A. COURSE INFORMATION

Course number/section: ESCI 6230.W01
Class meeting time: 8:00 am-5:00 pm M-W, August 17-19, 2020
Class locations: On-line Live Web Based Course (Category I)

Special Course Configuration –Because of the social distancing policies facing our nation the 40-hour Oil Spill Response course that was previously offered has now been separated into two separate courses, a theory course and a lab/field exercise course. This theory course has been developed to fulfill the requirements of an OSHA 24-hour training program for oil spill responders. Successful completion of the course will earn the attendee a 24-Hour Certificate of Completion from the National Spill Control School (NSCS).

After completing this new prerequisite course should also take the two-day (1 SCH) Oil Spill Response Field Exercise course where students will have two days of oil spill response activities on the water. These two days will generally be scheduled on Saturdays. Upon completion of both sections, this online theory course and the field exercise course, the students will be awarded a 40-hour certificate of completion.

Course Website: Blackboard and WebEx Webinars

B. INSTRUCTOR INFORMATION

Instructor: H.A. Tony Wood
Office location: 6300 Ocean Drive, NRC Ste. 1100, Corpus Christi, TX 78412
Office hours: This is a synchronous online 24-hour OSHA certification course from 8 am until 5 pm over 3 days, M-W. The instructor will be available for personal online consultation and virtual meetings from 0730-0800 and 1700-1800 during the course and/or from 0800-1700 on the Thursdays and Fridays before or after the course. Students wanting to meet virtually with the instructor should indicate that via e-mail. Virtual meetings can occur by using telephones, Jabber, on WebEx, Zoom, Facetime, or Facebook Messenger.
Telephone: (w) 361-825-3335
e-mail: tony.wood@tamucc.edu
Appointments: Must be requested by e-mail and confirmed in instructors Outlook Calendar.
C. COURSE DESCRIPTION

Catalog Course Description


Extended Course Description

This course meets the requirements for the U.S. OSHA 24-hour training for Oil Spill Responders. It provides oil spill response safety training as specified in 29 CFR 1910.120 and qualifies students to support non-contact oil spill response operations at the local, state, and federal level. Attendees must participate in 24 hours of instruction. This intense short course is offered over three consecutive 8-hour class days.

This course includes studies of: the laws and regulations governing oil spill prevention and response from a historical perspective; the physical, chemical, and biological processes related to oil in the environment; and the established strategies and tactics for preventing and managing oil spills.

This course is designed to provide professional certification and initial oil spill response safety training for environmental science or emergency response students. It meets the off-site training requirements for U.S. OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations as specified in 29 CFR 1910.120 and qualifies students to support non-contact oil spill response operations at the local, state, and federal level. Material covered in this course includes the training described in the Occupational Safety and Health Administration (OSHA) publication OSHA 3172: “Training Marine Oil Spill Responders.” Under OSHA’s Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) in 29 CFR 1910.120 attendees must participate in 24 hours of instruction. Students seeking certification for this OSHA training MUST attend all class sessions.

Three separate professional certifications will be achieved during this 3-day course including:

- 24-Hour HAZWOPER for Oil Spill Responders
- ICS 100
- ICS 700

The last 2 courses may be taken at any time online through the FEMA.gov website. Certificates for the ICS courses must be presented to the instructor for credit.

This course is recommended for students expecting to enter the environmental workforce or internships within the next year. This course includes studies of: the laws and regulations governing oil spill prevention and response from a historical perspective; the physical, chemical, and biological processes related to oil in the environment; and the established strategies, tactics, and equipment for managing oil spills. There will be no field work in this course.
D. **PREREQUISITES AND COREQUISITES**

**Prerequisites:** None

**Co-requisites**
- Students must complete the web-based FEMA NIMS and ICS training programs (ICS 100 and ICS 700) online. (If the student already completed 100 and 700 for another course then ICS 200 and 700 are acceptable alternatives). The certificates of completion must be shown to the instructor. These may be completed at any time before or as homework during the week of the course.
- Online attendance in this course is mandatory. This is an OSHA certification course requiring 24 hours of attendance. Students who must miss any portion of a class are responsible for making up the time prior to award of the certification. Any course hours not completed prior to the end of the semester will be given an incomplete (I) grade. If the time is not made up during the following semester the grade will be converted to an “F”.
- Overnight homework assignments may be given during the course. These assignments will be due the next class day. Late assignments will receive less than full credit for the assignments. Assignments will not be accepted after the third course day and a grade of “0” will be assigned for any missing or late assignments.
- One major examination will be given during the course. A minimum score of 70% is required for NSCS certification and to meet OSHA standards.
- The course may include guest speakers representing industrial, regulatory, or spill response organizations or specialized environmental issues. Students will be responsible for material covered by these speakers and it may be included on the exam.

**Exclusions**
Students who have taken this course (ESCI 6230) may not take ESCI-4330, ESCI-6330, or ESCI 4490/6490 Special/Advanced Topics Oil Spill Response) for credit.

