

Course Syllabus
IT 267 / Section 01 / Cid 6930/6941
Elements of Metal Technology
3 Credit Hours
Fall 2007

Location: ITB, Room 101

Meeting Time: Lecture time: Thursday 2:00-4:00
Lab Time: Thursday 4:00-6:00

Instructor: John S little

Contact: Office Phone: 294.1203

Cell: 936.577.0300

Fax: 936.294.1232

E-Mail: Thursday 1:00-1:30 /6:00-6:30

Office: **To be announced later**

Course Description:

This course is a study of materials, methods, and design elements of metal building systems found in residential and commercial construction. The student is introduced to metalworking methods and techniques commonly found in construction practice.

Course Objectives/ Format:

After completion of the course, the student will be able to:

1. Identify, select, and specify materials and appropriate construction tools and equipment for erecting metal buildings and systems.
2. Describe hazards associated with construction of metal building systems.
3. Have an understanding of the project management related to metal building system construction.
4. Understand common problems and failures and avoidance of such in metal frame construction.
5. Have an understanding of metalworking skills generally found in construction (welding, metal forming, foundry, forging, tempering, alloys and the like).

The course will consist primarily of lecture and student laboratory experiences. (Some lab activities will consist of off campus field trips and/ or activities in which each student will be expected to attend and negotiate transportation to and from.) All students are expected to participate in all laboratory assignments.

Textbook:

Alexander Newman. Metal Building Systems: Design and Specifications, Second Edition. McGraw-Hill, 2004 ISBN: 0-07-140201-2.

Supplies:

Each student must provide their own safety eye protection (ANZI Z87.1). No laboratory work will be allowed without eye protection.

Students must be properly attired, no loose clothing or jewelry, no open toed shoes and no long or loose hair.

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 individual's own use only.

Metal materials will be provided for practice welding (fuel-gas and arc).

The student will be required to procure metals for all other work.

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 cannot participate. If a student is absent during laboratory periods, they cannot demonstrate their abilities. If a student is absent, they cannot 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%. 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%	
<u>Exams</u>	<u>30%</u>	
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.

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 phones 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 SHSU that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any academic or Student Life program or activity. Disabled students may request help with academically related problems stemming from individual disabilities from their instructors, school/department chair, or by contacting the Chair of the Committee for Continuing Assistance for Disabled Students and Director of the Counseling Center, Lee Drain Annex, or by calling (936) 294-1720.

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.

Metal Building System Topics

- I History of Metal Building Systems
- II Information Resources
- III Structural loads affecting design and construction
- IV Framing
 - A. Frame Types
 - B. Frame components
- V Roofing systems
- VI Walls systems
- VII Insulation
- VIII Procurement of materials and building systems
- IX Problems and failures
- X Foundations
- XI Design trends
- XII Specialized construction
 - A. Re-roofing
 - B. Building cranes
 - C. Problems in construction

Metalworking topics

- I Welding methods and Techniques
 - A. Fuel gas welding
 - B. Shielded Metal Arc Welding
 - C. Gas Metal arc welding
 - D. Tungsten metal arc welding
 - E. Resistance welding (Spot Welding)
- II Cutting methods and techniques
 - A. Fuel gas cutting
 - B. Plasma arc cutting
- III Metal sawing
- IV Metal drilling
- V Metal forming
 - A. Metal shear
 - B. Metal brake
 - C. Notcher and punch
 - D. Slip rolls
- VI Wrought Iron Work
- VII Foundry
 - A. Pattern design and fabrication
 - B. Mold making
 - C. Casting
- VIII Corrosion Control
 - A. Coating
 - B. Cathodic protection

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

INDIVIDUAL RESEARCH PROJECTS can be field studies, library, and/or Internet research on topics pertaining to the subject matter of this course. An original written composition (2-3 pages) with references (APA 5th Ed.) will be prepared and posted to Black Board. A brief (10 minute) presentation will be made to the class on the project.

Topics and due dates to be announced.