



## **COURSE ON “STRUCTURAL DESIGN BY EXPERIMENTS” (METHODS AND TOOLS OF EXPERIMENTAL AIDED DESIGN)**

*20 Mechanical Engineers from  
Bosnia, Herzegovina, Monte Negro, Serbia, Albania, Egypt*

### **Premise**

Design is a multidisciplinary activity for promoting the human wellness, taking into account anthropological needs and ecological constraints. Therefore, design is the central factor of innovative humanization of technologies and the crucial factor of cultural and economic exchange.

### **Aim of the Course**

The aim of the Course is the appraisal of Methods and Tools for a Design Methodology supported by Experimental Mechanics, in order:

- to instil in young Engineers and Technicians, to whom the Course is devoted, the importance of the experimental validation and tests analysis to support the modern methods of simulation.
- to learn laboratory techniques for the characterization of the response of mechanical components, structures and materials, for the interpretation of experimental and theoretical results, and for concise presentation of conclusions in an oral and written manner.

### **Topics covered by the Class/laboratory schedule**

- Statistical Characterization of Experimental Data. .
- Strain Measurement using Electrical Resistance Strain Gages.
- Transducer design, calibration and applications.
- Theory and Application of Optical methods.

### **Appraisal Methodology**

Students must convey their learning and understanding of engineering investigations through the use of computer assisted oral presentations of their experimental projects. Almost all assignments in this course are group activities which require the students to work effectively within their groups, contribute leadership, and produce a comprehensive/coherent written and oral description of their results.

### **Assessment of student progress toward course objectives**

There are written reports and some graded individual assignments in this course. The primary mode of assessment is a subjective evaluation by the instructor and all students within the course of the oral presentations prepared and presented by the student working within a group, on a specific project. Each student will present the results as a group effort with a written report and oral presentation.