

PROTTON SYNERGY announces

A Professional Training Course on “**ADVANCE PIPELINE STRESS ANALYSIS**”

The Stress Analysis is an Integral part of Safety requirements of Piping and Pipelines. If you are working in Design or Operations domain, don't you think the knowledge of **Stress Analysis** will give a big leap in your career?

Most of us know '**What to do**' in design but very few know '**Why to do it**'. To get the answer of '**Why**'; Protton Synergy is announcing courses in Piping & Pipeline Stress Analysis.

Would you be interested knowing the answers of questions like

Do you know?

'When to analyze buried pipe completely or partially?'

'How to calculate force on Anchor blocks? Whether to provide Anchor blocks or not.

'How different type of soil acts differently on buried pipe?'

'What are other failure modes of pipeline like Buckling, road crossings etc.

'What is the theory behind equations in code B31.4, B31.8?'

'How to model alignment sheet quickly in CAESAR II?'

..... **And lot more learnings with live examples.**

The course starts with the fundamentals required to perform Pipeline Stress Analysis. It also talks about the International code requirements, best industry practices and then ends with Practical application of Pipeline Stress Analysis using “CAESAR II” software to build piping system models and to analyze the output.

WHO SHOULD ATTEND?

Quality Assurance Staff, Pipeline Design engineers, stress engineers, designers

Any aspiring engineer, he/she can be a trainee engineer, designer, Sr. Engineer, Plant Operating engineer, Project engineer or a Manager, who wants to clear his/her fundamentals clear and wants to know more about this subject and software can attend this course

TRAINING METHODOLOGY

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

All presentations are made in excellent colorful power point. Very useful Course Materials will be given.

40% time Lectures

40% time Workshops and work presentation

20% time Videos& General Discussions

Material Language: English

Presentation Language: English

TOPICS COVERED

- Stress Analysis.
- Piping Flexibility analysis.
- Pipe support.
- Modeling-input pipe data in CAESAR II.
- Vibration, seismic, wind load and general loads analysis.
- Equipment (rotary/static) nozzle evaluation.

ELIGIBILITY: Fresh / Experienced - B.E. (Mech / Prod / Chemical), Diploma (Mech)

COURSE DURATION: One week

FACULTY: Mr. Gaurav Bhende

SYLLABUS

A. Theory:

1. Introduction to Pipeline Stress Analysis and Role of Stress Engineer.
2. Basic Stress concepts applicable in Stress Analysis.
3. Theories of Failure
4. Interpreting International Piping code equations, ASME B31.4, B31.8, AS-2885.
5. Theory behind load case formation.
6. Support types and their application. Anchor block calculation.
7. Pipe Span Calculation
8. Piping flexibility and Stress Intensification factor
9. Flange leakage analysis calculations
10. Various engineering calculations like Buoyancy, Upheaval buckling, Anchor Flange force, Bend radius calculations.
11. Detail discussion of Buried Pipe behavior.
12. To understand significance of various soil properties like density, cohesive pressure, friction angle etc.
13. Comparing various methods of analyzing buried pipe including American Lifeline Alliance Method.

B. Practical:

1. Introduction to CAESAR II software and its Configuration file etc.
2. Quick and effective techniques to model Buried pipe.
3. Buried Pipe analysis using Peng's Method.

4. Buried Pipe Analysis using American Lifeline Alliance Method.
5. Buried Pipe analysis using manually calculated soil stiffness.
6. Load case formation

About Faculty:

Name: **Gaurav Bhende**

Qualification: **M. Tech.**

The faculty has more than 19 year of experience in Pipe Stress Analysis and conducted several Professional Training Courses on Stress Analysis using CAESAR II software in numerous international engineering companies and Institutes as a freelance Trainer since 2009. Gaurav has won the First Prize in a Global competition called "Driver of Success" where case your excellence in CAESAR II usage in Pipe Stress Analysis is to be demonstrated.



Gaurav was also invited to participate as a speaker in International conferences held in USA, India and UAE.

Gaurav has presented numerous Whitepapers on various topics of Pipe Stress Analysis like Buried Pipe Analysis, Seismic Analysis, stress Intensification Factors, surge analysis in International Journals and Conferences including ASME conference.