INTRODUCTION
The manipulation of landform is at the core of traditional practice, and a skill profoundly necessary to invent, represent, critique, evaluate and implement design decisions on the land. Most, if not all landscape architectural designs involve changes in the landform on a range of scales. These manipulations of the landform have significant spatial (and visual) consequences affecting our experience. They also affect the complex nested and interrelated systems that make up what traditionally is called "landscape", "site", or place. Drainage, erosion, deposition and microclimate are prominent examples of the processes and protagonists that are involved.

While landform is changing in a continuous process (often at odds with everyday perceptions of the stability and immutability of the earth's surface) that predates any human activity on this planet, humans now have the ability and means to alter and shape the earth’s surface to their requirements on an increasingly massive scale, with equally massive consequences. Some of these changes are intentional effort and part of a design or planning process, others are the unintended side effects of other land use or manipulation decisions. In either case it is critical to understand the methods and techniques as well as the consequences of changes to the landform or any of the forces or factors that affect it.

CONTENT
This class will focus on manipulations of land, water and microclimate, as essential elements landscape architects have to understand and master. It will emphasis the theory and practice of manipulating the land for functional and aesthetic results. This will include characteristics and processes of topography, grading design, drainage, effects of grade changes on natural and non-natural systems, and others. The course utilizes lectures, demonstrations, labs, field trips and weekly exercises.

There are three areas of knowledge and skills to be covered that form the basis for the course learning objectives:

- **Functional and Aesthetic Relationships** - Development of a critical understanding of landform manipulation as a design tool to intentionally change and create spaces that affect the experience of users.
- **Professional and Office Standards** - Development of a critical understanding of professional licensing, and the representational and technical conventions intrinsic to the manipulation of landform and drainage patterns.
- **Ecological Performance** - Development of a critical understanding of the effects of landform manipulation on human and non-human systems, such as artificial and natural drainage systems.

This class attempts to not just build the skills necessary, but to develop a critical understanding of landform as an ongoing process interlaced with a vast range of nested systems that is commonly referred to as "landscape" with the goal of creating changes that are "regenerative" and "sustainable".
RELATED COURSES
This course is the first course in a required sequence of courses addressing skills and issues of technology and construction within the field and profession of landscape architecture. Together with Landscape Architecture Materials and Methods (LDAR 6631) and Computer Applications (LDAR 6641) the course forms part of the core curriculum that provides a basis of knowledge, skills and abilities students need to be successful in future courses and the practice of landscape architecture.

This course will be taught concurrently with Computer Applications (LDAR 6641) to create opportunities to integrate AutoCAD software skills with this technology course. Therefore, students must take Computer Applications (LDAR 6641) concurrent with this course, unless the instructor has waived the Computer Applications course.

OUTCOMES
This is an application and skill-building course, incorporating theoretical considerations, critical thinking and design activities. Weekly exercises are meant to provide an opportunity to practice these skills and gain confidence using them. By the end of the semester students should be able to:

Functional and Aesthetic Relationships
- Manipulate grades to create spatial and aesthetic relationships.
- Manipulate grades to change or create functional relationships.
- Demonstrate the basic processes and skills required to address site engineering issues and related technical problems in an appropriate and critical manner sensitive to the site and the values projected onto it.

Professional and Office Standards
- Produce drawings that meet professional office standards. (*Including lettering, line weights and drawing conventions.*)
- Demonstrate an understanding of the site engineering requirements necessary for professional licensing.
- Demonstrate rigor and an appreciation for accuracy and thoroughness in their work.

Ecological Performance
- Demonstrate an understanding of how the manipulation of grades can change ecological performances.
- Demonstrate an understanding of the complex decisions required to sensitively place uses and elements on the land to protect or improve valuable natural systems.

ASSESSMENT
Assignments and a final project will be used to access student learning in this course. Since this is a class concerned with skill-building, homework is considered "practice" of the design, engineering and graphic skills you need to successfully perform as a landscape architect. The expectation is to produce drawings that meet professional office standards. Homework will be the primary tool to evaluate your knowledge and progress. Homework assignments will consist of application problems relating to the readings and classroom discussions. These are normally of one to two weeks in duration. Assignments will be marked and returned with comments and a grade. The homework will be graded according to the criteria stated in the assignment rubric.

Assignments shall be turned in no later than 5:00 PM on the day they are due. Late assignments will be marked down one letter grade. If an assignment is not sufficiently well executed, it will be returned with a "REDO" comment. Please set up an appointment as soon as possible to get an explanation. If you choose not to meet for an explanation or redo the assignment you will be given your original grade. "Redo" assignments can only improve a maximum of one full letter grade from the original grade posted and must be turned in by the end of the next class to be considered for a new grade.
Homework assignments are to be each student’s original work. While you may work together on process, each assignment must demonstrate your original work and calculations. Traced assignments will earn a failing grade.

The final grade for the course will be based on the following distribution. *(This is subject to change as the semester progresses. If adjustments are made students will be notified.)*

80% Assignments
20% Final Project

Grades for all assignments will be given points on a numerical scale of 100. The letter grade will correspond to the numerical grade as follows:  A=95 or greater; A- = less than 95 to 90; B+ = less than 90 to 85; B = less than 85 to 80; B- = less than 80 to 75; C+ = less than 75 to 70.

