

COLLEGE OF SCIENCES & ENGINEERING TECHNOLOGY  
ENGINEERING TECHNOLOGY DEPARTMENT  
**COURSE SYLLABUS**  
**ETCM 3368 / SECTION 02 / CRN 24103**  
**CONCRETE/MASONRY CONSTRUCTION**  
**3 CREDIT HOURS**  
**SPRING 2018**

**LOCATION:** WESTMORELAND ENGINEERING TECHNOLOGY LABORATORY (WETL), ROOM 101  
**MEETING TIME:** LECTURE TIME: WEDNESDAY 1:00 PM – 3:50 PM  
**INSTRUCTOR:** KEITH L. COOGLER  
**OFFICE:** WETL, ROOM 105  
**CONTACT:** OFFICE PHONE: 936.294.1203  
FAX: 936.294.1193  
E-MAIL: ith\_klc@shsu.edu  
**Office Hours:** Posted on bulletin board in foyer of WETL building and at WETL Room 105

**COURSE DESCRIPTION:**

This course is an investigation into concrete and masonry construction methods, testing, and design used in residential and commercial construction is made. Topics include: concrete slab, wall, footing, and pier construction; brick and concrete masonry unit (CMU) wall construction; and decorative concrete / masonry design techniques.

**COURSE OBJECTIVES/ FORMAT:**

After completion of the course:

1. The student will learn the chemistry, manufacture, and inspection and testing of cement and its applications in concrete and masonry construction.
2. The student will learn and be able to apply their knowledge of concrete mix design, placement, and finishing as it relates to construction management.
3. The student will learn and be able to apply their knowledge of masonry and stone construction techniques as it relates to construction management.

The course will consist of primarily of lecture and student laboratory experiences. All students are expected to participate in all laboratory assignments.

**TEXTBOOKS:**

Required:  
Kosmatka (2016). **Design and Control of Concrete Mixtures, 16<sup>th</sup> Edition.**  
Portland Cement Association. Skokie, Ill.  
ISBN: 9780893122775

## SUPPLIES:

Each student **must provide** their own safety eye protection (ANZI Z87.1). **No laboratory work will be allowed without eye protection.** Personal items (hand tools, layout tools, etc.) may be used with instructor's permission but in case of loss or damage to the item(s), are the student's responsibility. These items are for the individuals own use only.

Lab exercises require working with materials which can be damaging to clothing, therefore be prepared. It is recommended that the student wear clothing which is durable and of work quality. This includes footwear, pants, shirts, and hair and hand protection

## EXPECTATIONS:

**ATTENDANCE** has a major influence on participation, lab assignments, and presentation. An absence affects all three grading criteria. If a student is absent, they can not participate. If a student is absent during laboratory periods, they can not demonstrate their abilities. If a student is absent, they can not exhibit their work.

Every student is expected to be present and **on time** for every class. Punctual students are normally annoyed by the disruption of those who continually walk into class late. You are tardy whether you come in late or leave early. I will take roll at the beginning of each class session. An attendance chart will be provided that **YOU** (the student) will identify your seat and sign your name to. If **YOU** (the student) do not sign in, **YOU** will be acknowledging your absence.

**Accumulate eight (8) hours absence and your grade will drop by a letter, twelve (12) hours and it drops by two (2) letters.**

In case you are absent, whether excused or unexcused, you are still responsible for the material covered. **I will feel obligated to disseminate material and instructions one time only.** If you are absent or late, the responsibility for obtaining handouts and information is incumbent on you. You would be wise to establish relationships with fellow students for assuring that you remain well-informed and that you are adequately prepared for exams.

Should it become necessary to be absent, please inform the instructor or leave message with the department secretary – Technology program.

936-294-1191

## COURSE EVALUATION:

A **minimum** of three examinations (tests) will be given to determine mastery of course content. Exams will constitute 30% of the total grade while laboratory activities will be worth 25%. Participation in classroom discussions and participation in laboratory management including housekeeping and control of tools and materials will be worth 25 %. Research is worth 20% and represents group and individual projects.

Each unit of study consists of review questions, laboratory experiences and exams. A minimum of three exams will be given to determine mastery of course content. Exams will constitute 30% of the total grade while laboratory and classroom activities will be worth 70%. Participation in classroom discussions and participation in laboratory management including housekeeping and control of tools and materials is expected (see EXPECTATIONS). Missed work or exams may be submitted or made-up when an excused absence is granted.

