



Course Syllabus (Academic Year 2020)
School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title** : KAED 229 Hydraulic
Credit (3 Hour) : 3(3-0-6)
2. **Program Name** : Bachelor of Environment Engineering and Disaster Management
3. **Course Module** : Specific course
Pre/co-requisite : none
4. **Course Semester** : 2/2020
5. **Class Schedule & Venue**: Lecture room
Class Coordinator :
 1. Yutthana Phankamolsil (PhD)
Phone: (66) 81 695 4621
Email: yutthana.pha@mahidol.ac.th

6. Course Description

Fluid statics; fluids in motion and fluid flow principles; flow resistances; flow in closed conduits; flows in open channels; flow measurement; dimensional analysis and similitude; unsteady flow; mathematical equation on hydrodynamics.

7. Course Learning Outcomes (CLOs)

- (1) Accurately explain basic concepts, theories and principles of hydraulics. *[PLOs (1)]*
- (2) Use knowledge of hydraulics for solving the problems in the environment and disaster management filed. *[PLOs (1)]*

8. Instructor

Yutthana Phankamolsil (PhD) +66 816954621, Email: yutthana.pha@mahidol.ac.th

8.1 Office Hours : 12:00 Noon – 15:00 PM, THU, FRI

8.2 Office : L321 Laboratory Building

8.3 Course Website

- (1) the classroom name is KAED229 in Google Class Room. student have to register google account (xxxx.mahidol.edu) under Mahidol license.
- (2) line group name is KAED229_2020

9. Course Outline

Week	Date	Contents	Teaching & Learning Method	Instructor
1	21 Jan 21	Introduction to teaching and learning process - Course Learning Outcomes (CLOS) - Course outline - Course assessment - Grading system	1	YP
2	22 Jan 21	Properties of Fluid I (Introduction of Fluid Mechanics)	1	YP
3	28 Jan 21	Properties of Fluid II (Introduction of Fluid Mechanics)	1	YP
4	29 Jan 21	Fluid Statics I	1	YP
5	4 Feb 21	Fluid Statics II	1	YP
6	5 Feb 21	Forces and Submerged Area	1, 2	YP
7	11 Feb 21	Dam	2	YP
8	12 Feb 21	Buoyancy and Flotation	2	YP
9		Mid-term Examination		
10	19 Feb 21	Fundamentals of Fluid Flow	1, 2	YP
11	25 Feb 21	Kinematic of Fluid Motion	1, 2	YP
12	Makeup	Pipeline System I	1, 2	MP
13	4 Apr 21	Pipeline System II	2	MP
14	5 Apr 21	Open Channel Flow	1, 2	YP
15	11 Apr 21	Flood Routing	2	YP
16	12 Apr 21	Dimensional Analysis	2	AB
17		Final Examination		

Remark: YP (Yutthana Phankamolsil); MP (Monchai Pumkaew); AB (Arika Bridhikitti)

10. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Weight Distribution (%)
1	Quizzes	Exam will cover the content from the previous weeks.	1, 2	20
2	Midterm examination	Exam will cover the content from the previous weeks.	1, 2	30
3	Final examination	Exam will cover the content from the previous weeks.	1, 2	30
4	Assignments	Exam will cover the content from the previous weeks.	2	10
5	Class participation	Student must attend class more than 80% of course.	1, 2	10
				100

11. Grading System

This course use the following 8 point grading system

Grade	A	B+	B	C+	C	D+	D	F
Percentage (%)	80-100	75-79	70-74	65-69	60-64	55-59	50-54	0-49
Description	Excellent	Very Good	Good	Fairly Good	Fair	Poor	Very Poor	Fail
GPA	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.0

12. Reference

Simon, A.L., Hydraulic, 3 rd ed, John Eiley & sons, 2010, 491pp.