

BIO 7310
Global Aquatic Resources

Monday, 6:15 - 9:00 pm

Course Information and Syllabus

(1) INSTRUCTOR

Walter Rast

Freeman Bldg., Room 122

Tel: (512) 245-2284; Fax: (512) 245-7919

(2) OFFICE HOURS

Monday, 2:00-4:00 pm, or other times by appointment

(3) TEXTBOOK

Water - A Shared Responsibility

United Nations World Water Development Report 2

UNESCO and Berghahn Books (2006 - 584 p.)

UNESCO ISBN 92-3-104006-5; Berghahn 1-84545-177-5 (paperback)

(4) REFERENCE TEXTS (available at Alkek Library Reserve Desk)

- *Water. A Reflection of Land Use. Options for Counteracting Land and Water Mismanagement*
Malin Falkenmark et al., Swedish Natural Research Council (1997, 128 p.)
- *Water in Crisis. A Guide to the World's Freshwater Resources*
Peter H. Glick (ed.), Oxford University Press (1993; 473 p.)

(5) GRADING

Class Presentation & Report - 60%

Final Exam - 30%

Participation in Class Discussions - 10%

COURSE CONTENT

1. Introduction

- *Global and regional water distribution & uses*
- *Major water issues*

2. Types and Characteristics of Freshwater Systems

- *Water in frozen form*
- *Water in the atmosphere*
- *Water on the land surface (rivers & streams [transport]; lakes & reservoirs {storage}; endorheic/salty lakes [water with no outlets]; wetlands [flooded areas]*
- *Water under the land surface (groundwater)*
- *Freshwater - coastal linkages (estuaries, deltas)*

3. Regional Perspectives on Aquatic Resources

Asia & Pacific region; Africa; Latin America & Caribbean; West Asia (Middle East); Eastern Europe; North America & Western Europe; Polar regions

4. Global/Regional Water Conferences & Outcomes

- *Stockholm Environmental Conference; La Plata Conference; Dublin Conference; Bruntland Report; Earth Summit; Millennium Development Goals; World Water Fora; Millennium Ecosystem Assessment, etc.*

5. Water, Human Health and Aquatic Ecosystems

- *Human health and contaminated water; disease vector linkages*
- *Aquatic ecosystem health; point & nonpoint-source pollution; ecosystem service valuation*

6. Dams and Reservoirs

- *Differences/similarities between natural & artificial lakes*
- *Positive benefits & negative impacts of dam construction*
- *World Commission on Dams*

7. Integrated Water Resources Management (IWRM)

- *Definitions (EMINWA, Agenda 21, Global Water Partnership)*
- *Characteristics (scientific/technical; socioeconomic components)*
- *International dimensions (TDA & SAP)*

8. Ecosystem Indicators

- *Definitions & roles*
- *Environmental & socioeconomic indicators; GEF*

9. Other Topics (to be determined)

- *Global warming, pharmaceutical/medicinal pollution, ocean acidification, etc.*

10. Student Presentations

Individual student presentations & discussion of analyses of "problem" water systems around the world