BHARATIA VIDYA BHAVAN'S

SARDAR PATEL COLLEGE OF ENGINEERING

(An autonomous institution affiliated to University of Mumbai)

Mechanical Engineering Department of SPCE

Organizes Two Week Training Course (FDP) on

30th May - 10th June 2016

Pressure Equipment Design and Piping Engineering

AkerSolutions™

Under Technical Education Quality Improvement Program (TEQIP) in collaboration with Aker Solutions.

Organizing Body

Dr. P. H. Sawant	Principal
Dr. M. M. Murudi	Vice Principal and TEQIP coordinator
Mr. Sanjeev Nadkarni	Director - Engineering, Aker Solutions
Mr. R. Dipali	Knowledge Manager, Aker Solutions
Dr. Rajesh Buktar	Head of Mechanical Engineering Department
Dr. Nilesh Raykar	Course Coordinator
Prof. D. N. Jadhav	Course Co-coordinator
Prof. Kunal Bhavsar	Course Co-coordinator

ADDRESS FOR CORRESPONDENCE :
BHARTIYA VIDYA BHAVAN'S SARDAR PATEL COLLEGE OF ENGINEERING, MECHANICAL ENGG DEPARTMENT
BHAVAN'S CAMPUS, MUNSHI NAGAR, J.P.ROAD , ANDHERI(W), MUMBAI 400 058
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SARDAR PATEL COLLEGE OF ENGINEERING

Sardar Patel College of Engineering (SPCE) under the management of the Bhartiya Vidya Bhavan, was founded by Kulapati Dr. K. M. Munshi. It was established to meet the growing demand for engineering talent.

The foundation stone of the college was laid on 17th September 1961 by Shri.Y.B.Chavan (the then Chief Minister of Maharashtra who later became the Defence Minister of India.)

The college was inaugurated by the first Prime Minister of Independent India, Pandit Jawaharlal Nehru in 1962.The college is dedicated to Sardar Vallabhbhai Patel, an eminent nation builder of independent India.

The college is autonomous and affiliated to the University of Mumbai for the full-time degree and post graduate degree courses. The institute has set high standards for aspiring engineering students and also meets the need of quality education in the challenging world of business.

Over the last 50 years the college has gained an excellent reputation in the field of Technical Education.

SPCE is one of the few colleges that have received Grade 'A+' rating for its aided courses from the Govt. of Maharashtra which certifies the spirit of excellence that the institute has symbolized and always practiced. Institute celebrated its golden jubilee in the year 2012.

AKER SOLUTIONS

Aker Solutions India is a part of Aker Solutions, Norway, which provides oilfield products, systems and services for customers in the oil and gas industry world-wide. It employs approximately 17,000 people in about 20 countries and had aggregated revenues of over USD 7 billion in 2013.

Aker Solutions India is a leading provider of project management, engineering, procurement assistance and construction supervision services. We have been operating in India for over 50 years. We serve the entire value chain of the global oil and gas industry, from the design of subsea products, to processing facilities, refining, petrochemicals, and the allied industries.

Our strong customer focus and long-term relationships are a matter of pride to us. We have the enviable track record of successfully completing over 400 projects with over 60% of our business coming from repeat customers every year. Over the years, we have engineered projects on every continent except Antarctica.

WHO SHOULD ATTEND THE COURSE

This course is must for all engineers aspiring to be or already involved in engineering of process equipment and piping-for petrochemical, oil and gas, energy and other allied industry sectors. The course will be most beneficial for:

- ◊ Engineering graduates and post-graduates (B.E./B.Tech./M.E./M.Tech. in Mechanical, Production, Chemical and Petrochemical)
- ◊ Professionals in Design, Manufacturing or Operations of Process Industry
- ◊ Faculty members from academic institutions
- ◊ Diploma/Engineering students

ABOUT "PRESSURE EQUIPMENT DESIGN AND PIPING ENGINEERING" TRAINING COURSE

Why the training?

SPCE has identified the gap between the basic theoretical knowledge of pressure equipment design / piping engineering and its implementation to the practical challenges faced by the working professionals. We have thus made this unique training course which imparts the practical experience of handling real life complexities of the design and analysis of pressure equipment and piping systems. The current pressure equipment design and piping engineering tools have significantly progressed beyond the conventional design methods and have adopted sophisticated computerized analysis techniques.

