PSSC 2470 Fall 2014

Introduction to Turfgrass Science
Tarleton State University
Lecture Syllabus

Date:			Topic:	HW Due
August	T	27	Introduction, Take Roll, Course Objectives,	Email Professor
	TH	29	Giving Turfgrass Advice to Home Owners	
September	T	03	Turf Use, Function, and Characteristics.	Chapter 1
	TH	05	Turf Establishment - Site Preparation, Pure-Live Seed	Chapter 9
	T	10	Turf Establishment - Planting, Area	
	TH	12	Turf Species Adaptation	Chapter 2
	T	17	Calibration of Sprayer Equipment	Calibration Problem
	TH	19	Warm-Season Grasses (Autumnal Equinox)	Chapter 3
	T	24	Warm-Season Grasses, Calibration of Sprayer Equipment	Calibration Problem
	TH	26	Cool-Season Grasses	Chapter 4
October	T	01	Cool-Season Grasses	
	TH	03	**** First Exam ****	Chapter 5, 6
	T	08	Soil Modification	Chapter 24
	TH	10	Cultural Practices – Fertilization	
	T	15	Cultural Practices – Fertilization	
	TH	17	Area Calculations	Chapter 7, 24
	T	22	Cultural Practices – Fertilization	Chapters 8, 10
	TH	24	Review test	Fertilizer Problems
	T	29	Cultural Practices – Mowing	Chapter 11
	TH	31	Cultural Practices – Mowing	
November	T	05	Cultural Practices - Irrigation	Chapter 12
	TH	07	Improving Unsatisfactory Turf -Compaction	Chapters 18
	T	12	Improving Unsatisfactory Turf	Chapters 19
	TH	14	**** Second Exam ****	
	T	19	Developing a Turf Maintenance Program	
	TH	21	Why do we all fertilize turfgrass differently	
	T	26	Why do we all fertilize turfgrass differently	
	TH	28	THANKSGIVING -- No Classss	
December	T	03	Turf Pests	Chapter 13, 14, 15, 16
	TH	05	Review test	

TH 12 ** Final Exam ** 3:00 - 5:30

You will need to have a SCIENTIFIC calculator at every lab and lecture.
You will need to have a knife or blade at every lab.

Instructor: Dr. Hennen Cummings
Office: 203 C Agriculture (AG)
Office Hours: Wed. (1-3 PM). Please make an appointment for important issues.
Telephone: 968-9223 (O)
Email: hcummings@tarleton.edu
Website: http://www.tarleton.edu/~hcummings

Class Schedule: TR 10:50-12:05 HRTCT 106
Lab Schedule: T 1:00-2:50 PM HRTCT 106 and Turfgrass Field Laboratory and Greenhouse

Office Hours: If you have questions, please schedule an appointment or come by AG Rm. 203C. If you schedule an appointment, please call me if you cannot make it. If you want to meet with me briefly, please meet with me after class and **NOT just before class begins**. Please do not get me angry right before class begins by saying something stupid like I emailed my HW to you, are we going to be here the whole time, or _____.

Required Text: 1) Turfgrass Science and Management. 4th Edition. Robert Emmons. ($150 new, Amazon.com)
2) The Mathematics of Turfgrass Maintenance. 4th Ed. Nick Christians. ($40 new. Amazon.com)
3) AG-408 Pest Control for Turfgrass Managers from http://www.turffiles.ncsu.edu under Extension/Official Publications (free)
4) AG-348 Turfgrass Pest Management: A Guide to Major Turfgrass Pests and Turfgrasses from http://www.turffiles.ncsu.edu under Extension/Official Publications (free)
5) Pesticide labels from http://www.cdms.net/ under Services/Labels (free)

Handouts **(You will need a very large folder or very large 3 ring binder)**
Magazine Subscriptions http://www.mrpllc.com/

Turf SportsField SUPERINTENDENT

Supplies: You will need to have a scientific calculator at every lab and lecture. You will need to know how to use the memory, +/-, π, √, x^2, etc features by the 2nd class. Avoid calculators with "Enter" or "Answer" buttons. (Casio fx-260, College Book Store or Wal-Mart $10.00). Do not bring a calculator that you do not know how to use especially the **memory, +/-, π, √, x^2** functions.

