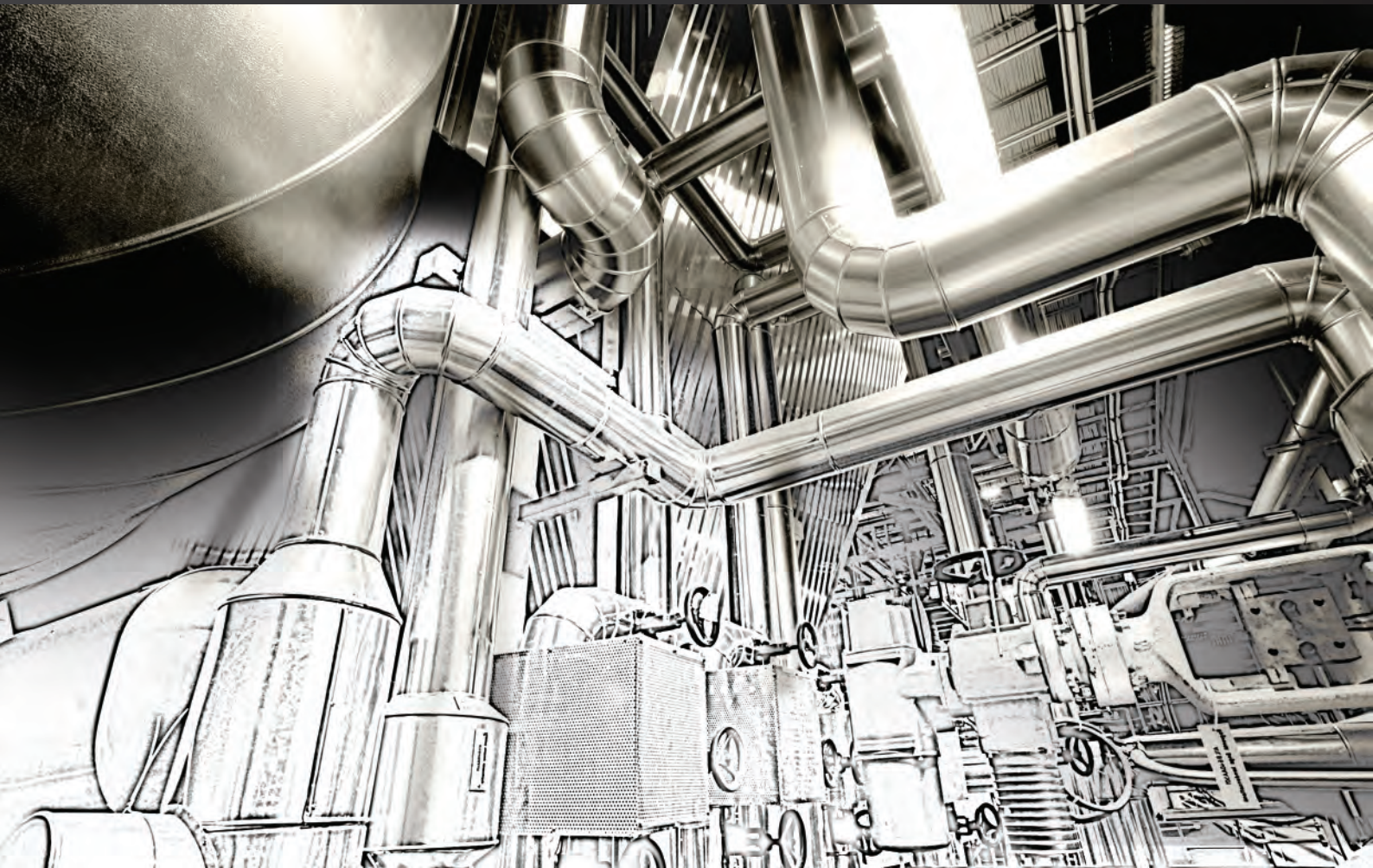




**STRESSMAN ENGINEERING**  
— A C A D E M Y —

# PIPE STRESS COURSE OFFSHORE UNITS



**SINGAPORE**

**19 - 21 NOV. 2018**

# COURSE DESCRIPTION



**W**ith this pipe stress course Stressman Engineering Academy and Prospurs gives you a better understanding and a base for discussions with colleagues, vendors and clients and to refuel you with inspiration and knowledge. In these five days you will learn and understand the design philosophy of pipe stress. Our lecturer Sondre Luca Helgesen will with inspiration, information and practical examples provide you a prominent course and give you a total understanding of the pipe stress process.

This course empathizes on understanding rather than doing. A high focus on why instead of how will give you a better understanding, possibilities for optimization and cost reduction, as well as a base for deeper discussions with colleagues, vendors and clients. You are encouraged to ask questions and discuss with your expert trainer since this is the best way to learn.



