Course

**Sustainable Development: Environmental, Economical, Managerial, and Health Perspectives**

*Inspiring Future Leaders in Sustainable Development*

*September 3-6, 2018*

*College of Management, National Chung Hsing University, Taichung, Taiwan*

**Instructor**

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**Teaching Assistant**

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**Intended Students:** Undergraduate and graduate students enrolled at NCHU for the Fall Semester of 2018. Students from other universities can participate in with approval of the instructor and host instructors.

**Time:** September 3 to September 6, 2018

**Location:** Social Science and Management Building, Room 227

**Course Credits:** 1 credit (18 hours)

**Course Introduction**

Humanity relies upon natural systems of Food, Energy, and Water (FEW), which are continually being stressed due to population growth and anthropogenic activities. People are migrating to megacities and life style changes are affecting global health. Developing countries, countries with economies in transition, and also developed countries must confront a population-surging globe to face the increasing challenges of sustainable and persistent use of land and water resources, food insecurity, poverty, and natural resource degradation and depletion. Stakeholders across different sectors and regions in each country will be impacted differently by these challenges and may vary in their interests, so ecosystems and social systems are impacted in different ways.

Over the next 50 years, the world population is expected to increase to about 10 billion people, which is likely to accelerate the consumption of natural resources and cross-planetary boundaries, causing irreversible environmental change. Energy and food production needs to double under the constraints of clean environment, water and global warming.

This course will bring together opportunities for both interdisciplinary and team learning. Students will engage in interdisciplinary discussions that focus on complex topics at the intersection of technology, society, and policy. This course will allow students to learn about sustainability’s grand challenges at the nexus (interconnections/interdependencies) of energy, food, and water under the constraint of environmental and climate change. Primary objectives include: (1) improve students’ understanding of grand challenges of energy, food, and water, (2) management of natural resources and sustainability,(3) impact of technology on environment and climate change, (4) economics, business, and managerial perspectives on sustainable development.

**Course Description**

Few courses focus on interdisciplinary topics and as well as interactive team learning. This course is structured in a manner that puts students at the focal point of learning, by providing opportunities for them to learn from their peers and to share their knowledge with each other. The role of the instructor is to facilitate learning. This course will bring together opportunities for both interdisciplinary and team learning. Students will engage in an interdisciplinary discussion that focuses on complex topics at the intersection of environmental sustainability, economical managerial and health perspectives. Students will participate in an interactive and collective learning and will get a flavor of how to consider multiple viewpoints. Students from different disciplines will be able to participate in this session: science, engineering, technology, social sciences, agriculture, business and management. They will learn about the role of technology and its impact on society, including the role of policy, politics and regulations. They will also explore nexus of food, energy and water.

A few guided questions will be: How does technology play a role in our lives? What is currently state-of-the art within different technologies (e.g. renewables/non-renewables,)? What is the role of entrepreneurship/innovation in taking technology to market? What socio-economic-political factors prevent certain technologies from being deployed on a wide scale? How does culture/leadership/infrastructure affect what types of technologies may or may not be adopted successfully? How do developed and developing economies respond to the availability of local natural resources and market needs? What is the role of technology in addressing the “Grand Challenge” issues related to food, energy and water? What is the role of policy, politics, and regulation in sustainability? A deep dive into these sorts of questions will help students to understand the complexity of the challenges related to sustainable development (e.g., environmental/climate, economics/business, policy/regulations) in today’s world. Finally, Students who participate actively will benefit most from these interactive sessions on critical perspectives of technology and policy in today’s society.

**Reference/Text Book**

There is no textbook for this workshop course. Classroom discussion will be driven by reading and learning from a wide range of sources: Journals, magazines (e.g., Technology Review); The Economist, national/international reports (e.g., U.S. Department of Energy and National Science Foundation websites), TED talks on YouTube, documentaries, popular nonfiction texts, and websites.

The course in broken down into a number of different components:

* Lectures
* In-class activities and case studies
* Group discussions
* Quizzes
* Team project and presentation

**Homework:** Daily reading assignments, quizzes, and discussion

**Exam/Grading:**Grades will consist of the following:

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| Class room attendance | 10% |
| Class participation/discussion | 15% |
| Quizzes | 25% |
| Final Team Presentation | 50% |
| Subtotal | 100% |

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| **Course Schedule: Sustainable Development: Environmental, Economical, Managerial, and Health Perspectives** | |
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| September 3rd (Monday) |  |
| 12:00-1:00 PM | Luncheon with Faculty and Students |
| 1:00-1:30 PM | Free Time |
| 1:30-2:50 PM | Introduction |
| 2:50-3:00 PM | Break |
| 3:00-4:20 PM | Sustainability Perspective |
| 4:20-5:00 PM | Project Discussion with Instructor |
| 5:00-7:00 PM | TA's Session: Work on Group Project |
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| September 4th (Tuesday) |  |
| 10:30 AM -12:00 PM | Energy Perspective: Fossil and Renewable Resources |
| 12:00-1:00 PM | Lunch |
| 1:00-1:30 PM | Free Time |
| 1:30-2:50 PM | Sustainable Agriculture Perspective: Food and Water |
| 2:50-3:00 PM | Break |
| 3:00-4:20 PM | Technology Perspective: Environment and Climate Change |
| 4:20-5:00 PM | Project Discussion with Instructor |
| 5:00-7:00 PM | TA's Session: Work on Group Project |
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| September 5th (Wednesday) |  |
| 10:30 AM -12:00 PM | Managerial Perspective: Policies, Politics, and Regulations |
| 12:00-1:00 PM | Lunch |
| 1:00-1:30 PM | Free Time |
| 1:30-2:50 PM | Business and Economics Perspective: Technology Diffusion and Circular Economy |
| 2:50-3:00 PM | Break |
| 3:00-3:55 PM | Global Health Perspective: Life-Style Changes and Diseases |
| 355-4:05 PM | Break |
| 4:05-5:00 PM | NEXUS Perspective: Interdependencies and Interconnections |
| 5:00-7:00 PM | TA's Session: Work on Group Project |
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| September 6th (Thursday) |  |
| Decide your own time | Work in Your Group for Presentations |
| 3:30-5:00 PM | Group Presentations |
| 5:00-5:30 PM | Prizes, Certificate Presentations, and Group Photo |
| 5:30-7:00 PM | Dinner with Faculty, Dean, TA, and Others |
| 7:00 PM | Good Bye |