### Course Description
ECON 3068 – Energy Economics II. This course is tailored for the student desiring an understanding of the relationship between the energy sector and the wider economy. It covers additional topics in Energy Economics, with emphasis on tracing the macroeconomic impact and implications of energy sector decisions. Topics to be covered include oil price shocks and the global economy, the problems associated with managing resource generated wealth, transparency, resource based industrialization, depletion policy and environmental issues.

### Purpose of the Course
The course is intended to lead students to an appreciation of the role of the energy industry in the national and global economies and the issues associated with managing resource based economies.

### Instructor information
- Name of instructor(s): Michael John
- Office address and phone: Mobile 771-0904
- E-mail address: Michael.john@sta.uwi.edu
- Office hours: To be advised
- Communication policy – preferred method of contact - E-mail

Dear Student,
Welcome to Energy Economics II. In this course we explore the relationship between the energy sector and the macro economy. We will cover a fair amount of material but be assured that the outcomes are rewarding. I expect that your views on energy issues will change as you come to a greater appreciation for the role of energy in our lives and the challenges associated with managing energy rich economies. Treat the course as a learning opportunity and do enjoy the experience.

Michael John

### Content
As we explore the importance of energy to the macro economy the material is divided into two sections - the theoretical foundations in which we explore the economic models of the resource rich economy and extend the discussion to managing such economies and resource based industrialization. In the second section we explore a number of policy issues as the emerge in terms of prominence eg. The impact of Energy Price Shocks, Energy Investment, Energy Access, and Depletion, Governance and the Extractive Industries Transparency Initiative and Climate Change issues including the Clean Development Mechanism.

### Goals/Aims
To provide students with the analytical tools to facilitate the overall understanding of the macro-economic impact energy sector.

### General Objectives
At the end of the course students should:

- Have a greater appreciation of how the energy industry drives the global and local economy, and
- Appreciate the challenges of transformation beyond the dominance of energy sector.
- Evaluate the options associated with resource management, Climate change mitigation and adaptation and Energy consumption

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**Part I - Theoretical Foundations**

**Themes/Topic and Unit Objectives**

Introduction - Introducing Energy Economics II-Building Blocks
- Introduction - Energy Management Overview
- Global Issues - Review of Energy Pricing

Students should be able to:
- **Compare and contrast the different approaches to oil, electricity and gas pricing**
- **Assess the implications of energy price fluctuations**

**Readings**

Fattouh, Bassam: An anatomy of the crude oil pricing system, Oxford Institute for Energy Studies, 2011

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The causes of crude oil price volatility, Middle East Economic Survey 58(13),
http://www.mees.com/postedarticles/oped/v48n13-5OD01.htm 2005

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**Unit 1 Energy and the macro economy:**

**Models of the energy economy - Concepts and Theoretical Formulations**
- Plantation Economy
- Open Petroleum Economy
- The Rentier state
- The Resource curse Thesis and Dutch Disease

**Students should be able to:**
- Explain the role of natural resources in economic development
- Analyze the impact on different types of economies
- Identify the key theoretical perspectives on resource based economies
- Compare and contrast the various theoretical perspectives
- Critique the various policy prescriptions of these perspectives

**Essential Readings**

Auty, RM *Oil and Development in the Middle East*, BRISMES Annual Conference 2012, Revolution and Revolt: Understanding the Forms and Causes of Change 26-28 March 2012, London School of Economics and Political Science

Best, L and St. Cyr, *Modelling the Trinidad and Tobago Economy*, Staff paper Trinidad and Tobago Institute of the West. Indies -2004

Best, Lloyd and Kari Levitt, *Critical Review of the contributions of W.A. Lewis and Dudley Seers to Issues of Industrialization and Employment* in the Caribbean in Essays on the Theory of the Plantation Economy UWI Press 2009 Ch. 8


Pantin Dennis, *Governance in Natural Resource Based Rentier Economies in the Caribbean* in Pantin (ed.) The Caribbean Economy- A Reader Ch.28
Seers, Dudley: *The Mechanism of the Open Petroleum Economy*, S.E.S also in Pantin (ed.) The Caribbean Economy- A Reader Ch. 6
St Cyr, Eric : *Some Fundamentals in the Theory of Caribbean Economy* in Pantin (ed.) The Caribbean Economy- A Reader Ch. 7
Van der Ploeg *Natural Resources: Curse or Blessing?* Journal of Economic Literature 2011, 49:2, 366–420

**Other Readings**

Arezkia Rabah,* and Frederick van der Ploeg, Trade policies, institutions and the natural resource curse, Applied Economics Letters, 2010, 17, 1443–1451
Jobity , R Impact of Natural Gas on the Trinidad and Tobago economy Gasco News , Vol 17.No.2
Macartan Humphreys, Jeffrey D. Sachs, and Joseph E. Stiglitz, Escaping the resource curse Chapter1 & 12 Escaping the Resource curse.