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## EXPERT Trainer

– Mr. Sondre Luca Helgesen

Mr. Helgesen is the lead mechanical engineer at Stressman Engineering and is also the brain behind the company. He has more than 10 years of experience with pipe stress, structural stress and vessel design within the areas of subsea, offshore and onshore installations. In addition to Stressman Engineering Sondre is lecturing at Telemark University College and holds pipe stress courses in Asia. He has a bachelor as a mechanical engineer and a master of science in process technology.

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## WHAT TO EXPECT?

You should expect nothing but the best. Every aspect of the course should be of the outmost premium quality. It is not only our goal to give you a better understanding of the better topics, but also to give you an experience for life and connect with other fellow peers. To enhance the participant group dynamics we will go out one evening on a complimentary dinner.

## WHO SHOULD PARTICIPATE?

Engineers within the fields of pipe stress, design, process, mechanical. We also recommend this course if you are a piping lead engineer and manager to give you a better insight in the field of pipe stress engineering.

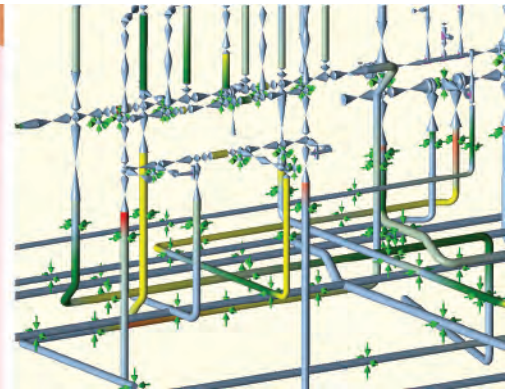
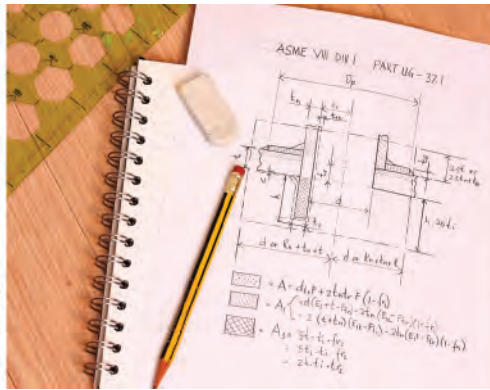
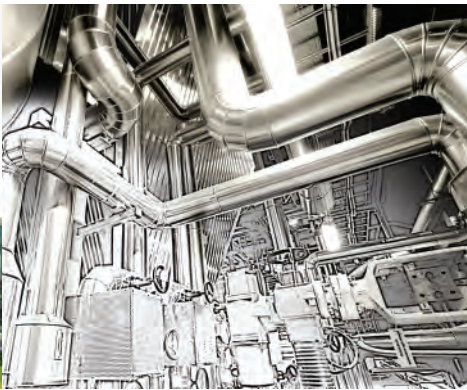
The course is also well suited for onshore engineers working with piping since many of the same topics will also be reflected there.

## WHEN, WHERE AND PRICE?

The event will be hosted in a fashionable Hotel in Singapore down town area from 19–21. of November 2018. The price per participant is 3 399SGD and a discount will be given if more than 3 participants from the same company are attending.

A early bird offer of 2799SGD is available until 16.10.

# DETAILED TRAINING AGENDA



## INTRODUCTION

### Codes Governing Topsides Process Piping Design and Stress Analysis

- ▶ Main focus will be on ASME B31.3, but ASME B31.4 and ASME B31.8 will be addressed
- ▶ Other codes including applicable local codes (NORSOK, API, DNV, etc)
- ▶ Role and scope of codes
- ▶ Information available in codes
- ▶ Stress Intensification Factors and Flexibility Factors

### Loads to be considered

- ▶ Explanation of differences between sustained, expansion, occasional and accidental loads
- ▶ Sustained loads (Primary loads)
  - Dead weight
  - Internal pressure
- ▶ Expansion loads (Secondary loads)
  - Thermal expansion and contraction loads
  - Displacement loads due to sagging/hogging
  - Displacement loads due to match-up tolerances
  - Other displacement loads due to relative displacements
- ▶ Occasional loads
  - Accelerations
  - Wind
  - Green sea / slamming
  - Pressure relief valve load
    - Pressure Safety Valve discharge reaction forces
    - Bursting-and rupture disc reaction forces
    - Flare-tip reaction forces
- ▶ Accidental loads
  - Blast/explosion loads
    - Blast drag pressure
    - Blast drag load
    - Blast and operational flexibility
    - Blast and structural deformation
    - Blast drag coefficient, Cd
    - Dynamic Load Factor for blast, DLF
  - Accidental heel
  - Accidental heat load from fire

