

**** Fall 2017 Course Announcement ****

ABE 591

(3 credits)

Water, Technology and Society

Nobel Laureate Richard Smalley coined the term **World's Grand Challenges**. **Water, Food and Energy** are three of the top grand challenges for humanity and each have significant impacts on the other seven.

In the coming century water will become increasingly important for the growth and wellbeing of societies. Engineers and social scientist will need to work together to resolve issues of access, availability and water rights. Over the centuries irrigated agriculture has consumed the lion's share of available fresh water for the production of food and fiber and in some cases with a significant negative impact on the environment. Recent increases in the use and production of energy has in some cases exacerbated the issue. The nexus of water, food and energy is truly one of the great challenges of our time.

The purpose of this course will be to explore the issues of water, technology and society in the context of engineering, economics and social justice. Students will be introduced to the principle uses and consumption of fresh water including agriculture, industry and domestic uses. Issues such as virtual water distribution and economics will be discussed in the context of various countries and river systems around the globe. As global climate change becomes a factor in the availability of water, engineers and social scientists will need to come up with new and unique sustainable systems for the use of world water.

The course is open to graduate students and senior undergraduate students majoring in engineering, agriculture and social sciences. Students who take this course would benefit from having courses in environmental science and engineering, political science and economics as well as having strong background in math and science.

The course will be offered;

Tuesday and Thursday from 12:00 – 1:15 pm

For further information please feel free to contact the instructor;

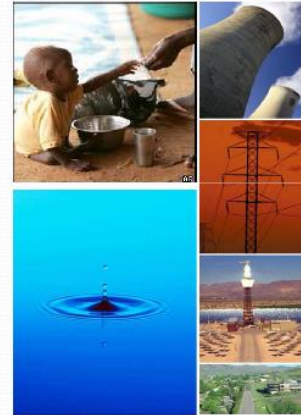
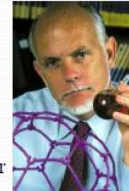
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• The World's Grand Challenges ...

- Energy
- Water
- Food
- Environment
- Poverty
- Terrorism & War
- Disease
- Education
- Democracy
- Population



DRAFT COURSE SCHEDULE

Fall 2017

Tuesday and Thursday 12:00 – 1:15 pm

<i>WEEK</i>	<i>DATE</i>	<i>TOPIC</i>	<i>ROOM / HMK</i>
1	8/22-8/24	Introduction Water : A world Grand Challenge	Readings Written Assignment
2	8/29-9/31	Water and the Rise and fall of Civilizations	Readings Written Assignment
3	9/05-9/07	Water Rights: Around the World Presentation and Discussion	Readings Written Assignment
4	9/12-9/14	Irrigation Water Use Presentation and Discussion	Readings Written Assignment
5	9/19-9/21	Case Study I : Colorado River Basin Presentation and Discussions	Readings Written Assignment
6	9/26-9/28	Domestic Water Use Presentation and Discussion	Readings Written Assignment
7	10/03-10/05	Case Study II : Great Lakes Region Presentation and Discussion	Readings Written Assignment
8	Fall Brk-10/12	Energy Water Use Presentation and Discussion	Readings Written Assignment
9	10/17-10/21	Case Study III : China Yangze and Yellow Rivers Presentation and Discussion	Readings Written Assignment
10	10/24-10/26	Environmental Water Use Presentation and Discussion	Readings Written Assignment
11	10/31-11/02	Case Study IV : Middle Eastern Water Issues Presentation and Discussion	Readings Written Assignment
12	11/07-11/09	Global Climate Change and Water Presentation and Discussion	Readings Written Assignment
13	11/14-11/16	Case Study V : Australia - Murray Darling River Presentation and Discussion	Readings Written Assignment
14	11/28-11/30	Case Study VI : Florida Everglades Presentation and Discussion	Readings Written Assignment
15	12/05-12/07	Term Project Presentations	

Course Structure: The course will be structured as a seminar discussion class. With the Tuesday class consisting of a presentation on the topic with breakout group questions and the Thursday classes will be case studies, role playing and presentations by the breakout groups and a discussion of the topic. For this reason it is expected that all students will attend all classes and participate in group discussions. Grading will be based on attendance (30%), course participation (30%) and term project report and presentations (40%).