ENGINEERING TRAINER

Pressure Vessel Analysis using PV Elite

This PV Elite and CodeCalc course covers pressure-vessel and heat-exchanger modeling from setup through calculation review and reporting. Exercises include vessels, tubesheets, flanges, nozzles, saddles, lugs, legs, jackets and noncircular equipment under ASME VIII Division 1, EN 13445 and PD 5500 rules. This self-paced online course includes video lectures, worked examples and a completion certificate with PDH credits.

Buy This Course

Request a Quote or Invoice

ONLINE	SELF-PACED	1-YEAR ACCESS
7 MODULES	9.5 PDH	9.5 HOURS

TRUSTED BY ENGINEERING TEAMS WORLDWIDE

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What you'll learn

This learning path gives engineers a structured introduction to pressure-vessel and heat-exchanger design using PV Elite and CodeCalc. It is designed for engineers who are starting with PV Elite, moving from another software package, or reviewing pressure-vessel calculations produced in PV Elite.

The seven-course learning path starts with the PV Elite and CodeCalc user interfaces and the design of a simple pressure vessel. It then covers vertical and horizontal vessels, heat exchangers, nozzles, openings, flanges, tubesheets, saddles, lugs, legs, jacketed vessels, load input, and output reporting.

The learning path combines video lectures, quizzes, and structured exercises. Participants can attempt the exercises before following the recorded worked solutions for designs using ASME BPVC VIII, EN 13445, and PD 5500.

Skills you'll gain

- ✓ navigate the PV Elite and CodeCalc interfaces and configure units and materials
- ✓ set up and analyze vertical and horizontal pressure-vessel models in PV Elite
- ✓ create fixed-tubesheet, floating-tubesheet and U-tube bundle heat-exchanger models
- ✓ model and evaluate flanges using PV Elite and CodeCalc
- ✓ design and review nozzles, nozzle pairs and external nozzle loads
- ✓ model saddles, lugs, legs, half-pipe jackets and noncircular vessels
- ✓ interpret common warnings and customize calculation reports
- ✓ develop a working pressure-vessel model from initial setup through reporting

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About the instructor

Dynaflow Research Group

Dynaflow Research Group is an engineering consultancy working across piping design and analysis, flow dynamics, vibration, FRP piping, pressure equipment and specialist engineering software. Its experience includes EN and ASME design rules for piping and pressure vessels, buried piping, water hammer, pulsation, dynamic stress assessment, vibration measurement, FEA tools, BOSfluids, BOSpulse, PV Elite and NozzlePRO workflows.

Who this course is for

- ✓ Pressure-vessel engineers starting to use PV Elite
- ✓ Mechanical engineers moving to PV Elite from another design package
- ✓ Static-equipment engineers responsible for vessel calculations
- ✓ Heat-exchanger engineers using PV Elite or CodeCalc
- ✓ Technical reviewers checking PV Elite reports

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Course content

Module 1 - Introduction to PV Elite & CodeCalc

Learn the core PV Elite and CodeCalc setup workflow and configure the software for pressure-vessel calculations.

- PV Elite interface and features
- Creating a pressure vessel in PV Elite
- CodeCalc interface and features
- Configuration Editor
- Creating and editing units and materials
- Custom unit-file and material exercises

Module 2 - Pressure Vessel Analysis in PV Elite

Follow the main workflow for designing and analysing vertical and horizontal pressure vessels in PV Elite.

- General vessel design and analysis
- Vertical vessel exercise using ASME VIII div 1
- PD 5500 versus ASME VIII-1 projects
- Horizontal vessel exercise using PD5500
- Converting a vessel from one code project to another

Module 3 - Heat Exchangers in PV Elite

Learn how heat exchangers and common tubesheet configurations are created in PV Elite.

- Introduction to heat exchangers
- ASME VIII heat exchangers
- Creating a heat exchanger in PV Elite
- Fixed tubesheet heat exchanger exercise
- Floating tubesheet heat exchanger exercise
- U-tube bundle heat exchanger exercise

Module 4 - Flange Analysis in PV Elite

Apply the flange-analysis options available in PV Elite and CodeCalc.

- Modelling flanges in PV Elite
- Equivalent pressure method for standard flanges
- Flanges in CodeCalc
- PV Elite and CodeCalc flange exercises
- Taylor-Forge analysis
- EN 1591 analysis
- EN flange analysis exercise

Module 5 - Nozzle Analysis Options in PV Elite

Use PV Elite and CodeCalc to evaluate nozzle design and nozzle loads.

- Area replacement rules for nozzles
- Nozzle analysis using WRC guidelines
- Designing nozzles in CodeCalc
- Evaluating external loads in CodeCalc
- Designing nozzles in PV Elite
- Analysing nozzle pairs
- CodeCalc and PV Elite nozzle exercises

Module 6 - Introduction to Saddles, Lugs, Legs, & Jacketed Vessels in PV Elite

Model common vessel-support and jacket configurations in PV Elite.

- Saddles in PV Elite
- Saddled vessel exercise
- Lugs in PV Elite
- Legs in PV Elite
- Half-pipe jackets in PV Elite
- Jacketed vessel exercise

Module 7 - Miscellaneous Features in PV Elite & Reporting

Explore additional PV Elite modelling, visualisation, and reporting features.

- Non-circular vessels in PV Elite
- Weld seams and fatigue
- Miscellaneous utilities
- Visualisation features
- Reporting in PV Elite
- Customising reports exercise
- Common warnings