Course Description: An introduction to turfgrass history, benefits, and use. Growth and development of various turfgrass species and their culture, including pest and disease management, are studied. All Hort majors are required to take this class.

Course Objectives: After completing this course, the learner will be able to:

1) Describe the different uses of turfgrasses and the factors that are used to characterize the quality of a turfgrass.
2) Discuss the pros and cons of bentgrass, bluegrass, fescue, ryegrass, bermudagrass, centipedegrass, zoysiagrass, St. Augustinegrass, seashore paspalum, bahiagrass, buffalograss, and carpetgrass.
3) Describe the cultural practices required to establish and maintain each of the above species of turf.
4) Identify each species using their respective morphological characteristics and to describe the germination process of a seed.
5) Answer the five main turf questions: A) What kind of grass should I plant? B) What type of fertilizer should I use and when should I use it? C) How do I fix my bare spot? D) How do I control the weeds? E) How long should I run my irrigation system? And be able to give turfgrass advice to a homeowner.
6) Apply the fundamentals to solve problems. Do I need to tell you to move the seats when vacuuming a car for your boss? Apply the fundamentals, math, calibration, techniques, and theories learned in the classroom and at the Turfgrass Field Laboratory to obtain the experience, work ethic, skills, and

confidence needed to be successful in not only establishing and maintaining major turfgrasses and irrigation systems but also making decisions and solving problems while considering the constraints of time, season, budget, labor, knowledge, and equipment.

Attendance and Grading Policy: Regular attendance at all lectures, laboratory sessions, and examinations is expected of all students. Research has shown that if one attends class regularly, one will perform better than if one were sporadic in one's attendance. Part of responsible attendance is coming to class on time. Late arrival distracts the learners who have committed themselves to responsible learning. The location of the lab or lecture will change periodically; regular attendance and communication via email are necessary so the class can respond to unforeseen opportunities. Students should inform the instructor in writing (email) if they anticipate being absent for a valid reason. Excuses for emergency absences (due to illness, injury, or death in the family) should be reported in written fashion to the instructor as soon as possible. Exams may be taken early if the student presents a valid reason for absence. Make-up exams will only be allowed if there is a legitimate medical excuse. Late homeworks will be accepted until the next class and will be penalized 10 points. If you want to give me an excuse about why it is late, the paper will be penalized 15 points. Incomplete homeworks will not be accepted. **You will need a scientific calculator for every class and lab. You will need to know how to use: memory, +/-, π, √, x^2, etc features before coming to the next class. Casio fx-260 solar for $10.00 at Staples. Avoid calculators with "Enter" or "Answer" buttons.** If you prefer you can barrow my calculator for in class assignments for 20 pts rather than taking a zero. You will need a **knife or razor blade** in lab to cut rope and open fertilizer bags. There will be calculator and knife quizzes. Make certain that you write down everything that I write on the blackboard.

Lecture exams will contribute to the lecture grade as follows: First Second, Third, and Final Exam – 49.5% (16.5 % each). Black Board assignments will count 16.5%. Homework, attendance, and quizzes will be collected periodically throughout the semester and will count as 34% of the lecture grade. There will be several unannounced oral quizzes. The total of these grades will constitute 75% of the final grade. The laboratory will constitute the other 25%. If a student misses 3 labs for any reason, no credit will be given for lab. Labs will never be canceled due to bad weather like rain. **Homework must be stapled before it is brought into the classroom. Show your math work and units (g / lb) cancelling.**

Ask about the "No Excuses Three".

Extra Credit: Career Services offers several events each semester; students with attendance slips will receive 4 bonus points on the next exam for each qualifying event that enhances their professional development. Students may choose to help perform research in exchange for extra credit. Research requires training, thus a commitment by the student to complete a task several times. Extra credit cannot change a failing grade to a passing grade. Students who receive their Texas Department of Agriculture (TDA) Pesticide Applicator's License for the first time by the final exam will receive 3 pts added to their final grade. Students who attend seminars that help them be better students or advance their career will earn 4 points per event on the next exam. Students who identify another student who has cheated on an assignment will receive 10 bonus points on the next exam.