### Wall thickness calculations & Flexibility calculations

### Load case description- and combinations

### Equipment allowable nozzle load calculations

- ▶ Pressure vessels
- ▶ Skids with piping connections
- ▶ X-Mass Trees
- ▶ Centrifugal pumps
- ▶ Compressors
- ▶ Turbo-compressors
- ▶ Turbines

### Flange calculations

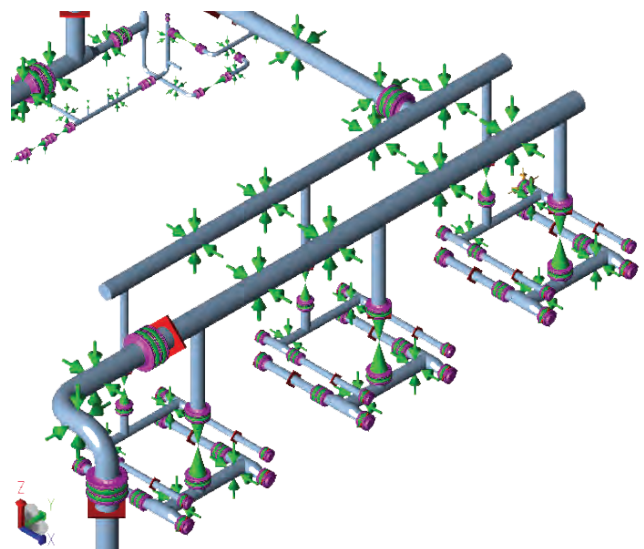
- ▶ ASME B16.5 flange calculations (Kellogg's method)
- ▶ API Flange calculations
- ▶ Clamp Connections
- ▶ NORSOK Compact Flanges

### Expansion joints

### Documentation of stress analysis

- ▶ Documentation for the project and third party verification
- ▶ Requirement to a pipe stress report
- ▶ Requirement to a pipe stress isometric
- ▶ Documentation for audit

The training agenda is tentative and may be adjusted based on input and needs of the participants.



# TERMS AND CONDITIONS

## 1.0 GENERAL

The conditions specified in the "General Terms and Conditions" define the relationship and payment agreements between the Client and Stressman. Upon completion of the payment of the seat(s) it is confirmed that the Client is agreeing to these terms and conditions, and the booking is confirmed.

An email address and a phone number must be provided at the time of booking. This information must be correct as it is our only means of contact with you.

## 2.0 PAYMENT TERMS

Payments shall be done through bank wire transfer or PayPal. You will receive an electronic receipt when the money transfer to our account is confirmed. Time limited offers, such as early bird prices, must be settled within the specified date. Checks are not valid.

Please note that credit card payments will incur a PayPal charge of 3.4%.

Registration made within seven (7) working days of the course must be paid by PayPal. The course fee includes the course material, lunch, tea/coffee breaks and one (1) dinner.

If any information that you have provided to us proves to be incorrect, which again results that we have not charged you the correct fee for the course, we reserve

## 3.0 CANCELLATION

All cancellations must be made in writing. If you have to make a cancellation and are unable to transfer your booking to another date or destination at the time of cancellation, the following charges will apply:

- ▶ More than twenty (20) working days within the course begins, you will receive a 40% credit back of the course fee.
- ▶ Cancellations occurring less than nineteen (19) working days before the course starts, gives 0% credit back.
- ▶ If you do not attend a course, and you have not previously informed us, the full course will not be refunded

If the course has to be postponed or canceled for any reason and the participant is unable to attend on the rescheduled date or there will be no rescheduled date, you will receive a full pay back of the course fee.

## 4.0 CHANGES

We will do our utmost to adhere to the informed time schedule for the days of the course. Times indicated are not guaranteed. We reserve the right to make changes.

## 5.0 SUBSTITUTION

Stressman Engineering Academy are not responsible for any loss or damage regarding the course or loss resulting of a cancellation/postponement or alteration of an event.

If this course is cancelled, rescheduled or postponed due to a fortuitous event, act of nature, unforeseen occurrence or any other event that renders performance of this course impracticable, illegal or impossible, Stressman Engineering Academy shall not have any liability whatsoever.

## 6.0 COURSE MATERIALS

Stressman Engineering Academy is the only owner of the course. Materials and proprietary rights used in the course shall remain in the property of the Academy. It is therefore not allowed to reproduce, distribute, use the material in other courses or to other purpose except self-knowledge.



## 7.0 Productivity and Innovation Credit

The Productivity & Innovation Credit (PIC) scheme allows Singaporean businesses to invest in innovation and productivity improvements such as training. The benefits are 400% tax deductions/allowances and/or 60% cash payout. See <https://www.iras.gov.sg> for more details.



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