Course Syllabus

(3-0) 3 Credits – Prerequisite: CEE 456 or CEE 458 (old course number)

Syllabus: Design for torsion, simple space structural elements such as corner beams, curved beams, and free-standing staircases. Yield line theory and design of two-way reinforced slabs and floor systems. Design of a multi-story frame building system.

Instructor: Anil K Patnaik (Room CM 243)  Email: Anil.Patnaik@sdsmt.edu
Office Hours: T & TH 11:00 to 12:00 PM  Phone: 394 2442

Lectures: W & F – 11:00 AM to 12:30 PM. Attendance is required.

Reference Material

(5) “Building Code Requirements for Structural Concrete (ACI 318-05) and Commentary (ACI 318R-05)”, American Concrete Institute, Farmington Hills MI, 2005.
(7) Technical Papers, handouts and reports.
(8) Internet resources.

Grading System: Assignments 20%  Grading Bracket: A 93-100
Two Tests 40%  B 83-92
Building Design Project 25%  C 73-82
Deep Beam Lab Project 15%  D 65-72
No final examination for this course  F < 64

Format for Design Reports and Homework Assignments

Student reports must be neatly prepared and submitted in a professional manner. Use a suitable word processor to develop reports, and EXCEL to develop graphs and figures. Use pictures and figures in your presentations. Use engineering calculation pads, AutoCAD/MicroStation for drawings and sketches, most economical sections in design problems, cite references to the source of the reported material, refer to relevant specifications, and state all the assumptions.
Topics to be covered

It is intended to cover the following advanced topics on reinforced concrete design in this course (time permitting):

(1) Introduction
(2) General method of flexural analysis of beams using concrete stress-strain curves
(3) Beam design for torsion
(4) Strut and Ties model: Deep beams and Corbels
(5) Column Design using interaction diagrams including design of slender columns
(6) Structural walls
(7) Multi-story frame building design – including a design project
(8) Computer applications for reinforced concrete design
(9) Two way reinforced slabs and floor systems

ADA Statement:
Students with special needs or requiring special accommodations should contact the instructor A.K. Patnaik at 394-2442 and/or the campus ADA coordinator, Jolie McCoy at 394-1924 at the earliest opportunity.

Freedom in Learning:
Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should contact the dean of the college which offers the class to initiate a review of the evaluation.