

MEMORANDUM FOR STUDENTS ENROLLED IN CENG 5373

SUBJECT: CENG 5373 (Environmental Management) Administrative Instructions

1. This course is designed to give students the skills to manage environmental compliance and regulatory components of environmental, health and safety systems for projects, worksites or corporate production. Federal and State environmental regulations, techniques for environmental control; risk assessment and control and management strategies; characterization of hazardous materials; spill control and clean-up strategies.. A tentative course schedule is attached in enclosure 1, course objectives are shown in enclosure 2, and my bio is provided in enclosure 3.
2. This learning process will involve a combination of classroom and field based activities aimed at reinforcing fundamental concepts with practical "hands on" experience. Because this class only meets once a week, it is imperative that you not miss this class.
3. I teach at the following times and locations throughout the week:

<u>Course</u>	<u>Time</u>	<u>Days</u>	<u>Room</u>
CENG 4371/5391	1220-1345	Mon-Wed	RBN 2011
CENG 5373	1800 – 2045	Wednesday	RBS 2019

If you will miss a scheduled class, you are still responsible for the material.

4. You are encouraged to seek additional instruction during my office hours, before/after class, or by appointment either in person or by phone/conference call. Email and chat/text will also be acceptable. Take advantage of this opportunity, it's FREE and really will help!
5. Class Room Procedures:
 - a. Bring study notes, textbook, note-taking material, and a calculator to every class. You may not borrow or exchange calculators during graded events. If your calculator fails during a graded exercise, I am not responsible to furnish a substitute. Class preparation is your individual responsibility.
 - b. **Possible Textbook:** Crognale, Gabriele. Environmental Management Strategies: The 21st Century Perspective, First Edition, Prentice Hall/Pearson Education, Inc. (1999). ISBN 0-13-739889-1

6. Exams and Grading:

a. Grade Breakout and Cutoffs:

<u>Course Points</u>		<u>Grade Scale</u>
Mid-term Exams (1 at 500 each)	500 (25%)	A+ 96.67%..1933
Homework	350 (22.5%)	A 93.33%..1866
Individual Project	300 (15%)	A- 90.00%..1800
Quizzes(as needed)	100 (5%)	B+ 86.67%..1733
Professional Practice Grade	200 (10%)	B 83.33%..1666
Final Examination	<u>750</u> (37.5%)	B- 80.00%..1600
	2,200 (100%)	C+ 76.67%..1533
		C 73.33%..1466
		C- 70.00%..1400
		D 65.00%..1300
		F <65.00%<1300

If you earn less than 65% on all Exams or if you fail to earn at least 50% on the Final you will fail the course, **regardless of your course grade**. Of course, final grades are only A, B, C, F. Therefore, a C- is a C for a final grade. This distribution is to graphically remind you of how well you are doing.

b. Mid-Term Exam and Final Exam:

- 1) The dates for Mid-Term Exams are included in the course schedule. Official reasons for missing an exam are outlined in "Student handbook". You are required to take a make-up Exam, regardless of your reason for missing the scheduled Exam. Report any conflict to me as soon as possible prior to the Exam.
 - 2) Exams and the Final are closed book and notes. You can use a **TI-30 calculator** (or FE equivalent) and the CENG 5373 reference sheets.
 - 3) Solutions to Exams and homework will be posted on Blackboard.
- c. Collection of Student Work: Throughout the semester I will collect student work (best, average, and worst) for the ABET course and outcomes notebooks. This will require me to make a copy of your work, keep your original and return a copy of the graded work to you. I will not draw attention as to what level of work you accomplished.
- d. Embedded indicators of accomplishment of program outcomes: At times throughout the semester, portions of student work will be analyzed to determine if our program is accomplishing stated program outcomes based on established metrics. **If your work is below the minimum established metric, you will be required to repeat the assignment or that portion of the assignment until you achieve the minimum acceptable standard based on the metric.**

