UNIVERSITY of BRADFORD

Module Descriptor

Open Channel Hydraulics

Module Code:	CSE6008-A
Academic Year:	2018-19
Credit Rating:	10
School:	Department of Civil and Structural Engineering
Subject Area:	Civil and Structural Engineering
FHEQ Level:	FHEQ Level 6
Module Leader:	Dr Jaan Pu

Additional Tutors:

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	16
Tutorials	6
Laboratory	2
Directed Study	74
Examinations DO NOT USE	2

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Semester 1 (Sep - Jan)

Module Aims

(1) To understand general hydraulic principles of free surface flows; (2) To solve practical engineering problems related to free surface flows.

Outline Syllabus

Hydraulic principles including: (1) Concepts of free surface flows: hydraulic radius; flow resistance and Froude number); (2) Uniform flow hydraulics: Manning equation and basic uniform flow calculations; (3) Gradually varied flow: Flow transitions and regimes (critical, sub-critical and super-critical flows); specific energy; critical depth and water surface profiles; (4) Rapidly varied flow: Hydraulic jump and hydraulic drop; (5) Hydraulic control structure calculations: Weir and sluice flows; (6) Hydraulic design rules and concepts; (7) Elementary sediment mechanics: Bed load; suspended load; inception motion of sediment; sediment transport capacity and total load transport; (8) Case studies and simple design practice.

Module Learning Outcomes

On successful completion of this module, students will be able to...

1 Understand and review general hydraulic principles and flows with free surfaces, and their applications to common engineering fields.

2 Interpret and justify laboratory experimental data by using available information and propose solutions to problems arising from that analysis.

Learning, Teaching and Assessment Strategy

Theoretical understanding and problem solving through large lectures, staff-led tutorial/example class and directed study, practical skills of data interpretation and justification gained from lab sessions, assessed by examination.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Examination - closed book	Examination - closed book	2 hours	100%	Yes

Legacy Code (if applicable)

ENG3304M

Reading List

To view Reading List, please go to **rebus:list**.