### Unit 2 Macroeconomic Management in Resource Rich Economies- The Challenges and Strategies

Students should be able to:
- Compare the economic management strategies of different oil and gas exporting states
- Explain the concepts of the resource curse thesis and Dutch disease
- Analyze the approaches of economies viewed as escaping the curse
- Critique the different approaches to the management of resource rents
- Evaluate the merits and demerits of Heritage Funds

**Essential Readings**

Mc Guire G. *Managing the Resource-based Economy in times of Plenty*, in Boopsingh & McGuire From Oil to Gas and Beyond, University Press of America, 2014
Auty R, and A Gleb *Oil windfalls in a small parliamentary democracy their impact on Trinidad and Tobago*, (1986) World Development , Vol.14 , # 9,
Devlin Julia and Michael Lewin *Managing Oil Booms and Busts in Developing Countries in Managing Volatility and Crises -A Practitioner’s Guide*
Velculescu Delia and Saqib Rizavi *Trinidad and Tobago: The Energy Boom and Proposals for a Sustainable Fiscal Policy*, IMF Working Papers, October 2005
Jeffery Davis et al *Stabilization and Savings Funds for non –renewable resources, experience and fiscal policy Implications* International Monetary Fund: Washington DC. 2001

**Other Readings**

Davis, JM (ed.). *Fiscal Policy Formulation and Implementation in Oil Producing Countries*, IMF 2003
Unit 3 The Energy Sector and Industrialization vs Energy Based Economic Development

- Production possibilities from gas.
- Resource based industrialization revisited.
- Creating sustainability from oil and gas: options and constraints-Local content and participation
- Energy based Economic Development

Students should be able to:

- Explain the concept of resource based industrialization
- Compare and contrast Resource Based Industrialization with Energy Based Economic Development
- Appraise the history and significance of national ownership of energy resources in Trinidad and Tobago
- Critique the policy of Local content and participation

Essential Readings


Auty, R.M. Resource –based industrialization; Sowing the oil in eight developing countries, Clarendon Press, New York 1990

Barclay, L FDI Facilitated Development ; The case of the Natural Gas Industry in Trinidad and Tobago.( Mimeo) UWI Mona 2003

Boopsingh T M . The Last Decade- Liquefied Natural Gas and its Impact, in Boopsingh & McGuire From Oil to gas and Beyond, University Press of America, 2014


GORTT Trinidad and Tobago Energy Sector Local Content and Local Participation Policy Framework. www.energy.gov.tt

McGuire G. Natural Gas as the Motor of Economic Development. Gasco News Vol. 14# 3

Motley Wendell, Trinidad and Tobago Industrial Policy 1958-2008 Chapters 1,2 and 3.

Pantin Dennis, Industrial Policy in the Caribbean in a time of Liberalization, Globalization and regional blocs in Pantin (ed) The Caribbean Economy- A Reader Ch. 2 7

Paul A.E. Maximizing National value-Ownership, National Participation Local Content and sustainable Development, in Boopsingh & McGuire From Oil to gas and Beyond, University Press of America, 2014

Other Readings

Baisden , C New Horizons for Ethylene – The challenge of implementing a local ethylene cracker, Gasco News Vol 15


Punnett, C and John B. The philosophical and policy underpinnings of the local Natural Gas Industry. Gasco News Vol.14#3

Ram Justin Rates of Return: Can Natural Resources Sustain Wealth? Pantin (ed.) The Caribbean Economy- A Reader
Part II Energy Sector and the Macro Economy - Issues

Themes/Topic and Unit Objectives

Unit 4 Global Energy Challenges
Theme: Oil Price shocks and the global economy
Students should be able to:
- Classify and explain the types of oil price shocks
- Analyze the impact of oil shocks on different types of economies
- Evaluate the different policy approaches adopted by different states