7. Homework: All homework is mandatory and becomes part of your grade, failure to submit any required homework will result in an incomplete. As an engineer your goal is to make a clear, logical, and professional presentation of your work, which is both accurate and correct. As such both your presentation and the accuracy of your work are important, and both will be graded. It is critical that you show all of your work and leave “foot prints” so that it can be easily followed. No guess work should be required to see what you did. All submissions are due at the time specified on the assignment on the due date. Submissions should be placed in the CENG 5334 box in RBS 1003. Additional guidance:

a. Homework:

- 1) Include a title sheet.
- 2) **Use Engineer paper only or full-page printouts from MathCAD, Excel, Visual Analysis, etc.** You may neatly tape or glue short computer printouts onto Engineer paper at the appropriate place in the logical flow of the problem. Only use one side of a page. Clearly present **a brief problem statement and a sketch** with your solution. Clearly and concisely explain each step. For narratives of more than a line or two, use your word processor or the text capability if you are using MathCAD or Excel. If you are writing out a paragraph or more, you must type it.
- 3) Late Submissions. It is a basic principle of professionalism that “**Professionals are not late.**” A “COORDINATED LATE” submission occurs when you will miss the suspense for a graded homework assignment and you contact me in advance. Notification immediately before the submission will not suffice. Point cuts up to the amounts below may be assessed for a “COORDINATED LATE” submission:

1. 0-24 hours late	a deduction of 25% of the earned grade
2. 24-48 hours late	a deduction of 50% of the earned grade
3. More than 48 hours late	No credit. <u>Assignments must be submitted.</u>

Obviously there are circumstances that will occur and make a timely submission impossible and I will work with you when and if they occur.

- 4) All homework in this course must be properly documented. As you are having your work reviewed it is likely that you might receive help from your classmates, just simply document it. Information from the course textbooks (equations and outlines of procedures), class notes, or me is considered immediately available to all students and need not be acknowledged or documented. **YOU ARE REQUIRED TO ACKNOWLEDGE AND DOCUMENT ALL OTHER ASSISTANCE AND REFERENCES USED.** Documentation will be accomplished in accordance with any manual for writing, footnote or endnote, for papers, but for written homework, just place the documentation right at the point you received help using Who and what assistance.

- b. Assigned readings. Doing the assigned reading prior to class will help you to understand the material presented during the instruction and will fill in gaps for things we do not cover (***I will not cover everything***). It will also make you more familiar with terms and concepts to be covered.

8. Professional Practice - During this semester, a portion of your grade in this course (10%) will be derived from a level of professional practice expectations. These expectations include a professional

demeanor and work ethic (attitude), consistent daily preparation (assignment reading), commitment to learning and fulfilling obligations (attendance), and being engaged in class activities (participation).

9. There will be several opportunities to earn bonus points for outstanding work on problem sets and for completion of other optional assignments. Opportunities for bonus points will be clearly identified by me and announced in class. Make use of these opportunities to extend your learning!
10. Students Rights and Responsibilities. To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link:

<http://www.uttyler.edu/wellness/StudentRightsandResponsibilities.html>

11. Grade Replacement/Forgiveness. If you are repeating this course for a grade replacement, you must file intent to receive grade forgiveness with the registrar by the 12th day of class. Failure to do so will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates will receive grade forgiveness (grade replacement) for only three course repeats; graduates, for two course repeats during his/her career at UT Tyler.
12. State-Mandated Course Drop Policy. Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the 12th day of class (See Schedule of Classes for the specific date). Exceptions to the 6-drop rule include, but are not limited to, the following: totally withdrawing from the university; being administratively dropped from a course; dropping a course for a personal emergency; dropping a course for documented change of work schedule; or dropping a course for active duty service with the U.S. armed forces or Texas National Guard.
Petitions for exemptions must be submitted to the Registrar's Office and must be accompanied by documentation of the extenuating circumstance. Please contact the Registrar's Office if you have any questions.
13. Disability Services. In accordance with federal law, a student requesting accommodation must provide documentation of his/her disability to the Disability Support Services counselor. If you have a disability, including a learning disability, for which you request an accommodation, please contact Ida MacDonald in the Disability Support Services office in UC 282, or call (903) 566-7079.
14. Student Absence due to Religious Observance. Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.
15. Student Absence for University-Sponsored Events and Activities. If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

16. Social Security and FERPA Statement. It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.
17. Emergency Exits and Evacuation. Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do Not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

Dr. J. Torey Nalbone, Ph.D., CIH
RBS 1005
(903) 565-5520
tnalbone@uttyler.edu

Encls.

