



## COURSE SYLLABUS

**COURSE NUMBER:** CIVE 528

**COURSE TITLE:** DESIGN OF LIGHT - FRAMED

STRUCTURES

### **COURSE DESIGNATION**

TECHNICAL ELECTIVE FOR CIVIL AND CONSTRUCTION ENGINEERING MAJORS.

### **COURSE DESCRIPTION**

MATERIAL PROPERTIES FOR WOOD AND METAL STUDS. LOADS AND STRUCTURAL FORCES FOR BUILDINGS. DESIGN OF BEAMS, COLUMNS, BEARING STUD WALLS. SEISMIC FORCES AND LATERAL FORCE RESISTING SYSTEMS. ROOF, FLOOR AND SHEAR WALL DESIGN. COMPOSITE BEAMS. CLASS PROJECT IN BUILDING STRUCTURAL ANALYSIS DESIGN. (3 CREDITS)

### **PRE-REQUISITE**

CREDIT IN CIVE 321.

### **LECTURES/LABORATORY SCHEDULE**

LECTURE — 3 SESSIONS PER WEEK, 50 MINUTES PER SESSION

### **TEXTBOOKS AND REFERENCES**

1. BREYER, D., FRIDLEY, K., COBEEN, K., AND POLLOCK, D., "DESIGN OF WOOD STRUCTURES ASD/LRFD," SIXTH EDITION, 2007. (REQUIRED)
2. YU WEI-WEN AND LABOUB, R. "COLD — FORMED STEEL DESIGN," FOURTH EDITION, 2012. (RECOMMENDED)
3. NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION, SUPPLEMENT AND COMMENTARY, NATIONAL FOREST PRODUCTS ASSOCIATION, WASHINGTON, D.C., 2012. (REQUIRED)
4. SPECIFICATION FOR THE DESIGN OF COLD — FORMED STEEL STRUCTURAL MEMBERS, AMERICAN IRON AND STEEL INSTITUTE, WASHINGTON, D.C., 2012. (RECOMMENDED)

### **COURSE LEARNING OUTCOMES**

TO PROVIDE THE STUDENT WITH A THOROUGH UNDERSTANDING OF MATERIAL PROPERTIES, STRUCTURAL DESIGN AND DETAILING FOR LIGHT — FRAMES STRUCTURES USING WOOD AND METAL STUDS.

### **TOPICS COVERED**

- INTRODUCTION AND MATERIALS.
- GRAVITY LOADS.
- BEAM DESIGN.
- COLUMN DESIGN.
- COMBINED STRESSES.
- FIRST EXAM.
- LATERAL LOADS.
- HORIZONTAL DIAPHRAGMS.
- SHEAR WALLS.
- CONNECTIONS AND DETAILS.
- FINAL EXAM.

### **GRADING**

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| 1. HOMEWORK ASSIGNMENTS AND QUIZZES | 20% |
| 3. EXAMS                            | 50% |
| 4. FINAL                            | 30% |