Grace Imson, Instructor
Gimson@ccsf.edu
(650)8612176

The Instructor was employed by City College of San Francisco in 2005 as an Adjunct instructor for Engineering Technology then at present a Math Instructor. She was a professor for 20 years in Saint Louis University teaching in the College of Engineering. She has a degree in Bachelor of Science in Civil Engineering and a master degree in Education and Administration and Supervision. She has the following certificates: California Teacher Credential authorized for Mathematics, Computer Applications, Earth Science and Elementary-Secondary Basic Skills; she has CBEST – Lifetime Certificate; Engineers in Training (EIT-USA); Professional Engineers License and GSA-DHS Clearance. She experienced teaching in all levels: K12, college, university level, Adult Ed & vocational school

June 15 to June 27, 2014
1:00 PM - 4:00 PM
Monday through Friday
City College of San Francisco
88 Fourth St., San Francisco
Room 618

To Enroll: (415)2676546
Regina Pacheco, Registrar
email: rpacheco@ccsf.edu

BRIDGE DESIGN

Bridge Design class aim is to introduce you to bridge engineering and let you experience the types of problems encountered and to help you "think" as would an engineer. It is a hands-on class, learning how bridges are designed and constructed. Students will learn design theories and technical drawing. The curriculum will be combined with mathematics, material science and technology in a fun and challenging way.

Course Goals: The student will understand and appreciate engineering principles and professional ethics. The students will cultivate leadership, teamwork and cooperation. The student will understand design theories and technical drawing. Another aim is to help the student make a career goal to look forward to.

The Classroom: This class is designed with easy introduction through lecture presentation and video, followed by a friendly discussion, then step by step problem solving.

Course Outline:
Day 1: Engineering vocabulary, Engineering principles, Math for Bridge Engineers. Projects are assigned.
Day 2: Principle of Equilibrium, Balance Beam, Homework AASHTO HS20, Planning of Projects
Day 3: Reaction Forces at the Supports of the Bridge, Introduction of Shear Force, Moment & Torque
Day 4: Principle of Center of Gravity and Maximum Loading of the Bridge
Day 5: The Bay Bridge Construction, Structural Analysis: Shear and Moment Diagrams
Day 6: Truss Analysis, Trigonometry (Scientific Calculators needed)
Day 7: Material Science and Steel Members, ASTM, then Project execution
Day 8: Professional Ethics and Execution of Project /s
Day 9: Kinds of Bridges, Finishing Project /s and Specification
Day 10: Presentation of project, Defense of Specification, Class party.

Proposed Projects: A bridge project with complete specification and structural analysis

MATERIALS NEEDED: First day of class: issuance of ***Student's Portfolio,*** it contains the lessons, activities, student diary and project plan. Students must purchase popsicle sticks (from Dollar store), and rubber glue, a scientific calculator-day 6