CB281 Hydraulics For Civil Engineers

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
BA114	2	4	2	2	2	3

COURSE AIM

To provide the student with the basic concepts and methods of analysis of hydraulics and its applications in the sustainable design of civil engineering projects.

COURSE WEEKLY CONTENTS

1	Introduction to hydraulic aspects in civil engineering projects and its ecosystem environment.
2	Properties of fluid(s), sediment-laden liquids and units.
3	Behavior of real fluid flow.
4	Hydrostatics and fluid forces.
5	Hydrostatics and fluid forces.
6	Flow conservative equations; Mass, Momentum and Energy Equations.
7	Application of flow conservative equations. + Midterm Exam
8	Application of flow conservative equations.
9	Flow in single pipes.
10	Flow in pipe systems.
11	Pumps (in parallel and in series)
12	Pump-pipeline system analysis.
13	Free surface flow in open channels and flow types.
14	Introduction to basic design of uniform channel surface flow.
15	Introduction to main physical parameters of Ecosystems.

STUDENT GRADING & ASSESSMENT

Weeks	Exams		Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	**20**	**Midterm**	←	10 MARKS To be freely distributed among possible assessments			→	**30**
8 to 12	←			20 MARKS			→	**20**
13 to 15	←			10 MARKS			→	**10**
16 or 17	**40**	**Final**						**40**
Total	**Exams**		**Assign.**	**Quizzes**	**Reports**	**Present.**	**Lab.**	100

REFERENCES

Textbook Hydraulic Engineering, HOUGHTALEN, ROBERT, Pearson Education,4th Edition, 2010.

Other Fundamentals of Fluid Mechanics, Munson, B., Young, D. and Okiishi, T., John Wiley and Sons, Inc., New Jersy, 2006.

Computer Applications in Hydraulic Engineering-connecting theory to practice, Walski, M.T. (Ed), Haestad Press, Waterbury, CT, U.S.A, 2002.