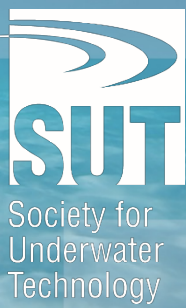


# Introduction to Materials & Corrosion Course An Awareness Course

28<sup>th</sup> & 29<sup>th</sup> August 2019

Parmelia Hilton

14 Mill Street, Perth, Western Australia



This two-day course has been specifically designed for people new to subsea or unfamiliar with the various corrosion considerations which need to be applied during design, construction and operation of subsea assets.

The aim of this course is to provide an overview of the various materials and corrosion issues which are applicable to subsea structures. The choices made which impact one area of corrosion and integrity will often impact the choices in other areas, and also affect the long term inspection and monitoring which may be required to ensure the design life is met. Having a general overview of the interaction between the various factors and the impact that certain choices make and the equipment used in inspecting and monitoring the structures will provide attendees with a broad knowledge on the interaction which needs to be considered in any installation.

The course will be presented by experienced personnel from both the supply and subsea industries. Most of the course will be held in a classroom environment, with the session being interactive, with every opportunity to ask questions and discuss the material presented as well as a couple of site visits to relevant facilities.



Thank you to our presenting companies



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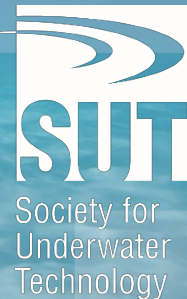
Society for Underwater Technology – Perth Branch

[www.sut.org.au](http://www.sut.org.au)

# Introduction to Materials & Corrosion Course

## An Awareness Course

28<sup>th</sup> & 29<sup>th</sup> August 2019  
Programme



### DAY ONE

08:45 **Registration and Coffee**

09:00 **Introduction**

*Grahame Strong, CCE*

The presenter will introduce the course by providing an overview of corrosion issues affecting subsea structures and setting the scene for the presentations to follow. They will cover the basic operating conditions for equipment (both internally and externally), basic design requirements and design considerations including costs etc. They will introduce the basic mechanisms of corrosion, and discuss the effects of elevated temperatures, CO<sub>2</sub>, H<sub>2</sub>S, sand, seabed topography and choice of material etc, on the rate of corrosion. To assist with the learning experience, they will also outline a series of questions that the attendee should be able to answer at the end of the 2 day course.

09:45 **Corrosion & Erosion Modelling**

*Chris Selman, Wood*

Chris will discuss the various models which are available to model the effects of CO<sub>2</sub>, H<sub>2</sub>S and sand production on the internals of pipelines. He will compare the models, the information required for input and the advantages/disadvantages/limitations of each. These models are used to determine the corrosion allowance and the requirement for more exotic (corrosion resistant) pipeline materials in certain applications.

11:15 Coffee / Tea

11:30 **Chemical Selection, Injection & Inhibition**

*Nathan Jensen, NALCO Champion*

This presentation will discuss the types of inhibitors which are available for application into oil & gas subsea production systems. Topics will include selection and qualification of inhibitors for systems utilising subsea injection via chemical umbilicals and systems utilising continuous MEG for hydrate control. Other challenges such as top of line corrosion management and downstream process impacts for using corrosion inhibitors will also be provided.

13:00 **Lunch**

13:45 **Specification, Fabrication & Welding**

*Niekie Jooste, The WeldNet*

Niekie will cover the materials used in subsea installations and the issues related to welding them together. The types of welds, heat treatment, metallurgy of the welds, limitations imposed on welding offshore pipelines (on barges etc) and testing welds. The difference between fabrication for subsea and topsides applications will also be explored.

15:15 Coffee / Tea

15:30 **Cathodic Protection & Coatings**

*John Grapiglia, CCE*

John will cover the codes and standards which are used in the design of cathodic protection systems, the important factors which affect the performance of CP systems and a general overview on the issues related to CP and the interaction with coating systems.

17:00 Day End

17:30 **Course Dinner - Venue advised within joining instructions**

### DAY TWO

08:30 **Operational Integrity & FFS**

*Colin Radici & Adrian Lim - Rosen*

Colin and Adrian will discuss pipeline pigging, codes and standards for defect assessment and repair, types of pigs available, their benefits, the type of data which can be collected and limitations affecting intelligent pigging, and pipeline design. It will include how the data is processed and what information is available from the intelligent pigging of pipelines.

10:00 Coffee / Tea

10:15 **Planning and Implementation of Inspection & Monitoring**

*Zach Mccann, Sonomatic*

This presentation will cover the issues which affect subsea structures and the type of inspection which are performed. It will include ROV inspections, ROV types, tooling, ROV capabilities and regulatory requirements for inspections. The data ideally required to be made available to the inspection company to thoroughly perform the inspections will be discussed as well as other testing/inspection which may be performed by other forms of inspection (such as divers etc).