Enclosure 1: Course Schedule

CENG 5373 Course Schedule (Subject to modification throughout the semester)

Date	Lesson No.	Material Covered	Reading Assignment	Assignment Distributed	Assignment Due
Week 1	1	Environmental Management Introduction, Administrative Law	Chapter 1		
Week 2	2	Enforcement Strategy, EPA	Chapter 2	HW 1	
					HW 1
		10 th Class Day			
Week 3	3	Occupational Health and Safety, OSHA	Chapter 3	HW 2	
					HW 2
Week 4	4	SEC, Environmental requirements EPA Inspections	Chapters 4 & 5	HW 3	
					HW 3
Week 5	5/6	Innovative Strategies	Chapter 6	HW 4	
					HW 4
Week 6	7	Midterm 1		Research Paper	
Week 7	8	Benchmarking EHS Programs Improving EMS	Chapter 7 & 8	HW 5	
					HW5
Week 8	9	Using Environmental Audits Effectively	Chapter 9	HW 6	
					HW 6
Week 9	10	Stewardship in Industry	Chapter 10	HW 7	
					HW 7
Week 10	11	Risk Management and Communication	Chapter 11	HW 8	
		Last Day to Drop Last Day of Week			HW 8
Week 11	12	Midterm 2 ISO 14000 and Environmental Management	Chapter 12	HW 9	Research Paper
					HW 9
Week 12	13	Sources of Information for EMS	Chapter 14	FAQ Requirements	
Week 13	14		Presentations	HW 10	
					HW 10
Week 14	15	Using Software & a Look into Future of EMS	Chapters 13 & 15		
Week 15	16	Comprehensive Final Exam			

Enclosure 2: Course Objectives

Course Objectives CENG 5373 Environmental Management

1. Explain foundations of Environmental Management Systems.
2. Evaluate the EMS against international standards, (ISO 14000, 26000, 33000 etc.).
3. Develop an EMS compliant with current USEPA enforcement strategies.
4. Determine the best management practice for occupational health and safety and the incorporation into a formal EMS program.
5. Assess the adequacy of a company's Environmental Management System and develop innovative solutions to improve the ease and assurance of compliance.
6. Evaluate the environmental audit as an effective management tool and identify financial requirements that provide for guidance in the process.
7. Describe useful examples of environmental stewardship in industry.
8. Develop an effective Risk communication and management plan which incorporates a strategy that provides information succinctly and efficiently..
9. Generate a strategy for a chosen corporation or business for their management of environmental compliance.

Dr. J. Torey Nalbone

Position: Associate Professor, Dept of Civil & Environmental Engineering
Torey_Nalbone@uttyler.edu

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Office and Phone: 1008 RBS South (903) 565-5520

Regular Office Hours: MWF – 1:00-2:00 PM TTh – 1:00-3:00 PM

Education:

Ph.D. Interdisciplinary Engineering (Health Protection) Texas A&M University

MS, Environmental Science Engineering, University of Texas at Dallas

Bachelor of Science (Biology/Chemistry), Baylor University

Professional Experience:

Industrial Hygiene Manager, TDCJ, 1992-1999

State Fire Marshal Deputy, OSFM, 1990-1992

IH Compliance Manager, OR-OSHA, 1987-1990

GC/MS Environmental Chemist, SWIFS, 1984-1987

Toxicology Chemist, DCME, 1982-1984

EM Technician, UTSMC, 1981-1982

Academic Appointments:

Assistant Professor, Occupational/Environmental Health, UTHCT

Adjunct Assistant Professor, Environmental Science, SFASU

Adjunct Assistant Professor, Technology, UTT

Adjunct Assistant Professor, Nursing and Health Sciences, UTT

Senior Instructor, Environmental and Biological Sciences, SHSU



Courses Taught:

ESC 330 Environmental Law

ESC 331 Environmental Sanitation

ESC 333 Intro to Industrial Hygiene

ESC 343 Water and Waste Water

ESC 430 Hazardous Waste Management

ESC 440 Air Quality

CENG 5350 Indoor Env. Quality

CENG 3361 Hydrology

CENG 3371 Intro. Env. Engineering

ENV 510 Regulatory Basis of Env. Quality

ENV 520 Industrial Hygiene

ENV 526 Industrial Hygiene Analysis

ENV 575 Engineering Controls

ENV 571 Air Pollution Management

CENG 5350 Air Control Engineering

CENG 5350 Storm Water Pollution Control.

ENGR 2301 Statics

CENG 4371 Env. Engineering Design

Personal Information:

Wife, Katherine, TISD School Nurse

Daughter, Adrienne, Age 23 years, Asst. Speech Therapist

Daughter, Sarah, Age 20 years, Baylor University, Sophomore

Cats, Bella-roo and Gatsby-boy

Professional Registration and Certifications:

Certified Industrial Hygienist, American Board of Industrial Hygiene

Certified Fire Service Instructor, National Fire Academy

Professional Organizations:

Am. Industrial Hygiene Association (AIHA)

Am. Society of Civil Engineers (ASCE)

Hygiene

Am. Conference of Governmental Industrial Hygienists (ACGIH)

National Fire Protection Association (NFPA)

ASTM International Academy of Industrial

Favorite Movie: The Matrix (All three episodes and then some)

Favorite Real Hero: Nikola Tesla

Favorite Super Hero: Dare Devil (He can't see and still beats the bad guy!)

Example of Required Homework Format:

MEMORANDUM

To: Dr. Neil Grigg
Professor, Colorado State University

From: Pete Rogers
Graduate Student, Colorado State University *PDR*

Re: Exercise 10, Comparison of Asset management Practices

Date: April 6, 2005

Having completed my review of the assessment and renewal practices of the water distribution and highway industries, the following memorandum provides a brief comparison of how each industry manages its assets. The comparison is based on six commonly employed analysis methods as described in the Federal Highway Administration (FHWA) publication "FHWA Asset Management White Paper": life-cycle analysis, deterioration modeling, agency and user cost modeling, benefit-to-cost analysis, prioritization and optimization, and investment analysis.

Defining Asset Management

Prior to assessing the analysis methods for each organization, it's important to investigate how each entity views asset management. Asset management is a broad term that encompasses a large range of activities related to maintaining an entity's infrastructure. Managing these assets requires various tasks including condition assessment, inventory, allocating money to programs and activities, and numerous work-related activities. In the article entitled "Assessment and Renewal of Water Distribution Systems" the author defines assessment as "an information-based process used for life-cycle facility management across organizations". Conversely, one definition found in the FHWA document defines asset management as "a set of guiding principles and best practice methods for making informed resource allocation decisions, and improving accountability for these decisions". Regardless of the ambiguity of these definitions, an examination of the documents reveals that both industries view asset management as a form of assessing the condition of their existing system components (inventory) in order to help management make informed decisions regarding system renewal and replacement activities.

Life-Cycle Cost Analysis

Life-cycle costs analysis is beneficial in asset management in that it helps quantify the benefits of renewal/replacement activities by assessing their potential benefit to the users and service life of the infrastructure. In the case of the water distribution industry, although in theory this form of analysis can provide a plethora of information, its application is somewhat difficult. The majority of the pipeline infrastructure is below ground, implying a limited visibility at best, which infers that most users don't notice pipelines unless there's a problem such as a break. This characteristic makes it extremely difficult to quantify the immediate benefits to the users. In terms of quantifying the improvements to the system itself, because the vast majority of the existing pipelines have already surpassed their original design life and still function, it's rather difficult to motivate the industry to improve on its once-every-200-years replacement rate rather than employ a reactive (i.e. wait for failure) approach. Complicating the equation are several other relevant factors including: the high replacement/renewal costs, scarcity of capital, and the