E. **REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES**

The books and resources required for this course are all available online for free:
F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Understand and be able to describe ICS management systems.
2. Understand the historical, societal, economic, and political implications of oil spills.
3. Understand the effect of spilled oil on the environment.
4. Understand the various types of shorelines and how oil behaves when it reaches shore.
5. Understand the sources and effects of weathering on oil spills.
6. Be able to predict how much oil will evaporate or disperse naturally.
7. Be able to model a spill trajectory in US coastal waters.
8. Understand oil spill response strategies and tactics.
9. Be able to describe spill response methods and equipment.
10. Understand the failure mechanisms that can impede effective spill response.
11. Graduate students taking this stacked course will be required to assist with a course development or delivery project. Various alternative tasks may include development and/or delivery of a course training topic, videography, organizing an activity session, recordkeeping, or other assigned task.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

This is a live, synchronous-delivery, webinar based course. It is 100% online in the TAMU-CC Category “I”. WebEx will be used to conduct class lectures and discussions on the assigned dates from 0800 (8 am) to 1700 (5pm) over each of the 3 course days. Blackboard will be used to file course materials and to administer timed exams. Attendance is mandatory in all sections of the course. Breaks will be given periodically throughout the course. Some short (20-30 minute) response planning activities will be conducted. Students may do some of these activities outdoors.
H. MAJOR COURSE REQUIREMENTS AND GRADING

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance &amp; Participation in all Modules</td>
<td>30%</td>
</tr>
<tr>
<td>ICS Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Exams</td>
<td>40%</td>
</tr>
<tr>
<td>Graduate Assignment</td>
<td>20%</td>
</tr>
</tbody>
</table>

This is an OSHA certification course requiring 24 hours of attendance. A certificate of completion for this course will only be awarded if there is 100% perfect attendance (or missed hours are made-up) and if a score of 70% or higher is achieved on the course exam.

I. COURSE CONTENT/SCHEDULE

This schedule is intended to serve as general guidance. Weather, student abilities, extended discussions on specific and current topics, or other factors may result in significant adjustments to this schedule.

This is an online course

1.0 Course Introduction – Syllabus, schedule, assignments, expectations, and underlying principles and concepts of the NSCS

1.1 Oil Spill History
   1.1.1 Historical oil spills, spill sources and causes
   1.1.2 Video: Dispatches from the Gulf from GoMRI
   1.1.3 Class Discussions regarding Gulf Spill of 2010

1.2 Oil Spill Regulations and Agencies
   1.2.1 Regulations
   1.2.2 Regulatory Agency Overview
   1.2.3 Federal Agencies – USCG, USEPA, OSHA, NOAA, USFW
   1.2.4 State Agencies – TGLO, TRRC, TPWD
   1.2.5 International

1.3 Oil Spill and Response Management
   1.3.1 Response Priorities
   1.3.2 Video: ICS & Unified Command
   1.3.3 Logistics & Communications
   1.3.4 Response organizations
   1.3.5 Contingency planning, training
   1.3.6 References and Resources: ESI, Oil Spill Toolkit, TIPS Plans, etc.
   1.3.7 Exercise: Standard ICS forms

2.0 Oil Spill Responder Safety and Health
2.1 Risks and Assessments
2.2 Chemical Hazards
2.3 Biological Hazards
2.4 Heat & Exposure
2.5 PPE
2.6 Zones of Control
2.7 Transportation Safety
2.8 Decontamination
2.9 Site Safety Plans ICS 208
2.10 Jobsite Safety Analysis Exercise
2.11 Logistics and Communications

3.0 The Science of Oil Spills
3.1 Oil Types
3.2 Oil Properties, Characteristics, and Behavior
3.3 Weathering Processes
3.4 Video: Petroleum Leaks Underground

4.0 Surveillance and Tracking
4.1 Estimating the volume of oil releases
4.2 Visual Observation
4.3 Photography with Solocator Exercise
4.4 Forecasting oil movements in the environment
4.5 Evaluating dispersion and evaporation using Adios
4.6 Adios Exercise on Computer
4.7 Modelling oil movement in coastal waters using Gnome
4.8 Gnome Exercise

5.0 Techniques, Technologies, & Tactics with Boom and Skimmers
5.1 Video: Countermeasures on Water
5.2 Boom = Booming Strategies, Deployment, and Failures
5.3 Anchor Systems
5.4 T-Posts and Shore Anchoring
5.5 Shore-sealing & Tidal Boom

6.0 Shoreline Protection
6.1 Shoreline Types and Habitats
6.2 Safety Considerations
6.3 Shoreline Protection Measures

7.0 Chemical Treatments
7.1 Regulatory Requirements for Use
7.2 Dispersants
7.3 Herding Agents
7.4 Surface Washing Agents
7.5 Solidifiers

