

**CB382 Water Resources Engineering**

**COURSE INFORMATION**

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laborator y	
CB281	3	5	4	2	0	3

**COURSE AIM**

This course is designed to provide the students with the fundamentals of hydrology, water resources engineering and water resources management.

**COURSE WEEKLY CONTENTS**

- 1 Fields and management challenges of water resources (quality and quantity) for the municipal, industrial and agricultural sectors.
- 2 Watershed descriptive hydrology and measurements.
- 3 Quantitative hydrology and principles of sustainability.
- 4 Quantitative surface water hydrology.
- 5 Groundwater hydrology, and principles of sustainability.
- 6 Groundwater engineering
- 7 Flow regimes in natural and open channel streams and sediment transport. + Midterm Exam
- 8 Design of water supply open channels uniform flow
- 9 Design of water supply open channels: non-uniform flow.
- 10 Reservoirs and lakes.
- 11 Hydraulic structures for water resources management.
- 12 Hydraulic structures:
- 13 Flood-damage mitigation structures and storm-water management.
- 14 Sustainability of water resources management and effects of global climate change.
- 15 Case studies of water resources development and water quality management.

**STUDENT GRADING & ASSESSMENT**

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	20 Midterm	←	10	MARKS		→	30
To be freely distributed among possible assessments							
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** Hydrology and Hydraulic Systems, Ram Gupta, Waveland Press, 2008.  
**Other** Water Resources Engineering, Larry W. Mays, John Wiley, 2<sup>nd</sup> Edition, 2004.  
 Flood Risk Management, G. Fleming, ed., ICE, Thomas Telford, U.K., 2000.