Course Syllabus
TUR125
Turf and Landscape Irrigation
3 Semester Hours

Spring 2016

Faculty: Mr. Eric Linde
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Office Hours: By appointment, one hour prior to class.
Class Time: Lecture: Wednesday, 6:00 – 9:15pm.
Room: ORGC 100

Course Description:
This course will introduce the student to basic irrigation principles, uses of irrigation, and irrigation system design for residential and commercial use. Students explore the fundamentals of irrigation design, installation and irrigation management. Three lecture hours per week.

Textbook:
Reference Compendium provided.

COURSE OBJECTIVES, ASSESSMENT GOALS AND ASSESSMENT STRATEGIES

1. Explain issues related to Turf and landscape irrigation systems
   - Present an overview of irrigation usage and systems.
   - Compare automatic irrigation systems with semi automatic and manual irrigation systems
   - Describe the components of a landscape irrigation system such as pump station, distribution lines, control valves, controllers and sprinkler heads
   Assessment Strategy: Exam questions, quizzes and homework.

2. List and explain the major steps to develop a landscape irrigation system
   - Review the engineering basics of irrigation design
   - Generate a list of steps to develop an irrigation system
   - General overview of irrigation specifications
   - Meet with manufacturer representatives on product availability and applications
   Assessment Strategy: Exam questions, quizzes and homework.
3. Complete site analysis for a landscape irrigation system
   - Create a technical diagram showing the relationship of key components of a landscape irrigation system including head placement, layout and spacing
   - Using narrative list and describe, without aids, the major components of an irrigation system (emphasis on “describe”)
   - Create technical drawings of irrigation components and specifications for pump, valves, quick couplers, pipe, wire and sprinkler heads
   - Create a technical drawing explaining the elements of a landscape irrigation system
   Assessment Strategy: Exam questions, quizzes and homework.

4. Plan for the use of pumps in landscape irrigation systems
   - List types of pumps and provide a short description of their purpose in a landscape irrigation system
   - Explain the use and types of backflow prevention devices.
   - Detail/explain the purpose and operation of each of the components of water distribution lines including control valves and sprinkler heads
   - Calculate volume and velocity and measure static and non static pressure
   - Demonstrate component repair i.e., replace a broken fitting, splice a broken wire
   Assessment Strategy: Exam questions, quizzes and homework.

5. Create a sales presentation for a fictional irrigation installation company.
   Present your plan to the class as if they are the potential clients.

6. Write a guideline for a customer to explain operation and management of a landscape irrigation system
   - In the guideline explain to the customer how to assess water need
   - In the guideline explain to the customer how to know when to water
   - In the guideline explain to the customer how to determine how much water to use in irrigation
   - Write a guideline to explain the maintenance of a landscape irrigation system
   - Write instructions for winterization and start up of a landscape irrigation system
   - In the guideline include troubleshooting a landscape irrigation system

Assessment Strategy: Exam questions, quizzes and homework.

*Satisfies GEO objective 1,2,3,4,5,7,8.*
**Course Requirements:**

**Grading/Exams:**
Grading will be determined on the basis of tests, drawing assignments, homework assignments, quizzes, Electronic Library project, laboratory assignments, design project and final exam. This course will include a comprehensive final exam. Final grade will be weight as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Class preparation and participation</td>
<td>10%</td>
</tr>
<tr>
<td>Exams (2)</td>
<td>40%</td>
</tr>
<tr>
<td>Irrigation installation project</td>
<td>10%</td>
</tr>
<tr>
<td>Digitized sales presentation</td>
<td>10%</td>
</tr>
<tr>
<td>Design Project</td>
<td>10%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
</tbody>
</table>

Note: Each class will include the lecture and some exercise to practice and for the instructor to coach you. There are ongoing assignments due to make use of the scheduled time each week. Each student is expected to stay and work for the entire time for which the class is scheduled.

**Conversion of numeric average to Final (Letter) Grade:**

- 90 - 100 = A
- 80 - 89  = B
- 70 - 79  = C
- 60 - 69  = D
- 0 - 59   = F

**Attendance Policy**

Absence / Lateness - NOT ALLOWED

ARRANGE TO GET NOTES FROM ANOTHER STUDENT or INSTRUCTOR.

School is like a job. It is a commitment and absence or lateness will not be tolerated as it would not be tolerated in the workplace. If you miss or are late for classes you miss important material and you will fall behind. It is YOUR RESPONSIBILITY to make up any missed class work. Please have the courtesy to notify your instructor if you must miss a class.

**ELECTRONIC WRITING ASSIGNMENT/Projects**

A digitized sales proposal is required. It is due in week 11. Further, you will present the proposal to the class. It cannot exceed 7 minutes. You may not use Wikipedia as a source. Visual aides are encouraged. It should be professional and in your own style. Use several sources, at least 3. Cite your source (Cite the sources in a way that allows the instructor to check your facts). Give the citations exactly so the teacher can type in the URL to check the facts and determine that you did not copy exactly from another person’s written words verbatim.