11:45 **Lunch**

12:30 Depart Venue for **Baker Hughes, a GE Company – Jandakot Service Facility Site Visit**

(Lead by Duncan Wilmot, Baker Hughes, a GE Company)

This presentation will provide an overview of materials selection and corrosion control for oil and gas production equipment operating in a subsea environment. It will include a guided tour of the Baker Hughes, a GE Company subsea service facility with the opportunity to view various items of subsea production Equipment.

14:45 (approximate) Depart Baker Hughes for **Curtin Corrosion Centre Site Visit** (Lead by Mariano Iannuzzi, Curtin University)

Delegates will visit the Curtin Corrosion Centre to develop an understanding of what exactly can be tested in this well-equipped facility.

17:30 (approximate) Arrive back at CBD

**SUT reserves the right to change/amend the programme as it sees fit.**

Available Presenters biographies can be found on our [website](http://www.sut.org.au).

## Registration Information

## Introduction to Materials & Corrosion Aug 2019

Should you require further information on this event, please contact Patricia Slapp on [p.slapp@sut.org](mailto:p.slapp@sut.org) Tel +61 8 9481 0999

### Registration Fees

**SUT Members Early Bird (register and pay before 17<sup>th</sup> July)**

**\$904.54 + GST = \$995.00**

SUT Members (registration after 17<sup>th</sup> July)

**\$1,122.72 + GST = \$1,235.00**

**Non Members Early Bird (register and pay before 17<sup>th</sup> July)**

**\$1,072.72 + GST = \$1,180.00**

Non Members (registration after 17<sup>th</sup> July)

**\$1,336.36 + GST = \$1,470.00**

SUT Student Member

**\$363.63 + GST = \$400 – limited places available**

**Fee includes** - All refreshments during the course including dinner on the first night, an electronic copy of the available presentations and videos are provided and transport to the site visit.

**Not included** - Hard copy presentations are not provided. Should these be required there is an additional fee of \$80.

### Preferred Payment Methods:

**Credit Card:** Visa, Mastercard or AMEX only \*. We cannot accept payment by any other card.

\* Payment by Visa or MasterCard will carry a 1.5% surcharge / AMEX will carry a 2.75% surcharge.

**Invoice:** Please tick here to be invoiced ☐

### Joining Instructions:

Joining instructions will be e-mailed to the registered delegate (as shown on the registration form). All details of presenters and updates to the programme will be included in the joining instructions. Please bring along a laptop to view the presentations.

### Course Dinner:

An informal dinner will be held in a local restaurant on the first night of the course (details with joining instructions).

### Transport During the Course:

Delegates are responsible for their own travel arrangements at the beginning and end of each day. Transport will be arranged by the SUT from the course venue for site visits.

**Cancellations:** Refunds will be made on written cancellation received up to ten working days prior to the event, but will be subject to a 15% administration charge. Cancellations received 9–4 working days prior to the event will be charged a 50% cancellation fee. Cancellations received 3–0 working days prior to the event will not be refunded. Delegates may wish to nominate a substitute in their place at no charge.

**CPD Hours:** CPD hours can be claimed for this course, please keep flyer and receipt for auditing purposes.

Please tick box if you do not wish to receive further SUT information ☐

## Registration Form

Please e-mail completed form to [p.slapp@sut.org](mailto:p.slapp@sut.org)

Please tick to indicate your preferred payment method:

SUT Member No. \_\_\_\_\_

Credit Card \_\_\_\_\_ (Visa, MasterCard or AMEX only)\*

Invoice (PO No.) \_\_\_\_\_

Name \_\_\_\_\_ Please tick here if personally funding course ☐

Company \_\_\_\_\_

Address \_\_\_\_\_

E-mail address \_\_\_\_\_ Tel No. \_\_\_\_\_

Credit Card No: VISA, MASTERCARD or AMEX ONLY \* \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

Exp. \_\_\_\_\_ / \_\_\_\_\_ Security no \_\_\_\_\_ (3 digit number for visa & m/c, 4 digit number for amex)

Name on the card \_\_\_\_\_

Billing Address if not as above \_\_\_\_\_

E-mail address where receipt should be sent for credit card payment \_\_\_\_\_

Amount to be charged \$ \_\_\_\_\_ Signature \_\_\_\_\_

So that the presenters can get an idea of the level at which to pitch their talk, please let us have a few details of your current job position, history and what you hope to learn from the course.

The Course dinner (Wednesday evening) will be arranged as an informal dinner at a CBD location, please indicate below if you are able to attend.

Please e-mail along with registration form to [p.slapp@sut.org](mailto:p.slapp@sut.org)

Position Held \_\_\_\_\_

Relevant Professional History \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Reason for attending course \_\_\_\_\_

\_\_\_\_\_

Any special dietary requirements \_\_\_\_\_

Count me in for the dinner      YES/NO

(If indicating Yes and this changes prior to attending the course please email: [p.slapp@sut.org](mailto:p.slapp@sut.org))

Please tick box if you do not want to share your delegate profile with other attendees ☐