HORTICULTURE AND CROP SCIENCE 4410

SUSTAINABLE LANDSCAPE MANAGEMENT

Lecture: MW 2:15-3:10 pm
Lec: HT 153
Lab: M 3:10-5:00 pm
HG: 153, Howlett Greenhouse, Nursery Area or Waterman Farm

Course Instructor: Dr. Hannah Mathers
Office: 217B Howlett Hall
Phone: 247-6195
Email: mathers.7@osu.edu
Office Hours: MW 1:00 – 2:00 (H217B)

Grading:
Midterm (1): 20%
Field Trip and Lab Reports: 10%
Short Course Reports and Presentations: 30%
Final: 25%

Code of Conduct: To be approved by the class
Courteous and respect for others will be given by all participants in the class at all times. Respect will be shown to each guest lecturer. Student in this class will be required to work as individuals and in teams at times. It is assumed that students will put forth the appropriate kind of effort for each situation. In all assignments any external sources of information must be duly credited, including information received from other students in the class. In all examinations (take home, in class) students are to work independently not together. Disruptive or dishonest acts such as cheating or plagiarism will be handled in accordance with procedures defined in the Code of Student Conduct or Faculty Rule 3335-5-487.

Attendance and Late Work: You are expected to attend lectures and labs. If you are unable to attend please notify me. There will be a grade deduction for missing classes without notification and excuse. Late work will not be accepted, or if accepted it will receive a significant “late” penalty.

Grading Scale:
93-100% =A
90-92.9% =A-
87-89.9% =B+
84-86.9% =B
80-83.9% =B-
77-79.9% =C+
74-76.9% =C
70-73.9% =C-
67-69.9% =D+
60-66.9% =D
Less than 60% =E

Objectives: Know how to lay sod, prune, fertilize and understand fertility of ornamental plants in the landscape, dig plants, install irrigation and pumping systems, construct mortar-less segmental walls, pest control (disease, insects, weeds, IPM and abiotic) and spraying. HCS 4410 will also focus on the human and business elements of sustainability, such as sustainable hiring, pricing strategies, positive customer experience and profitability with the goal of helping transforming individuals into sustainable global citizens.
HCS 4410 students should also know via the class the following 12 landscape sustainable practices:
1) Reduction of water use in landscapes through design of water-wise garden techniques such as drought resistant plants; 2) Water conservation techniques through rainwater harvesting; 3) Landscape irrigation including using gray water or stormwater where possible; 4) Bio-filtering of wastes through constructed wetlands; 5) Integrated Pest Management techniques for pest control and reduction of synthetic pesticides; 6) Creating and enhancing wildlife habitat in urban and managed environments; 7) Energy-efficient landscape design via knowledge of proper placement and selection of shade trees, and creation of wind breaks; 8) Use of recycled products for decking, glass, rubber from tires and other materials to create landscape products such as paving stones, mulch and other materials; 9) Soil management techniques, including composting of yard wastes, to maintain and enhance healthy soil that supports a diversity of soil life; 10) Integration and adoption of renewable energy, including solar-powered landscape lighting and LEDs; 11) Incorporating less-polluting landscaping tools and equipment, especially in the maintenance stage; 12) Improving tree survival for pollution mitigation and carbon sequestration.

2013 85th Anniversary OSU Nursery Short Course Highlights for HSC4410
(*recommended) (Sessions marked (Or) can be substituted for * sessions but have lower priority).

Sunday, Jan. 13, 2013
9:00 AM – 4:00 PM (6 hours): Stone Workshop (a $195.00 value – free with HCS 4410 registration)

Monday, Jan. 14, 2013
3 hours recommended*:
*8:00-9:15 AM: "Hiring – Why is it so Hard"
9:30-10:30 AM: "Selling High End Landscapes"
10:45 – 11:40 AM: "Selecting Native Plants"
*1:30-2:30 PM: "Positive Customer Experience"
*2:45-3:45 PM: "Pricing Strategies"

Tuesday, Jan. 15, 2013
3 hours recommended*:
8:15-9:15 AM: "Plant Breeding and Marketing"
*9:30-10:30 AM: "Everybody Sells"
Or 9:30 – 10:30 AM: "Quantifying Carbon"
Or 9:30 – 10:30 AM: "Sustainable Lawn Alternative"
Or 9:30 – 10:30 AM: "Small Stature Trees"
*10:45 – 11:40 AM: "Profit for the Process"
10:45 – 11:40 AM: "Buffers, Filter Strips, and Bio-swales"
*1:30-2:30 PM: "Carbon, Ecosystem Services and Landscaping"
Or 1:30-2:30 PM: "Eco-Conscious Landscaping"
6:15-7:15 PM: Keynote – Dirr: "Noble Trees"