**Due:** Turn in paper April 1. Papers turned in late will “not” be accepted.

This paper must be no more than 12 pages plus a cover page and a bibliography. It should include a main point statement, the report and a summary. You must include a minimum of 3 references; at least two of those references must be from the Internet. You may not include your text as a reference. Paper must be typed in 12 point type and double spaced.
Tentative Schedule

1/20
- Review Syllabus.
- Class irrigation project.
- Review sales presentation and design project.
- Review binder materials and Basic Irrigation Design guide.
- Guest speakers and tours
  - Overview of turf and landscape irrigation.
Reading assignment; Review design guide. Find a site and document.

1/27
- Assignment; Select a site, measure and document amenities.

2/3
- Irrigation Components
  - Water source
  - Sprinkler selection.
  - Sprinkler placement and head to head spacing.
  - Water use efficiency.
  - Valves, zoning, pipe size, connectors, fittings, controllers
  - Programming, smart systems
Assignment; Begin your preliminary design to scale.

2/10
- Irrigation design workshop
  - Preliminary design
  - Design key symbols.
  - From site analysis to final design.

2/17
- Irrigation Supply house tour
  - Tour of contractor warehouse in Delmar.
  - Product overview.
  - Trends and innovations in residential and commercial projects.
  - Low voltage lighting, ponds, water quality and design services.

2/24
- Design Project Lab - your site or plat provided.
  - Select equipment and build specification manual.
  - Build drawing key.
  - Draw in Valves, control system and water source.
  - Check zone flows and document.
First Exam 20%
Homework assignment; Complete design and prepare for 3/23 presentation.

Irrigation installation workshop with Tim Cleary, Turf Equipment and Supply Co.
3/2
Irrigation installation equipment.
Best practices.
Pulling, trenching, boring, cleanup.
Customer and vendor relationships, support.
Prepare for irrigation design presentation.

3/9
No Class

3/16
Sales Presentation Workshop
Discuss the components of a successful sales presentation
Prepare to sell your system to the class due 4/6.
Ancillary services- lighting, drainage, aeration, seeding, debris removal

3/23
Design Project Presentations and Discussion (10%).
Class critique
Finalize plan for class installation project.
Equipment list and supplies for installation
Exam preparation

3/30
Golf Irrigation Tour at Ocean Resorts.
Pump station Water source and storage, performance, operation.
Irrigation controls
Line out new installation project in the field.
Second Exam (20%).

Meet at The ORGC Maintenance Facility through 4/20

4/6
Class irrigation project installation (10%).
Site Analysis - measuring, water supply, trenching
Equipment - pipe, sprinklers, drip, fittings, backflow devices, valves.
Sales presentation is due (10%)

4/13
Class irrigation project installation.
Install valves, wire, pipe, swing joints.
Cover ditches and tamp, flush lines
4/20
Install heads connect wires, wire satellite, test heads
Run demonstration program with new heads
Final clean-up and seeding the site
Review of course and exam preparation.

4/27
Final Exam (20%).

Best practice to get the highest grade on your paper
Empathize with the customer’s needs and requests.
Be prepared for questions from the class.
Be prepared to offer alternatives to your proposal.
Be yourself during your presentation.
Be creative!

Late Assignment Policy
All homework, laboratories and reading assignments must be submitted on time. NO CREDIT FOR LATE WORK. If you do not read your text at home, labs and practice, you will not be able to keep up with the class. I cannot slow down to pick up students who are not committed to making every class and doing all of the homework, labs and reading as assigned. I cannot check that you have done your reading but it will show up in your work and your ability to keep up with the class.

Quizzes and Tests
If you miss a test, it will be the teacher’s decision to determine if it should be made up. If you miss a quiz/warmup you will receive ZERO (0) points for that quiz, no makeup quizzes will be given. All Quizzes and Tests will be based on the Text, Lecture Material, Lab exercises and handouts.

Blackboard Disclaimer:
Blackboard is being used as the primary tool for this course. To access course content in Blackboard you need to have access to a computer with an Internet connection. Computers are available on campus in FOH 217, HH 100, GH 304 and FOH 305.
Please follow these directions to access course syllabi and any other materials posted.

Login Information:
1. From the Wor-Wic home page, point to “Quick Links” (top –right) and then click “Blackboard Login.”
2. Enter your Wor-Wic user ID and password (same as your Wor-Wic email user ID and password).

**Academic Honesty Policy:**
Students are required to maintain a high level of academic performance. All work submitted to the instructor will be regarded as the work of the student taking the course. Cheating and plagiarism are defined in Wor-Wic’s Student Conduct Policy found in the College Catalog. Infractions of this policy will result in disciplinary action including failure of the assignment, test, or the course.

**Emergency Information Statement**
In the event of severe inclement weather or other emergency, information about the closing of the college will be communicated via e2Campus and the College's website. Faculty will communicate with students about their courses and course requirements, such as assignments, quiz and exam dates, and class and grading policies, via Blackboard. Students will be responsible for completing all assignments in accordance with class policies.

**Services for Students with Disabilities**
Wor-Wic provides reasonable accommodations for students with disabilities, in compliance with the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973. If you are in need of accommodations, please contact the counseling office at (410) 334-2899. For more information, see Wor-Wic's Services for Students with Disabilities web page.