These letter grades are based on the LA Department grading system that is defined as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>A+</td>
<td>Exceptional</td>
</tr>
<tr>
<td>A</td>
<td>Excellent</td>
</tr>
<tr>
<td>A-</td>
<td>Very good</td>
</tr>
<tr>
<td>B+</td>
<td>Good, better than average</td>
</tr>
<tr>
<td>B</td>
<td>Good, average</td>
</tr>
<tr>
<td>B-</td>
<td>Below average</td>
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<tr>
<td>C</td>
<td>Probationary status</td>
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<tr>
<td>D</td>
<td>Unacceptable, retake course</td>
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<tr>
<td>F</td>
<td>Fail, retake course</td>
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</tbody>
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**REQUIREMENTS**
Weekly attendance and participation will be required. Attendance will be taken for each class period. For every three missed classes your grade will be dropped one half grade. Reading, assignments and projects will be issued throughout the semester.

Canvas will be used as a tool to disseminate information and to allow students access to course material from home. It is the responsibility of the student to make sure they are registered, have access and know how to use Canvas.

Students will need to have a drafting table at school with standard drafting tools, scales and a calculator.

**GETTING HELP**
It is your responsibility to make an appointment if you need help. The easiest way to get in touch with the TA or me is through email.
REQUIRED BOOK
The following book by Steven Strom, Kurt Nathan and Jake Woland is required for this class. *Site Engineering for Landscape Architects*. New York: Van Nostrand Reinhold, 6th edition. It is available as an eBook for rent from VitalSource previously CourseSmart.
http://www.coursesmart.com/IR/5828921/9781118090862?__hdv=6.8

Other Reference Books
Motloch, John. *Introduction to Landscape Design*.
Harris and Dines. *Time Saver Standards*

POLICIES, RULES AND REGULATIONS
Student Conduct
University of Colorado Denver policies for student conduct can be referenced at:
http://catalog.ucdenver.edu/content.php?catoid=18&navoid=4277&hl=university+policiesturnto=sear
ch - Conduct

Academic Honesty & Plagiarism
All students are responsible for knowing and adhering to the academic integrity policy at this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying bribery, and threatening behavior. Violations of these policies will result a failing grade for the assignment, and may lead to disciplinary action. For more information, please see the College of Architecture and Planning's Honor Code:

CU Denver's Academic Policies
http://catalog.ucdenver.edu/content.php?catoid=16&navoid=3369#Honor

Learning Environment
Students and faculty members each have a responsibility for maintaining an appropriate learning environment. Respect for others is paramount. Students who fail to adhere to behavioral standards may be subject to discipline. Faculty members have a professional responsibility to treat students with understanding, dignity, and respect, to guide classroom discussion and to set reasonable limits on the manner in which students express opinions. Bullying and harassment will not be tolerated.

Discrimination
The University of Colorado Denver adheres to Title IX, which states that, "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."
http://www.ucdenver.edu/policy/TitleIX/Pages/default.aspx

Disabilities
If you qualify for accommodations because of a disability, please submit a letter to the instructor from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. Contact the appropriate campus agency.
Safety And Risk Management
Policies exist for the safety of our academic community. These include firearms, alcohol and hazardous materials, as well as behaviors and situations. A list of hazardous materials is posted in all studios.

Accommodation for Religious Observances
Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments, or required attendance. In this class, we will work with individuals on a case-by-case basis. Please notify the instructor in a timely manner so that accommodations can be arranged.

Absences, Tardiness, Quizzes and Homework
Except for documented health or disability reasons, I will not accept excuses for absences, tardiness, missed examinations, or homework not submitted. Documentation of disability or health related issues must be provided to Disability Services.

Classes begin and end on time. For every three unexcused absences an academic penalty of one half-grade reduction will be imposed. Papers, projects or any other required assignments that are turned in late will receive one full grade reduction. Any student who fails to turn in papers or other assignments will receive either a zero or an F for the missed work.

Classroom Decorum
The following ground rules apply to all students and are designed to ensure a classroom environment conducive to learning for all students:

1. Pagers, beepers, cellular telephones, and handheld Internet devices must be deactivated before class begins and remain deactivated throughout the entire class period.

2. Students who engage in disruptive classroom behavior will be reported to the Office of Student Life for appropriate disciplinary action under the CU Denver Code of Student Conduct and, when appropriate, to the Auraria Campus Police for investigation of possible criminal action. The Code of Student Conduct can be found on the CU Denver website, under Office of Student Life and Student Activities. Disruptive behavior includes, but is not limited to, arriving late to class without explanation or apology; leaving class early without explanation or apology; reading a newspaper or magazine; reading a book with no connection to the content of the course; engaging in prolonged private conversations; sleeping in class; eating, drinking, and/or gum chewing; passing notes; being under the influence of drugs or alcohol; harassment or verbal or physical threats to another student or to the instructor; failing to deactivate pagers, beepers, cellular phones, and/or handheld Internet devices.

3. Students are prohibited from selling, or being paid by any person or commercial firm for taking, notes or recording class lectures without the advance express written permission of the faculty member teaching this course. Exceptions are permitted for students with a disability who are approved in advance by Disability Resources and Services for note taking or tape recording as an academic accommodation.

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