Wednesday, Jan. 16, 2013
3 hours recommended*:
*8:15- 9:15 AM: "LED Lighting"
Or 8:15- 9:15 AM: "Green Walls"
9:30 – 10:30 AM: "Composting"
*10:45 – 11:45 AM: "Watershed Retention"
Or 10:45 – 11:45 AM: "Google analytics"
*1:30 – 2:30 PM: "Design Fee"
Or 1:30 – 2:30 PM: Invasive Plants
*2:45 – 3:45 PM: "Landscape Habitat"

The short course substitutes for 15 hours of classroom instruction.
## Lecture and Lab outline:

<table>
<thead>
<tr>
<th>WEEK</th>
<th>LEC. &amp; Lab</th>
<th>TOPIC</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan. 7 - Lec#1</td>
<td>Cancelled in lieu of attending Jan. 15/2013 OSU Nursery Short Course Class (OSUNSC)</td>
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<td></td>
<td>Jan. 7 – Lab#1</td>
<td>Cancelled in lieu of attending Jan. 13 – Stone workshop (Hr. 1&amp;2)</td>
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<td></td>
<td>Jan. 9 – Lec#2</td>
<td>Class introduction, definition of landscape sustainability, sustainability issues in the industry</td>
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<td>Jan. 14 – Lec#3</td>
<td>Attend Jan. 14 – OSUNSC</td>
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<td>Jan. 14 – Lab#2</td>
<td>Attend Jan 14 – OSUNSC</td>
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<td>Jan. 16 – Lec#4</td>
<td>Attend Jan 16 - OSUNSC</td>
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<td>2</td>
<td>Jan. 21 – Lec#5</td>
<td>Martin Luther King – Holiday – Classes cancelled</td>
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<td>Jan. 21 – Lab#3</td>
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<td>Jan. 23 – Lec#6</td>
<td>Plant growth and sustainability</td>
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<td>3</td>
<td>Jan. 28 – Lec#7</td>
<td>Cancelled in lieu of attending Jan. 16/2013 – OSUNSC</td>
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<td>Jan. 28 – Lab#4</td>
<td>Cancelled in lieu of attending Jan. 13 – Stone Workshop (Hr. 3&amp;4)</td>
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<td>Jan. 30 – Lec #8</td>
<td>Landscape plant nutrition</td>
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<td>Feb. 4 – Lec#8</td>
<td>Cancelled in lieu of attending Jan. 15 –OSUNSC</td>
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<td>Feb. 4 – Lab#5</td>
<td>Cancelled in lieu of attending Jan. 13 – Stone Workshop (Hr. 5&amp;6)</td>
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<td>Feb. 6 – Lec#9</td>
<td>Cancelled in lieu of attending Jan. 15 – OSUNSC</td>
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<td>5</td>
<td>Feb. 11 – Lec#10</td>
<td>Cancelled in lieu of SC</td>
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<td>Feb. 11 – Lab#6</td>
<td>Cancelled in lieu of SC</td>
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<td>Feb. 13 – Lec#11</td>
<td>Cancelled in lieu of Jan. 16 – OSUNSC</td>
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<td>6</td>
<td>Feb. 18 – Lec#11</td>
<td>Composting and green Infrastructure Soil, Kurtz Bros. – Craig Hoitink</td>
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<td>Groveport Yard Waste Compost Site (20-30 minutes). Wet/muddy or frozen conditions -- so dress appropriately. 20 to 30 minutes covering Green Infrastructure soil (Bio retention, Planting, Lawn and Rooftop Garden Soils).</td>
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<td>Feb. 18 – Lab#7</td>
<td>Kurtz Bros.</td>
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<td>Feb. 20 – Lec#12</td>
<td>&quot;Creating Sustainable Landscapes&quot; - Treva L. Jenkins, Breaking Ground, Beavercreek, Ohio</td>
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<td>7</td>
<td>Feb. 25 – Lec#12</td>
<td>Irrigation installation - Scott Knowles, Wolf Creek</td>
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<td>Feb. 25 – Lab#8</td>
<td>Irrigation installation</td>
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<td>Feb. 27 – Lec#13</td>
<td>Midterm #1</td>
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<td>8</td>
<td>Mar. 4 – Lec#14</td>
<td>Class cancelled in lieu of SC</td>
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<td>Mar. 4 – Lab#9</td>
<td>Class cancelled in lieu of SC</td>
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<td>Mar. 6 – Lec#15</td>
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<td>9</td>
<td>Mar. 11 - Lec#16</td>
<td>Spring Break</td>
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<td>Mar. 11 – Lab#10</td>
<td>Spring Break</td>
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<td></td>
<td>Mar. 13 – Lec#17</td>
<td>Spring Break</td>
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Format for Field Trip Reports

Provide a 500-750 word written report of each business visited (due 2 weeks following the field trip). The written report must be turned in either on disk or as an e-mail attachment (to mathers.7@osu.edu) AND in hard copy form. The format should be either Microsoft Word or WordPerfect or any text (e.g., .TXT extension).

