I. TITLE
Construction Materials, 4 credit hours
T R 8:00am-9:15am, IT 106
Lab A, T 9:30am-11:20am, IT 103
Lab B, R 9:30am-11:20am, IT 103

II. DESCRIPTION
Basic properties of materials used in construction: Concrete, asphalt, aggregates, and timber. Design procedures, field control and adjustments. Lecture and laboratory.

III. PURPOSE
To develop an appreciation and understanding for the various advantages and disadvantages of the most common building materials.

IV. OBJECTIVES
A. Define and understand the most commonly used construction material terms.
B. Become able to make design decisions about the proper selection and use of construction materials.
C. Know and be able to apply basic materials test as outlined in ASTM Standards.
D. Write well-organized laboratory reports to communicate accurately and effectively with narrative, graphs and equations.

V. CONTENT
1. Principles of Testing and Inspection
   a. Properties of construction materials
   b. Materials testing
   c. Standard specifications
2. Aggregate
   a. Properties and uses
   b. Tests
3. Concrete
   a. Cement, aggregate and water
   b. Concrete and mixtures
   c. Concrete proportioning
4. Bituminous Materials
   a. Tar and pitch
   b. Asphalt paving
   c. Asphalt roofing.
5. Construction Material Experiments
   a. Aggregate Classification
   b. Making and curing concrete samples
   c. Properties of fresh concrete
   d. Compression testing of concrete
VI. INSTRUCTION

A. Lectures and classroom participation (5%)
B. Homework (15%)
C. Labs (6-8) (20%)
D. Quizes - 2 (30%)
E. Mid-term Exam (15%)
F. Final Exam (15%)

All homework is to be submitted at the beginning of class, neatly printed on engineering grid paper with multiple pages stapled together.

Grading Scale

90-100% A 60-69% D
80-89% B Below 60% E
70-79% C

VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES

A. Field Trips, labs, and guest lectures

VIII. RESOURCES

2. PCA, Design and Control of Concrete Mixtures, 14th Edition (www.cement.org/bookstore)
3. Sweets Catalogs
4. Class handouts.

IX. ATTENDANCE POLICY

This course will adhere to the policy published in the MSU Undergraduate Bulletin. Attendance is expected and will greatly affect performance. More than three unexcused absences will result in failure of the course. Cell phone use is prohibited during class.

XIV. ACADEMIC HONESTY POLICY

This course will adhere to the policy published in the MSU Undergraduate Bulletin. Disciplinary action may result in failure of this course.

XV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities.