

<b>Full Title:</b>	Fluid Mechanics
<b>Language of Instruction:</b>	English
<b>Module Code:</b>	CENG E7010
<b>Credits:</b>	5
<b>Valid From:</b>	Semester 1 - 2014/15 ( September 2014 )
<b>Module Delivered in</b>	<a href="#">2 programme(s)</a>
<b>Module Description:</b>	no description provided
<b>Learning Outcomes:</b>	
<i>On successful completion of this module the learner should be able to</i>	
<ol style="list-style-type: none"> <li>1. Define principles of hydrostatics and pressure measurement and apply these principles to civil engineering examples.</li> <li>2. Apply fundamentals of fluids in motion including Continuity Equation, Bernoulli Equation and the Momentum Equation.</li> <li>3. Analyse and use flow measurement devices.</li> <li>4. Classify flow in channels</li> </ol>	

## Module Content & Assessment

Indicative Content
<b>Hydrostatics</b> Fluid properties, resultant force, pressure measurement
<b>Fluids in motion</b> continuity equation, Bernoulli equation, momentum equation
<b>Flow measurement</b> Venturi meter, orifice meter, pitot tube, weirs
<b>Flow in open channels</b> Uniform flow (Chezy and Manning equation) Non-uniform flow (Specific energy, critical depth, velocity and slope, Hydraulic jump, broad crested weir)
<b>Flow in Pipelines</b> Darcy equation, Colebrook-white equation.

Assessment Breakdown	%
Course Work	20.00%
End of Module Formal Examination	80.00%

## Full Time

Course Work							
Assessment Type	Assessment Description	Outcome addressed	% of total	Marks Out Of	Pass Marks	Assessment Date	Duration
Continuous Assessment	3 to 5 laboratory experiments focusing on hydrostatics	1	10.00	0	0	n/a	0
Continuous Assessment	3 to 5 laboratory experiments focusing on fluids in motion	2,3,4	10.00	0	0	n/a	0

No Project

No Practical

End of Module Formal Examination							
Assessment Type	Assessment Description	Outcome addressed	% of total	Marks Out Of	Pass Marks	Assessment Date	Duration
Formal Exam	End-of-Semester Final Examination	1,2,3,4	80.00	0	0	End-of-Semester	0

## Reassessment Requirement

### A repeat examination

Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.

### Reassessment Description

The form of reassessment has been more clearly articulated in all relevant module descriptors. Students shall be offered appropriate alternative assessments in place of recoverable elements of coursework. Elements of coursework which the programme board have agreed are non-recoverable are clearly communicated to students.

DKIT reserves the right to alter the nature and timings of assessment

**Module Workload & Resources**

**Workload: Full Time**

Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	Introduce and investigate fundamental concepts of hydraulics	3.00	Every Week	3.00
Practical	Reinforce theories covered in lectures by practical experimentation	1.00	Every Week	1.00
Independent Study	Student self guided study to reinforce the theories covered in class	5.00	Every Week	5.00
Total Weekly Learner Workload				9.00
Total Weekly Contact Hours				4.00

**This course has no Part Time workload.**

**Resources**

*Recommended Book Resources*

L. Hamill 2002, *Understanding Hydraulics*, 2 nd Ed., 1,2,3,4,5 and 7, Palgrave London [ISBN: 0-333-77906-1]

Chadwick and Morfett 2000, *Hydraulics in Civil Engineering*, 2 nd Ed., 1,2 and 3, Spon London [ISBN: 0-419-22590-3]

*This module does not have any article/paper resources*

*This module does not have any other resources*

**Module Delivered in**

Programme Code	Programme	Semester	Delivery
DK_ECENG_8	<a href="#">Bachelor of Engineering (Honours) in Civil Engineering</a>	4	Mandatory
DK_ECIVL_7	<a href="#">Bachelor of Engineering in Civil Engineering</a>	4	Mandatory