CIVL4170 Design of Offshore Systems [UG, PG]

Credit
6 points

Availability
Semester 1 (see Timetable)

Old unit code
ENDP3550, OENA3552

Outcomes
Students understand the analysis and design of structural members and joints in offshore jackets; fatigue design of tubular joints; the main steps in fabrication and installation of offshore platforms; the various steps of conventional marine operations for installation of fixed platforms; the key parameters in structural models for pre-service analysis; the basics of soil behaviour and pile–soil interaction analysis; typical offshore structural engineering software; and the main items in dimensional analysis for offshore geotechnical modelling.

Content
This unit builds directly on the knowledge gained in CIVL3170 Introduction to Offshore Engineering and provides elementary knowledge in various steps of structural design, fabrication and installation of fixed offshore platforms. It defines outstanding issues in design, fabrication and installation of fixed offshore systems. It also covers design of structural components (members and joints); an introduction to fatigue design of tubular joints in jacket structures; nonlinear behaviour of soil layers and pile–soil interaction analysis; the main steps in offshore installation and marine operations; the required pre-service analyses in offshore structural engineering and their key requirements; structural analysis and design of fixed offshore platforms using one of the commercially available software packages; and dimensional analysis applicable in offshore geotechnical engineering.

Assessment
This comprises compulsory weekly tutorials, marked assignments, a modelling project in the computer laboratory and a final examination. Final unit marks may be modified in accordance with Faculty policy (see http://www.ecm.uwa.edu.au/35522).

Supplementary assessment is not available in this unit except in the case of a bachelor's pass degree student who has obtained a mark of 45 to 49 and is currently enrolled in this unit, and it is the only remaining unit that the student must pass in order to complete the course.

Unit Coordinator(s)
Assistant Professor Mehrdad Kimiae

Location
UWA (Crawley)

Mode
on-campus

Unit Rules
Advisable prior study: CIVL3170 Introduction to Offshore Engineering
Incompatibility: OENA3552 Marine and Offshore Systems Design
Contact hours—52 (lectures: 39 hrs; tutorials: 13 hrs)

Unit web page
http://www.civil.uwa.edu.au/teaching
[Some unit web pages are still under construction and will be available in 2011.]

Recommended reading

The availability of units in Semester 1, 2, etc. was correct at the time of going to press but may be subject to change.

Assistance with study skills, including English language skills, is available free of charge from Student Services for all enrolled students (see http://www.studentservices.uwa.edu.au/ss/learning). Student Services location: Second Floor, South Wing, Guild Village; telephone: 6488 2423.

Books and other materials wherever listed may be subject to change. Book lists relating to 'Preliminary Reading', 'Recommended Reading' and 'Textbooks' are, in most cases, available at the University Co-operative Bookshop (from early January) and appropriate administrative offices for students to consult. For first-year units the Bookshop will endeavour to make available photocopies of book lists for individual units. Books marked with an asterisk (*) are available in paperback.

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Location: http://units.handbooks.uwa.edu.au/page/28165