Final letters grades will be based on exams and work described above. Final grades will be determined according to the following scale:
A = 90 – 100 %, B = 80 – 89 %, C = 70 – 79 %, D = 60 – 69 %, F = Less than 60 %

Academic Integrity: There is a zero tolerance policy for cheating. Both the giver of information and receiver of information will receive a zero on the assignment. Further actions may be taken depending on the severity of the situation. All department and university policies will be followed (See catalogue). Students will write the honor pledge from memory on all assignments. **"On my honor, I have neither given nor received any unauthorized aid on this test or assignment because a Texan does not lie,**

cheat, litter, steal, or tolerate people who do" and sign their name. Failure to write the pledge properly will result in a reduction of the possible points on the test or assignment. Scholarly activity is marked by honesty, fairness, and hard work. A scholar does not take credit for someone else's work, take advantage of others, or behave in such a manner that frustrates others. Frankly, cheating will not be tolerated because it is wrong! I regret that you may be falsely accused in public of cheating if your answers are identical to another student's answers. **Be careful when working together on assignments. Avoid the appearance of cheating by always showing your work.**

Students with Disabilities: In accordance with TX State's policy on working with students with disabilities, "No otherwise qualified handicapped individual in the United States. . . shall, solely by reason of his handicap be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." It is the policy of Tarleton State University to comply with the Americans with Disabilities Act and other applicable laws. If you are a student with a disability seeking accommodations for this course, please contact Trina Geye, Director of Student Disability Services, at 254.968.9400 or geye@tarleton.edu. Student Disability Services is located in Math 201. More information can be found at www.tarleton.edu/sds or in the University Catalog.

Safety: Be aware of your surroundings when at the Turfgrass Field Laboratory and Greenhouse. At turf facilities, there may be irrigation valve boxes with missing covers. There may be fire ants or other stinging insects and spiders, motorized equipment, items under pressure or low tree branches. The instructor will advise students on the location of fire extinguishers and evacuation routes. In the event of an emergency and building is evacuated, please meet in the field across the parking lot from the Hort Center, so attendance can be taken to confirm that everyone has left the building.

During laboratory, we may apply fertilizers or pesticides. Personal protective equipment will be supplied to the applicator; however, all students must wear **long pants and shoes** to every laboratory. Shorts, flip-flops, or sandals are not appropriate attire for lab. Please do not test this rule. Please wear your own safety glasses during every laboratory. Bring a clipboard and calculator. Whining is not allowed at the Turfgrass Field Laboratory and Greenhouse. Bring your own drinking water to the turf plots. Wash hands with soap after laboratory.

Questions to answer.

How often should a turfgrass be mowed?
How many square feet is a specific feature to which you want to apply products?
How much of a specific fertilizer is required to apply the appropriate amount of a nutrient?
What are the qualities of a good turfgrass fertilizer, what is the appropriate amount of said fertilizer, and when should it be applied to a specific turfgrass with a specified use (level of maintenance)?
How many aerations and when should aerations occur for s specific turfgrass under a certain level of maintenance?
How much topdressing is required?
How much irrigation is necessary and how often should it be applied?

$$GPM = \frac{GPA * mph * W}{5940} = \frac{gal}{\min}$$

How much product = Area * Rate

$$\frac{GPM1}{GPM2} = \frac{\sqrt{psi1}}{\sqrt{psi2}}$$

Area of a circle = $\pi \times r^2$. It is not $(\pi \times r)^2$, nor $\pi \times D^2$.
So do not type it in your calculator this way

Conversions:

1 A = 43,560 sq ft

K_2O 83% actual K, P_2O_5 44% actual P

1 in = 2.54 cm

1 lb = 16 oz = 454 g

1 kg = 2.2 lb

1 yd^3 = 27 ft^3

1 hr = 3600 s

1 mile = 5280 ft

1 gal = 4 qt = 8 pt = 16 cups = **128 fl oz = 3785 mL**

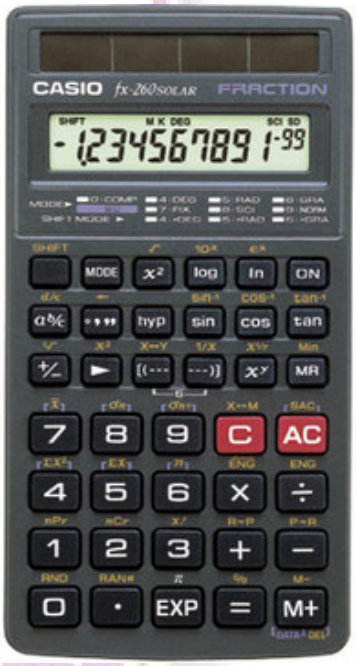
1 mL H_2O = 1 cm^3 H_2O = 1 g H_2O

π = 3.14159265358979323846264338327950288419716939937510

Half of 2 + 2 is three.

When you need help canceling units or solving word problems this semester, at least have the conversions and formulas memorized before coming to me for help. But please come to me for help. Learning the conversions and formulas is where to start. It is your list to choose from.

Sep. 11	Last day to drop with no record
Oct. 16	Midterm grades due.
Oct. 21-26	Home Coming.
Nov. 1	Last date to withdraw with a "Q".
Nov. 27	Classes dismissed at noon for Thanksgiving.
Dec. 3	Restricted activities begins
Dec. 4	Last day of classes



Last chapter of textbook is also a place to get help; there are many solved word problems.

Small College Offers Big Turf Program

By Jerry Mix

There is a lot to recommend about Stephenville, Texas. Stephenville bills itself as "the Cowboy Capital of the World." Located smack-dab in the middle of Erath County, the state's leading milk producer, Stephenville is just 70 miles southwest of Ft. Worth. And, perhaps most importantly of all, this city, with its population of 17,000, is the home of Tarleton State University, with a student population of 8,000.

Tarleton offers its students, who come from 30 U.S. states and 10 foreign countries, a host of different programs including a bachelor of science in horticulture and landscape management degree. This program is now starting to make waves in the golf course community.

The Tarleton turf program is run almost single handedly by Dr. Hennen Cummings, who earned his doctorate degree under Dr. Fred Yelverton at North Carolina State University.

Cummings is a no-nonsense guy who makes sure that, when his students leave Tarleton, they have enough background in turf management to land a job at a golf course or another area of interest including sports turf management, home lawn care or parks and recreation facilities.

The program currently has about 25 students a year, but Cummings would, of course, like to attract more. "There is a job for every student who graduates and they usually have several job opportunities to choose from," Cummings states. "But I still don't have as many students as I would like to have.

"I'm also fighting to get people in the athletic degree program to take some turf management courses," he says. "They may become a coach and inherit some turf responsibilities. When you are in college, you think - certainly I'll go to work for the Denver Broncos and other people will take care of the turf. But others will end up coaching in high school and they may be expected to maintain the fields."

He says golf courses want "students who have a good work ethic," and that is where the Tarleton students fill the bill. Many of Cummings' students are from the surrounding dairy

Students Jared Orton and Sterling Narron check the sod level to ensure a French drain installation is as seamless as possible. Cody Clark, Ali Donohue and Jeremy Nelson do the same.

Homework for first day
Send Professor an email. Photos. Safety.
Dr. Cummings should bring Camera, Large Pen and Paper, Textbook, and Trade Magazines.

We are what we do every day, not what we say or think we do.

We are only as safe as we are every day.

Questions in the back of each chapter will be assigned as homework. Tell me which edition of the book you have, or I may not grade it the way you want me too. I use the fourth edition key. Extra credit is given to those students who write out the entire question and also to those who type their homework.

Do not consider me your teacher. Consider me your boss. I want to teach you how to work, not how to be a student. I need to know what kind of employee you will be. One day you will be the boss; that is why you are in college.