Essential Readings

Berument, M. Hakan; Ceylan, Nildag Basak; Dogan, Nukhet: The Impact of Oil Price Shocks on the Economic Growth of Selected MENA Countries. Energy.
Fattouh, Bassam: An anatomy of the crude oil pricing system, Oxford Institute for Energy Studies, 2011
--------------- The causes of crude oil price volatility, Middle East Economic Survey 58(13), http://www.mees.com/postedarticles/oped/v48n13-5OD01.htm, 2005
Kilian, Lutz: Not All Oil Price Shocks Are Alike: Disentangling Demand and Supply Shocks in the Crude Oil Market, American Economic Review 2009, 99:3, 1053–1069
Morana, Claudio: The Oil Price-Macro economy Relationship Since the Mid-1980s: A Global Perspective The Energy Journal, Vol. 34, No. 3. 2013, IAEE.

Other Readings

Jacquinet, Pascal; Kuismanen, Mika; Mestre, Ricardo; Spitzer, Martin: An Assessment of the Inflationary Impact of Oil Shocks in the Euro Area. Energy Journal 2009, Vol .30 Issue 1
Unit 5 Energy Security –

- Concepts
- The Caricom Energy Challenge: The Search for Solutions

Students should be able to:

- Explain the various facets of the concept of Energy Security
- Describe the patterns of Caricom Energy Use
- Explain the energy challenges facing Caricom states
- Evaluate the policy responses.

Essential Readings


Bryan A.T. Trinidad and Tobago and its Neighbours, in Boopsingh & McGuire From Oil to gas and Beyond, University Press of America, 2014

Eastern Caribbean Gas Pipeline Company The Eastern Caribbean Gas Pipeline: Presentation to the Trinidad and Tobago Chamber of Industry and Commerce


IEA Focus on Energy security: Costs, benefits and Financing of Holding Emergency Oil stocks, 2013

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Other Readings

Farrell, T Caricom Oil Market UWI St. Augustine 1982*
McGuire G Caricom Impotence on LNG dispute. Mimeo August 2005**
Phillip, D The Caricom Petroleum Market, MSc. Thesis UWI (1980)*
Wood, Anthony The Case Against Petrocaribe. Barbados Advocate News; 18/9 05

Unit 6 Energy Policy Issues

- Energy Investment and Financing
- Energy Access and the poor
- Energy Independence and Depletion policy
- Environmental Issues:
  - Climate change and the energy sector
  - The Clean Development Mechanism
  - Kyoto Protocol
- Alternative Energy
- Governance Issues;
  - Extractive Industries Transparency Initiative
- Energy sector regulation

[6]
Students should be able to:

- Explain the concepts of depletion and Peak oil
- Evaluate the Extractive Industries Transparency Initiative
- Analyze the role of the energy sector in climate change
- Critique the impact adaptation and mitigation strategies on energy and the economy
- Explain the main approaches to regulation.
- Evaluate the policy options to facilitate Energy Access inclusive of energy subsidies
- Appreciate the challenges of energy financing
- Evaluate the performance of Trinidad and Tobago as an EITI member.

**Essential Readings**


---------- Ending Dependence Hard Choices for Oil-Exporting States, Chatham House, 2008.

EITI Drilling down the Civil society Guide to Extractive Revenues and the EITI, 


UNFCC **Modalities and procedures for a clean development mechanism as defined in Article 12 of the Kyoto Protocol** [http://cdm.unfccc.int/Reference/COPMOP/08a01.pdf#page=6](http://cdm.unfccc.int/Reference/COPMOP/08a01.pdf#page=6)

Pielke Jr., Roger and Bazilian, Morgan: *Defining Energy Access for the World’s Poor*, Issues in Science and Technology Fall 2013


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**Assignments**

**Tutorials** Students will be expected to prepare and present tutorial questions as well as participate in tutorial discussion when colleagues are presenting.

**Other Assignments** Students will complete three assignments during the semester. Each student must deliver two tutorial presentations on questions from the tutorial sheets. The second assignment—an Essay provides an opportunity to practice the analysis of industry issues. Thirdly students will be involved in a group project to be completed three weeks before the teaching ends.

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**Course Assessment**

Assessment is designed to establish the student understanding of the material and the ability to critically examine energy matters and issues. Students will be assessed on the following basis:

**Course Work 40%**

- Course Assessments – comprising of:
  1. **Course Work Essay** - 5%
  2. **Two quizzes (5% each)** 10%
  3. **Tutorial Presentation** - 5%
  4. **Group Project 20%**
Final Examination: 60 %. This examination will be two hours long and consist of not less than five essay questions of which students will be required to select three questions.

