

MODULE CODE: M5X01869
TITLE: Civil Engineering Technology 2
DATED: 25/09/2017

LEVEL: 5
CREDITS: 20

JACS CODE: K120
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AIM(S)

“To provide learners with an understanding of specialized methods and techniques used in complex civil engineering activities.”

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to demonstrate the ability to:

1. Evaluate methods and techniques used in tunneling activities
2. Examine methods and techniques used in hydraulic and marine structures
3. Compare and contrast methods and techniques used in highway construction and railway works

INDICATIVE CONTENT

- Understand the methods and techniques used in tunnelling activities
- Tunnelling activities: ground conditions e.g. hard rock, soft ground; ground support; cut and cover tunnelling; pipejacking; mini-tunnelling; construction of shafts
- Understand the methods and techniques used in hydraulic and marine structures
- Constructing hydraulic structures: materials used e.g. earth, rockfill, concrete; ancillary works; canal and river works
- Constructing marine works: cofferdams; caissons; sea walls; harbour works; coastal protection activities
- Understand the methods and techniques used in highway construction and railway works
- Constructing and maintaining carriageway works: rigid pavements; flexible pavements; railway works

LEARNING AND TEACHING STRATEGY

The delivery of this module will be enhanced by site visits and videos of site operations. Extracts from technical journals will be included in lectures to provide realistic and relevant case studies.

The allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	60	30%
Independent learning	140	70%
Laboratory or visits	0	0%
TOTAL	200	100%

ASSESSMENT

Assessment Component 1 – 50%

Submission of a 2500word report on an aspect of construction activity selected by the student from a list provided by the teaching member of staff. The activity will be directly related to the syllabus and could discuss such matters as types of culverts, safe evacuation of tunnels, types of TBM's, service reservoirs etc. Each student will select a different topic and will give a brief presentation of their findings to their cohort.

Assessment Component 2 – 50% (2 hours)

Students will sit a 2hour written test to assess the knowledge gained by the student of methods and techniques used to create complex civil engineering structures.

Assessment Summary

Activity type	Percentage
Written	50%
Coursework	50%
Practical	0%
TOTAL	100%

BIBLIOGRAPHY

Essential

French, P. W. (2001), "*Coastal Defences*", Taylor & Francis
 Illingworth, J. R. (2000), "*Construction Methods and Planning*", 2nd Edition, Spon
 Warren, D. R. (1996), "*Civil Engineering Construction*", Macmillan

Recommended

d'Angremond, K. (2004), "*Breakwaters and Closure Dams*", Spon
 Harris, F. (1994) "*Modern Construction and Ground Engineering Equipment and Methods*", Longmans

Background

Tomlinson, M. G. (2001), "*Foundation Design and Construction*", 7th Edition, Prentice-Hall

Journals

New Civil Engineer
 Construction News

Websites

www.icevirtuallibrary.com
www.bre.co.uk
www.ice.org.uk
www.asce.org