

APS1009 COURSE: Natural Resources Management and Enterprise

Overview:

Natural resources provide mankind with important ecosystem services such as clean water, energy, minerals and biological resources from terrestrial and marine ecosystems, which are essential for the survival and development of mankind. However, the increasing demands for these natural resources, due to the growth of the human population and global urban development, combined with the slow decrease in availability of these finite resources, urgently calls for the sustainable management and the application of Best Management practices with more efficient use of these resources.

Course Description:

This course aims to help students develop the necessary capabilities required of engineers working in Natural Resources enterprises, offering a unique view of the interdisciplinary challenges that are present in this field and provides the knowledge to identify and develop sustainable solutions.

We will analyze real case studies based on the management of Natural Resources and also public enterprises that are in charge of planning and developing national resources not only in Canada but also internationally.

Students will be evaluated as follows:

- 25 % participation in class and case studies
- 40 % group or individual project
- 35 % final test

Course Content:

1) Introduction

- 1.1) Natural Resources and Management
- 1.2) Why governments waste Natural Resources?
- 1.3) The need for Natural Resources Management and related Enterprises
- 1.4) Natural Resources Planning Issues, Fiscal Deficits and Natural Resources
- 1.5) Improving Public Enterprise for Natural Resource Management
- 1.6) Performance measurement within the Public Enterprise
- 1.7) Natural Resources in Canada
- 1.8) The Present: Development and The extractive Industries

2) Management Objective-Managing Natural resources Development

- 2.1) Benefits / Costs Analysis in Natural Resources Management
- 2.2) Policy, Planning, Organization and Administration as a Management System
- 2.3) Public Enterprise, Private Enterprises, PPP and Advocacy System
- 2.4) Planning Process and Stakeholders
- 2.5) Examples of Agency Planning
- 2.6) Water Management: Public Enterprise and Management

3) Natural Resources Enterprises Business and Coordination

- 4) Natural Resources Enterprises Management
 - 4.1) Management Tools
 - 4.2) Benefit Cost Analysis
 - 4.3) Financial Management:
 - 4.3.1 Capex & Opex
 - 4.3.2 Project Finance: issuing bonds and Cash Flow forecast
 - 4.4) Project Management within the Public Enterprise
 - 4.5) Process Management, KPI and KGI
 - 4.6) Team oriented organization within the Public Enterprise
- 5) National Funds managing Natural Resources proceeds, Investing Internationally
 - 5.1) Example to follow: The Government National Pension Fund of Norway
- 6) International Contracts and Investment in Natural Resources Management.
 - 6.1) Private International Investment versus National Local Commitment
 - 6.2) Type of Contracts
 - 6.3) Concerns dealing with Expropriation
- 7) Case Studies and Lessons Learned
 - 7.1) Nuclear Energy Project in Canada
 - 7.2) Water Project Management
 - 7.3) A Canadian Company developing an Energy Project in Colombia
 - 7.4) Risk Management in Natural Resource Projects
- 8) Sustainable Energy, Public Enterprise and Management
 - 8.1) Managing the Need for Natural Resources as Energy Sources
 - 8.2) Current effects of the down turning of Energy from Oil and Gas Prices
 - 8.3) Minerals Project Management Risks
- 9) The Future: Natural Resources Enterprise Management, an Optimistic Approach

Academic references for this course:

Required:

- Course Pack for APS1009H,(*), U. of T., Prof. Eduardo A. Fernandez
- Harvard Business Publication Case Studies (TBA)
- No Textbook is required

Suggested text for additional learning:

- Dunlap, Richard. Sustainable Energy. Cengage Learning, 2015.

Day to Day Calendar-DRAFT

Start Date: Wednesday, September 9th 2015

End Date: Wednesday, December 2nd 2015

Week #	Date	Topics	Reading & Assignment
1	09/09/15	Introduction to Sustainable Natural Resources Management and Enterprise. Project Description Why governments Waste Natural Resources (1*). Planning, Policy and Administration. Fiscal deficits. The Business respond to Sustainability	(*V1 Pag.1-32) , (*V2 pag.417-434) Climate Change/effect on Natural Resources Manag.(web TBA)
2	09/16/15	Issues on Public Natural Resources Enterprises. Business Overview on Natural Resources,PPP, Benefit-Cost Analysis Populism and Natural Resources Internationally The Stakeholder Management Process	(*V1Pag.103-138) (*V2pag.660-666), (*V2Pag.533-537)
3	09/23/15	Financial Management, CAPEX & OPEX, Cash Flow Forecast, , Cash Flow & Country Risk Process Management, BPM & BPT, Natural resources Management in Canada	The Resource Gap/Canada (*V2 pag.735-737) V1 Pag 247-275)
4	09/30/15	National Funds managing Natural Resources proceeds. International Contracts and Investment/ Natural Resources. PPP- Public Private Partnership	Harvard B/ Alpha Energy/ (*V2 pag.435) (V2 pag.629-635)
5	10/07/15	International Natural Resources Management Case Studies, Lessons Learned Water Project Management Rethinking Institutions for Natural Resource Management. (3*), Performance Measurement	Harvard B / Water Crisis India, (*V2 pg. 543 to 580) (*V2 pag.497)
6	10/14/15	Sustainable Energy and Natural resources	TBA & (*V2 pag.724)
7	10/21/15	International Business Cases in Natural resources Nuclear Energy Project in Canada Guest Speaker	Harvard B / First Quantum Minerals/ Eurasia Nat. Resources,()
8	10/28/15	Improving Public Enterprise Performance in Management of Natural Resources. KPI and KGI	(*V1 pag.139 to 200)
9	11/04/15	Environmental Impact and Health concern with Natural resources development-CSR -Conflict Minerals	Sino Iron in Australia (*V2 pag.753) and (*V2 pag.724)
10	11/11/15	A Canadian Company developing Energy Project in Colombia- Guest Speaker Risk Management in Natural Resource Projects	Natural Res. Contract Renegotiations (*V2 pag.585)
11	11/18/15	Management Tools, Coordination, The Future, Natural Resources Enterprise Optimistic Approach, Group Project Presentations	The Galore Creek Project (*V2 pag.763)
12	11/25/15	Group Project Presentations	The TNK-BP joint venture (*V2 pag.749)
13	12/02/15	Group Project Presentation -Final Exam (TBA)	A Promising? StrategicSource of Energy (*V2 pag.)