Evaluation
Students are encouraged to communicate with the lecturer and Tutor on challenges being experienced in the course as well as to provide feedback on how their experience can be improved and enhanced. In addition the lecturer will solicit feedback from the Teaching Assistant on student Tutorial performances. Structured Post lecture feedback by students will be encouraged.

Teaching Strategies
Students will have three (3) contact hours for weekly.

- Lectures - Wednesday (Day & EU), 5.00-7.00p.m. (TCL TR 5)
- Tutorials - To be announced

Lectures will be delivered with the aid of power point presentations. Student participation will be encouraged and students are advised to read assigned material before the scheduled class, so that they can participate meaningfully in the class and tutorial discussion. Tutorial attendance is mandatory.

Faculty regulations allow for debarment from the Final Examination in the case of students who do not attend at least 75% of tutorial classes. The Course Lecturers and tutors will be monitoring and subsequently enforcing this regulation.

Recommended Resources

**Essential Text**

**Other useful Resources**
- Madureira N. L., *Key Concepts in Energy*, Springer International Publishing Switzerland 2014. DOI: 10.1007/978-3-319-04978-6_1,

**Other Resources**

Handouts will be provided on the myeLearning site.

Additional Information

Students are reminded of the University’s Examination Regulations for First Degrees, Associate Degrees, Diplomas and Certificates including GPA Regulations:

19. Any candidate who has been absent from the University for a prolonged period during the teaching of a particular course for any reason other than illness or whose attendance at prescribed lectures, classes, practical classes, tutorials, or clinical instructions has been unsatisfactory or who has failed to submit essays or other exercises set by his/her teachers, may be debarred by the relevant Academic Board, on the
recommendation of the relevant Faculty Board, from taking any University examinations. The procedures to be used shall be prescribed in Faculty Regulations.

[This regulation (19) will be enforced. Students failing to attend a minimum of 75% of the tutorial classes will be debarred from taking the final Examination. Consequently, students are strongly advised to promptly bring to the attention of their Tutors/Lecturer evidence of extenuating circumstances that prevent them from attending tutorial class/lectures. Evidence of such circumstances will not be accepted at the end of the semester when the list of students to be debarred in this course is published.]

97. (i) Cheating shall constitute a major offence under these regulations
(ii) Cheating is any attempt to benefit one’s self or another by deceit or fraud.
(iii) Plagiarism is a form of cheating.
(iv) Plagiarism is the unauthorized and/or unacknowledged use of another person's intellectual effort and creations however recorded, including whether formally published or in manuscript or in typescript or other printed or electronically presented form and includes taking passages, ideas or structures from another work or author without proper and unequivocal attribution of such source(s), using the conventions for attributions or citing used in this University.

Grading policy The University Grading System will apply.

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### Course Calendar

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<th>Date /Week</th>
<th>Topic/Lecture</th>
<th>Assignment/</th>
<th>Tutorial sheet</th>
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| Jan 21 Week 1 | 1. Course Overview, Analysis of Thought  
  a. Part I Theoretical Foundations  
  b. Energy and the macro economy-Concepts and issues | Project Notification | Sheet 1 |
| Jan 28 Week 2 | 2. Macroeconomic management in resource rich countries | Quiz 1 | |
| Feb 4 Week 3 | 3. The Energy Sector and Industrialization n-  
  a. Resource-based Industrialization | Essay Preparation | |
| Feb 11 Week 4 | 4. The Energy Sector and Industrialization II –  
  a. Energy Based Economic Development I- Concepts, Definition and Processes | | |
| Feb 18 Week 5 | 5. Energy Based Economic Development II-  
  a. Policies Challenges Common themes | Essay submission | Sheet 2 |
<p>| Mar 11 Week 8 | 8. The Caricom Responses to the Energy Security Problems | | Sheet 3 |</p>
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<th>Date</th>
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<th>Session</th>
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<tr>
<td>Apr 1</td>
<td>Week 11</td>
<td>11. <em>Policy Issues II</em> - Governance, EITI, Regulation</td>
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<td>Project Due</td>
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<td>Apr 15</td>
<td>Week 13</td>
<td>1. Revision Lecture</td>
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<td>May</td>
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<td>2. Final Examinations</td>
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