Objectives

The objective of this training course is to add skills to understand the fundamentals of pressure equipment design, piping element design, piping layout, material and loading conditions encountered by present-day process plants. The course emphasizes on step-by-step learning of the techniques to perform design of system components. The course is tailored along the directives laid by the ASME Section VIII Division 2, ASME B31.1 and B31.3 codes which have implemented advanced numerical analysis methods such as finite element analysis (FEA) for ensuring safety and reliability of process plant equipment and piping systems.

Scope

The course will cover design of basic pressure parts such as shells, heads, nozzles, flanges and engineering of piping elements including flexibility analysis, selection of piping supports and basics of piping layout and drawing standards . Many of the topics will be discussed with practical examples and solutions obtained using computer software.

Significance

The training course stresses upon hands-on experience by the participants during the learning process. The course is interspersed with many illustrative numerical examples, sample analyses and processing of results coupled with sufficient theoretical background of the subject.

COURSE FEE AND ACCOMODATION CHARGES

Registration Fee				Accommodation Charges (per day)		
Student	Faculty (Non-TEQIP colleges)	Faculty (TEQIP colleges)	Industry / Sponsored	A/C room		Students' hostel room (2-3 person sharing)
				Single	Twin sharing	
Rs. 8,000	Rs. 15,000	Rs. 25,000	Rs. 40,000	Rs. 4,000	Rs. 2,000	Rs. 500

The registration fees includes Course Material, Media DVD and Breakfast/Tea-snacks/Working Lunch.
Registration fee should be paid in the form of cheque/DD drawn in the favor of "The Principal, SPCE". ***Cheque/DD shall be inclusive of accommodation charges.***
Accommodation is available on first-come first-serve basis.
VENUE: SEMINAR HALL (ROOM NO-213), Department of Mechanical Engineering, Sardar Patel College of Engineering.

CONTACT DETAILS FOR MORE INFORMATION

CONTACT	EMAIL	MOBILE
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Prof. Kunal Bhavsar (Faculty, Mechanical Engineering Department)	k_bhavsar01@spce.ac.in	9664344316

Note: *For form submission, fill the attached form and send the scanned copy to* ***r_buktar@spce.ac.in***

TRAINING SCHEDULE AND COURSE CONTENTS

DAY	CONTENTS	OUTCOMES
DAY 1	• Introduction to pressure equipment design and and piping engineering for process plants • Materials for pressure equipment and piping	• Learning basic concepts of pressure equipment design and piping engineering
DAY 2	• Loading types and theories of failure • Design for internal pressure • Design for external pressure / buckling • Nozzle reinforcement	• Understanding basic framework for evaluation and design of pressure parts • Ability to perform calculations for simple pressure components
DAY 3	• Introduction to design by analysis • Stress linearization concepts • Elastic analysis methods • Elastic plastic analysis	• Develop skill to conduct finite element based analysis of pressure components using industry standard software
DAY 4	• Protection against local failure and buckling • Introduction to fatigue analysis • Ratcheting analysis	• Exposure to methodologies to carry out advanced analysis of pressure equipment
DAY 5	• Flange and leak-tightness analysis • Wind and seismic calculations • Support skirt and saddle analysis	• Ability to design auxiliary parts
DAY 6	Industrial Visit	
DAY 7	Weekend Break	
DAY 8	• Introduction to Piping Engineering • International piping codes and standards • Piping material requirements • Stresses in piping system	• Understanding of Piping Engineering concepts • Exposure to piping analysis software
DAY 9	• Principles of piping and equipment layout • Design of piping elements such as elbows, mitre bends, • Design rules for pipe branches	• Understanding of challenges involved in piping and equipment layouts • Use of CAD tools for piping engineering • Design by rules for basic pipe elements
DAY 10	• Piping flexibility analysis • Piping support design	• Understanding design by analysis • Analysis using piping software
DAY 11	• Valve types and their selection • Exposure to advanced design methods	• Acquiring guidelines for valve selection • Application of advanced design tools
DAY 12	• Case studies in piping design • Piping failure analysis	• Implementation of piping engineering knowledge

PATRONS

Dr. S. K. Mahajan	(Chief Coordinator, SPFU) Director, Directorate of Technical Education (DTE), Maharashtra State, Mumbai
Dr. Sesha Iyer	Chairman, BOG- Sardar Patel College of Engineering
Dr. P. H. Sawant	Principal, Sardar Patel College of Engineering