Grading shall be according to the following:

Participation	25%	(includes attendance)
Lab assignments	25%	
Research Assignments	20%	(Group & Individual)
Group project / Presentation	10%	
Individual Presentation	10%	
Exams	30%	
Total	100%	

Course letter grades will be assigned according to the following:

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

#### **ACADEMIC HONESTY:**

The University expects all students to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

#### **TELEPHONES AND TEXT MESSAGERS IN THE CLASSROOM:**

The use of electronic devices that perform the function of a telephone or text messenger during class-time is prohibited with exceptions: 1) arrangements for handling potential personal emergency situations may be granted at the discretion of the instructor, 2) under campus emergency situations these devices may be used. Failure to comply with the instructor's policy could result in expulsion from the classroom or with multiple offenses, failure of the course.

Any use of a telephone or text messenger or any device that performs these functions during a test period is prohibited. These devices should not be present during a test or should be stored securely in such a way that they cannot be seen or used by the student. Even the visible presence of such a device during the test period will result in a zero for that test. Use of these devices during a test is considered de facto evidence of cheating and could result in a charge of academic dishonesty (see student code of conduct <http://www.shsu.edu/students/guide/StudentGuidelines2010-2012.pdf#page=29>).

#### **USE OF TOBACCO AND TOBACCO PRODUCTS:**

Sam Houston State University is a tobacco free campus and all tobacco products are prohibited in all buildings and outdoor public areas on campus.

#### **CLASSROOM RULES AND CONDUCT:**

Laboratory safety rules must be observed at all times and will be enforced by the instructor and lab assistants. Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and,

thus, impedes the mission of the university. Cellular telephones and pagers must be turned off before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy. No equipment may be removed from the laboratory.

**VISITORS IN THE CLASSROOM:**

Unannounced visitors to class must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom.

**DISABILITY STATEMENT:**

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail [disability@shsu.edu](mailto:disability@shsu.edu)). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: <http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>

**STUDENT ABSENCES ON RELIGIOUS HOLY DAYS POLICY:**

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.

University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). This request must be made in the first fifteen days of the semester or the first seven days of a summer session in which the absence(s) will occur. The instructor will complete

a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed.

**INSTRUCTOR EVALUATIONS:**

All students are asked to complete a course / instructor evaluation near the end of the semester.

**COURSE CONTENT / OUTLINE:**

1. SAFETY – hazards to avoid in the laboratory, personal protective equipment, proper use of tools and equipment.
2. Uses of concrete, masonry, and stone in construction.
3. Cement manufacturing, chemistry, specification, and testing.
4. Concrete mix designs and modifications. Concrete placement methods and technology.
5. Concrete reinforcing. Slab design and construction methods.
6. Wall design and construction methods. Piers and footing design and construction methods. Elevated slab design and construction methods.
7. Prefabrication with concrete (beams, boxes, walls, ornamental). Prefab form design and construction techniques  
**[ Group Project Submittals Due]**
8. Submerged concrete construction techniques. Architectural techniques (stencil, color, texture, capping, shot-crete, stucco).
9. Masonry construction applications. Masonry cement chemistry, specification, and testing.
10. Brick styles and manufacture. CMU (concrete masonry unit) styles and manufacture.
11. Brick and CMU bonds. Brick and CMU reinforcing and support.
12. Brick and CMU placement and construction methods.
13. Special masonry applications (high heat, high walls, arches, lintels).
14. Stone types and applications. Placement and bonding techniques.
15. Cut stone slab construction techniques (stacking, hanging).
16. Architectural treatments (etching, engraving, and carving).

***The above schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances or by mutual agreement between the instructor and the students.***

## PROJECTS AND PRESENTATIONS

**GROUP PROJECTS** require members to collaborate in the design, construction, and formal presentation of a product that is useful. The group will conceive and design a product which has utility; performing necessary design work, computations, and specifications. Construction will be performed under the constraints of the design and specifications. The group will maintain all necessary documents (pictures, test results, etc.) and perform a formal presentation to the class (approximately 20 minutes) on the project. This presentation should utilize a project document placed on Black Board or handout along with some form of presentation media (posters, overheads, Power Point, etc.).

*Project Submittal date:* **TBA**  
*Presentations: (All Groups)* **TBA**

**INDIVIDUAL RESEARCH PROJECTS** can be field studies, library, or Internet research on topics pertaining to the subject matter of this course. A written composition (1-2 pages) with references (APA 5<sup>th</sup> Ed.) will be prepared and posted to Black Board. A brief (10 minute) presentation will be made to the class on the project.

*Topics assigned:* **TBA**  
*Presentations begin:* **TBA**