems must engage the environment in a way that dramatically reduces or eliminates the need for fossil fuel.

DUE DATES

All homework and both parts of the term project are due at the beginning of class on the dates noted on their respective assignment pages. Late work will be penalized by a point reduction of 10% *per week* (for example, a homework assignment that could have earned a maximum of 50 points will get a score of 45 points for being one-week late).

ASSIGNMENT SUBMISSION IN CASE OF ABSENCE

If you are unable to attend class for any reason, you are still responsible for turning in your work on the date it is due. Choices in order of preference: 1) have another person submit your work on your behalf; 2) scan your work, save it as a PDF, PNG, JPEG, and attach it to an email addressed to me at the email address shown on the first page (using a digital photo is not acceptable in submitting homework because of distortion and the drawing not being to scale); or 3) you may mail the work to me at the address shown on the first page. Make sure your name appears in the space provided at the top of the assignment. Also, please staple your work prior to hand-in (please do not fold and tear the corner of the pages as a substitute for stapling). If you do not own a stapler, one will be available at the front of the classroom for your use before the beginning of class.

LEGIBILITY

All work must be legible. If I can't read either text or numbers, I can't fairly grade your work. This also applies to line work where you are required to provide a graphic solution, such as contours. So, legibility requires reasonably good lettering and hardline graphics. Writing and graphics that can be easily read depend on using an appropriate hardness of lead. H, F, (or even B if you have a very light touch) leads are recommended, and yield good contrast between writing and the white background of bond paper. Do not use a lead harder than H – for example, avoid 2H, 3H, 4H, etc. Illegible answers will be marked as incorrect (no benefit of the doubt).

PROFESSIONAL LICENSURE

The focus of Topographic Design is grading, drainage and stormwater management as practiced by professional landscape architects. ARCH 534 is not intended to specifically prepare you to sit for the licensing exam, nevertheless, the material presented corresponds to what the exam tests. In other words, ARCH 534 will prepare you for the exam in terms of your knowledge, skills, and abilities.

COURSE ENHANCEMENT AND ENRICHMENT

Free Magazines – There are two high quality online magazines relevant to ARCH 534: *Stormwater* and *Erosion Control*. To receive a free online subscription, see Web addresses below.

- ◆ For Erosion Control: <http://www.erosioncontrol.com/subscription/erosion-control-subscription-form-19327.aspx>
- ◆ For Stormwater: <http://www.stormh2o.com/subscription/stormwater-subscription-form-3431.aspx>

PERSONAL PROBLEMS

Problems happen. If you are experiencing personal problems that are adversely affecting your performance, let me know. There are almost always means to accommodate or mitigate them.

INVOLVEMENT IN YOUR PROFESSIONAL ORGANIZATION

- ◆ About the American Society Landscape Architects (ASLA) – Founded in 1899, the ASLA is the national and international professional association representing landscape architects. With over 17,000 members, the ASLA promotes the profession and advances its practice through advocacy, education, communication, and fellowship. The ASLA also works to increase public awareness of and appreciation for the profession and its contributions to quality of life and the environment.

California has four ASLA chapters. Your local chapter is the Southern California Chapter, which includes the counties of Los Angeles, Orange, Riverside, San Bernardino, Ventura, Santa Barbara, San Luis Obispo, and Kern. Current Chapter membership of the is over 700. It ranks as the second largest membership in the United States.

- ◆ Consider Becoming a Student ASLA Member – Because you are enrolled in an accredited landscape architecture program leading to a MLA, you are eligible to join the ASLA as a Student Member. The cost is \$55 for the first year. Membership includes a one-year digital subscription to *Landscape Architecture Magazine*. Regardless of whether you are a student member or not, all students are encouraged to attend ASLA meetings and events both on and off campus. Many meetings are held in downtown Los Angeles, so they're easy to get to from campus. These meetings give you direct access to those already in the field, and, perhaps more importantly, to those who can offer internships or positions in firms. Plus, getting your name *and your face "out there"* gives you a definite advantage as an emerging professional.
- ◆ If you have any questions about become an ASLA Student Member, don't hesitate to ask me, or contact the Chapter's Student Liaison, Nick Straabe, ASLA. Nick is the Specification Manager for Hunter Irrigation. His mobile number is 714-292-8944, or you can reach him at 800-733-2823. His email address is <nick.straabe@hunterindustries.com>. I'll also let you know about upcoming Chapter meetings, especially those that are in the downtown Los Angeles area, as well as other events that are likely to be of interest.
- ◆ I also strongly encourage you to join your student chapter at USC.