- **Organization Name**
- **Nature of the organization**: commercial, public, mixed, etc.
- **Purpose of the organization**: products/services provided, clientele, long-term goals (mission, etc.)
- **Relative size of the organization**: (facilities, employees, revenues, number of accounts, people served, etc.)
- **Horticultural focus of the organization**: Types of plants manipulated (grown, serviced); types of manipulations (propagation, growth, sales, design, installation, maintenance, etc.)
- **Personal impressions and things learned**: What did you see and hear that was new to you and helped clarify the subject area being investigated i.e. general nursery production, herbaceous perennial production, equipment, irrigation, planting, propagation, overwintering?

Format for the Short Course Reports (Jan. 13-16)

Provide one 500-750 word written report for two of the three recommended sessions attended Jan 14-16, 2013 and one 1000-1500 word report for the Jan. 13 workshop (include photos for the stone workshop)
(due 4 weeks following the short course). The written report must be turned in either on disk or as an e-mail attachment (to mathers.7@osu.edu) AND in hard copy form. The format should be either Microsoft Word or WordPerfect or any text (e.g., .TXT extension).

- **Session Title and Speaker Name.**
- **Nature of the presentation:** nursery, landscape, retail, business, other.
- **Purpose of the session:** What issue or problem was addressed, what solutions were offered, what was learned, how the information can be applied in terms of sustainable practices.
- **Personal Impressions of the Session:** Did you think the information presented was relevant or non-relevant to the audience and why? Do you think new information was presented in the session and why? Did you think the speaker held the audiences’ attention?

**Format for the Lab Reports**

500 words reports (due 2 weeks following the lab unless otherwise indicated. Similar to above reports except format must include:

**Title of Lab:**
**Objective of Lab:**
**Materials and Methods:**
**Data Collected or Procedures Conducted:** Present in table(s) or figure(s).
**Results and Conclusions:** Include at least one or two other reference paper on the topic in your discussion of results and conclusions.

**Format for PowerPoint Presentations of Topics at the OSUNSC**

Each student is asked to give a 15 minute PowerPoint presentation on one of the topics listed below. The presentation should not be limited to a summary of what you learned in the session (with the same name) at the OSU Nursery Short Course as it should also include outside information from articles, your experience, interviews with people in the industry, etc. to full develop the topic.

The presentation will be evaluated with the following criteria:

1. **PowerPoint Format:** (14 possible points)
   PowerPoint contains at least 8 photos that represent the topic area
   Presentation should include ~ 25 slides – more if you talk fast.
   15 minutes – should be rehearsed and timed
   No less than 28 point font and no more than 25 words on a slide
   Tables have maximum of 5 columns, 5 rows, fill space, title identify
   Graphs - Max. 2 to 3 lines, legend, ID both axis
   Dark background, light text

2. **Presentation Technique:** (10 possible points)
   Student speaks clearly and maintains good eye contact
   Describes graphs, figures, tables completely
   Involve the audience
   Normal gestures
   Voice

3. **Organization:** (16 possible points)
   a. **Introduction** –
      i. How does this topic relate to sustainability
      ii. What could be done to make the subject matter more relevant to sustainability
      iii. What was the speaker’s objective at the OSUNSC.
   b. **Content** –
      i. What is the issue, how can the issue be solved?
      ii. Present relevant information regarding sustainability in the topic area – from the
OSUNSC
iii. Present relevant information regarding sustainability in the topic area – from outside sources (discussed above)

c. Conclusions –
i. Summarize the topic
ii. What did you learn, what was new to you?
iii. Answers questions

Dates available for presentations:
March 4 or Apr. 8, 2013

Topic

Stone Workshop

Hiring – Why is it so Hard

Positive Customer Experience

Pricing Strategies

Everybody Sells

Profit for the Process
Carbon, Ecosystem Services and Landscaping

Watershed Retention

Design Fee

Landscape Habitat