8.0 In Situ Burning
8.1 Basics
8.2 Equipment
8.3 Operations

9.0 Skimmers
9.1 Skimmer types
9.2 Skimmer selection
9.3 Skimmer Video Demonstrations
9.4 Video: Kvichak Operations

10.0 Sorbents
10.1 Selection Criteria
10.2 Sorbent Types

11.0 Transfer Systems
11.1 Pumps
11.2 Tanks and Containers

12.0 Shoreline Response
12.1 Shoreline Assessments and a Short Overview of SCAT
12.2 Shoreline Treatment Options
12.3 Monitored Natural Attenuation
12.4 Shoreline Equipment from DWH GOM Beach Cleanups

13.0 Oiled Wildlife Response
13.1 Regulatory Considerations
13.2 Safety Guidelines
13.3 Wildlife (and Domestic Animal) Deterence
13.4 Specific Issues (by type of animal)

14.0 Waste Management
14.1 Regulatory Issues
14.2 Waste Storage
14.3 Transportation Logistics
14.4 Disposal Methods (incl. Recycle/Reuse, In-situ, & Offsite)
14.5 In-situ Treatment (incl. Bioremediation/Landfarming)
14.6 Commercial Disposal Sites (incl. Landfills & Incineration)
14.7 Video: Waste Management
14.8 In-Situ Treatment

15.0 Exam
Note: Changes in this course schedule may be necessary. If needed, they will be announced to the class by the instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. **COURSE POLICIES**

**COVID-19**

**Face Coverings** - (cloth face covering, surgical mask, etc.) must be properly worn in all non-private spaces including classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is difficult to reliably maintain. Extra masks will be made available if needed.

**Attendance/Tardiness**
Attendance is mandatory. This is an OSHA certification course requiring 24 hours of attendance. Students who miss any portion of a class are responsible for making up the time prior to award of the certification. Any course hours not completed prior to the end of the semester will be given an incomplete (I) grade. If the time is not made up during the following semester the grade will be converted to an “F”.

**Late Work and Make-up Exams**
This is a 3-day short course requiring 24 hours of attendance. Any absences must be made-up, and all work assignments or exams must be completed to score a passing grade and achieve NSCS certification.

**Extra Credit**
None

**Cell Phone & Laptop Use**
Students are expected to use computers and WebEx for all lecture portions of this class. There may be some outdoor activities related to safety or response planning. Students are not expected to take their computers outside but may want to use smart-phones during the outdoor activities. If they use equipment outdoors then they do so at their own risk. Any equipment taken outside should be protected by a waterproof bag or case. The instructors do not have any responsibility for such equipment. Texting and voice calls should not be conducted during the instructional periods but are allowed during breaks.

**Food in Class**
Frequent hydration is recommended during any outdoor class activities.

**Missed Exams**
All exams, assignments, and make-up work must be completed by the last scheduled class day. A grade of incomplete will be assigned if course work is not completed and it will have to be completed during the next regular semester.

**Participation**
Students are expected to behave as if they were an integral part of a spill response team. Participation in webinar discussions is expected and is a part of the course grade.

**Safety**
industrially oriented safety course (see OSHA Pub. 3172). Any behaviors that show disregard for the safety of the student or peers in the class will not be tolerated and may be grounds for dismissal from the class.

Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Online/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high-quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The University hopes that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with your academic advisor, the Financial Aid Office, and your instructor, before you decide to drop this course. Should dropping the course
be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

• **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C0.03, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is required to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C0.03, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://academicaffairs.tamucc.edu/rules_procedures/assets/13.02.99.c0.03_student_grade_appeals.pdf](http://academicaffairs.tamucc.edu/rules_procedures/assets/13.02.99.c0.03_student_grade_appeals.pdf). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

• **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

  [http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)

• **Civil Rights Complaints**
  Texas A&M University-Corpus Christi is committed to fostering a culture of caring and respect that is free from discrimination, relationship violence and sexual misconduct, and ensuring that all affected students have access to services. For information on reporting Civil Rights complaints, options and support resources (including pregnancy support accommodations) or university policies and procedures, please contact the University Title IX Coordinator, Sam Ramirez (Samuel.ramirez@tamucc.edu) or Deputy Title IX Coordinator, Rosie Ruiz
(Rosie.Ruiz@tamucc.edu) x5826, or visit website at Title IX/Sexual Assault/Pregnancy.

**Limits to Confidentiality.** Essays, journals, and other materials submitted for this class are generally considered confidential pursuant to the University’s student record policies. However, students should be aware that University employees, including instructors, are not able to maintain confidentiality when it conflicts with their responsibility to report alleged or suspected civil rights discrimination that is observed by or made known to an employee in the course and scope of their employment. As the instructor, I must report allegations of civil rights discrimination, including sexual assault, relationship violence, stalking, or sexual harassment to the Title IX Coordinator if you share it with me.

These reports will trigger contact with you from the Civil Rights/Title IX Compliance office who will inform you of your options and resources regarding the incident that you have shared. If you would like to talk about these incidents in a confidential setting, you are encouraged to make an appointment with counselors in the University Counseling Center.

- **Statement of Academic Continuity**
  
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

**L. OTHER INFORMATION**

- **Academic Advising**
  
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**

The instructor reserves the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. Any necessary changes will be announced in a timely manner during regularly scheduled lecture periods.