KVRM Engineering Services

ENGINEERING SKILL DEVELOPMENT PROGRAMME

CAESAR II Pipe Stress Analysis Training

Live online training by practising piping stress engineers, using real Oil & Gas and Petrochemical project files, not textbook examples.

8 Weeks | Live Online / Blended | KVRM Certified

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CAESAR II Pipe Stress Analysis Training

A practical, project-based training programme in pipe stress analysis using Caesar II, delivered by a practising engineering consultancy.

🎯 **On completing this course you will be able to:** Build complete Caesar II pipe stress models from piping isometrics, run sustained, thermal, dynamic, seismic, and occasional load analyses, check ASME B31.1 / B31.3 code compliance, evaluate equipment nozzle loads against API 610 and NEMA SM23, and produce formal stress reports — the complete skill set required for a Pipe Stress Engineer role in Oil & Gas, Power, and Petrochemical sectors.

DURATION	FORMAT	ELIGIBILITY	CERTIFICATE
8 Weeks	**Live Online / Blended**	**B.E. / B.Tech — Mech.**	**KVRM Certified**

CAESAR II · ASME B31.1 · ASME B31.3 · API 610 · NEMA SM23 · IS 1893 Seismic

Who Should Join

Mechanical Engineers, Piping Design Engineers, Stress Engineers, EPC Professionals, Oil & Gas engineers, and final-year Engineering Students. A B.E. / B.Tech in Mechanical Engineering is the prerequisite — prior piping design experience is helpful but not required, as model-building fundamentals are covered from scratch in Weeks 1–2.

Module-by-Module Syllabus

Four modules across eight weeks, moving from model-building fundamentals through static and dynamic analysis to a complete live industry project.

MODULE 01 Caesar II Interface & Model Building — Weeks 1–2

- Caesar II interface — navigation, settings, preferences
- Model building from piping isometrics — node numbering
- Pipe properties — material, schedule, temperature, pressure
- Fitting and bend input — SIF factors
- Flange and valve input
- Restraint types — anchors, guides, line stops, resting
- Nozzle connections — vessel and equipment
- Model checking and error review

MODULE 02 Static Analysis & ASME Code Compliance — Weeks 3–5

- Sustained load analysis — dead weight and pressure
- Thermal expansion analysis — operating load case
- ASME B31.1 code compliance — SL, SE limits
- ASME B31.3 code compliance — SL, SE limits
- Displacement and rotation results — review
- Support load extraction — input to civil design
- Nozzle load extraction — check against API 610, NEMA SM23
- Flange leakage check

MODULE 03 Dynamic Analysis — Seismic, Wind & Slug — Weeks 6–7

- Dynamic analysis overview — response spectrum vs. time history
- Seismic analysis — response spectrum method, IS 1893
- Wind load analysis — IS 875 application
- PSV thrust force analysis
- Water hammer — surge force calculation
- Slug flow — occasional load analysis
- Combining occasional loads — SRSS method
- Dynamic vs. static result comparison and interpretation

MODULE 04 Stress Report Production & Live Industry Project — Week 8

- Stress report format — industry standard content and layout
- Model summary, input listing, load case summary
- Code compliance report — all lines tabulated
- Nozzle load report — comparison with equipment allowables
- Support load summary — for structural design input
- Live industry project — complete stress analysis of a refinery process line
- Design review and structured faculty feedback
- Client-standard report preparation and finalisation

Why Train With KVRM

Not a generic training centre — every instructor is an active engineering professional working on live projects, not a full-time trainer.

LIVE PROJECT EXERCISE FILES

Every session uses exercise files and stress models drawn from KVRM's active Oil & Gas and Petrochemical projects — not textbook examples.

ONE COMPLETE LIVE PROJECT

Week 8 includes a full stress analysis of a refinery process line from isometric to client-standard stress report, with structured faculty review.

RECORDED SESSIONS

All live sessions are recorded and made available to enrolled students for review at their own pace.

PLACEMENT GUIDANCE

CV review and referrals into KVRM's Oil & Gas and Petrochemical project network on completion.

Career Opportunities

Pipe Stress Engineer, Piping Stress Analyst, Piping Design Engineer (stress) — with EPC contractors, Oil & Gas consultancies, petrochemical operators, and power generation companies across India and internationally, including Gulf and Southeast Asia markets.

Ready to Enrol?

Fee, next batch dates, and enrolment details available on request.

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