**COURSE TITLE:** ECONOMETRICS 1  
**COURSE CODE:** ECON 3049  
**LEVEL:** UNDERGRADUATE  
**NUMBER OF CREDITS:** 3  
**PRE-REQUISITES:** ECON 2006 OR ACCT 2015 OR MATH 2140 & 2150  
**COURSE DESCRIPTION:**  
- This is an introductory course in the theory and practice of classical Econometric Methods. After successful completion of this course, the student should be able to:  
  1. Understand the scope and limitations of classical econometric techniques  
  2. Read, write and properly interpret articles and reports of an applied econometric nature using these techniques.  
  3. Be in a position to advance upon the basic foundations of econometric theory and practice with some ease.  

Some basic knowledge of matrix algebra and elementary statistical theory will be assumed, but a lot of it will be re-introduced during the lectures. Most of the standard texts contain chapters dealing with these topics and students are advised to study them. The computer is a fundamental tool in this course and students will be required to become familiar with the Econometric package, EViews, for which one mandatory computer session will be held.  

- The course will be taught using lectures and tutorials. In both cases student participation is required.  

- The course is very relevant to the study of economics since it combines the mathematical and theoretical aspects of the subject. It is also very marketable because the training in EViews and econometric analysis conducted in the course are helpful to students who decide to enter the working world and to those who decide to pursue further academic study.  

- This course fits in with the University’s mission since one of its aims is to ensure that the student can apply the knowledge learned here at the University in the world of work and in further study. Students will also be required to develop skills in analysis and syndication of the earlier work learned.  

- The main components of the course deal with Single Equation Models, Dynamic Equation Models, Instrumental Variable Estimation, Multiple Equation Models.
- The course has a coursework component in the form of a group project where students are required to come together and apply the knowledge learned in the course to a real economic problem of their choosing. This will be graded as 25% of the final mark.

PURPOSE OF THE COURSE:

- This course is important to the students in the BSc. Economics programme because it shows students how the different aspects of economics may be combined to produce a scientific approach that can be used to find solutions to economic problems.

- Econometrics attempts to use the information that the student/economist already has to provide possible solutions to the problems faced in the economies around the world. These solutions may be formulated into theories which will be used to expand the economics knowledge base.

- It is also important to show students how economists come up with their projections – what methods they use, the strengths and weaknesses of these methods. This is done so that the students will learn to be critical in their thinking when they read an article about economic projections for the future in our very own Caribbean economies and internationally.

INSTRUCTOR INFORMATION:

- Instructor name: Ms. Varuna Ramlal
- Office address and phone: Room 210 FSS Building; Ext. 2398
- Email address: varuna.ramlal@gmail.com
- Office hours: Tuesday 10am-12 noon or by appointment
- Preferred method of contact: Email

LETTER TO THE STUDENT

Dear Student,
I am very pleased that you have chosen to do this course. I can assure you that this course will help you in the future in your career as an economist and a citizen of a country within an economic framework. I do hope that you can use the techniques and knowledge learned in this course to help you in the conduct of good economic research and everyday economic analysis so that you can remember that economics is important to all of us since it deals with the basics like income, wages, taxes, inflation – which are things that we all have to face as citizens of a country and of the world.
I do hope that you become as enthusiastic about econometrics as I am and I wish us all a good semester ahead!
Varuna Ramlal.
CONTENT:

1. The scope and purpose of econometrics; the notion of an econometric model; the importance of economic theory; the relevance of data and data problems (with particular reference to the Caribbean); the use of econometric models.

2. Single Equation Models: The general linear regression model; estimation by Ordinary Least Squares; calculation and use of the coefficient of determination; the use of non-linearities; dummy variables.
   
   The Gauss Markov theorem.
   
   
   Multicollinearity: problem and resolution.
   
   Specification Errors.
   
   Generalized Least Squares; Heteroscedasticity and autocorrelation: testing and elimination.


4. Instrumental variable estimation: The notion of consistency; consistency of the OLS estimator; the Instrumental Variable estimator. Errors-in-variables model (measurement errors).


GOALS/AIMS:

1. To ensure that the student understands the meaning of econometrics.
2. To teach the student the proper methods of conducting econometric analysis in an ethical manner.
3. To help the student retain the knowledge learned so that he/she can use it for future economic analysis and research.
4. To ensure that the students are comfortable in the learning environment and with the course material.
GENERAL OBJECTIVES:

- In order to achieve the above goals and aims I ask that the students assist me and help me in keeping the classroom orderly and keeping general rules of the classroom which include:
  
  o No cell phone use during class time
  o No excessive talking
  o No misconduct

- I also ask that you assist me by asking questions when you need topic/s clarified – you may email me or ask questions in class but please do not wait until the last week of classes to flood my inbox or beg for hints to exams!

- I will go over the methods of conducting proper econometric analysis several times during the course – in the Eviews sessions and in a theory based way. When I do the lectures I expect that you too will follow through and practice what is taught so that you may retain it for future use.

- I must stress that practice is important in this course to ensure that you have mastered the proper skills in using the software and in the matrix algebra that will be used in the course. If you are having problems, please contact me.

TOPIC OR UNIT OBJECTIVES:

- The first broad topic deals with the Single Equation Models which include all the components listed above. The objective is, at the end of this topic students should be able to show the Gauss-Markov theorem and state its components and why they are important to econometrics, they should be able to say why the T and F statistics are important in econometric analysis and state their shortcomings, they should be able to define concepts like Multicollinearity, Specification errors and Generalized Least Squares concepts such as heteroscedasticity and autocorrelation. After completing this topic, students should be able to comfortably attempt and complete past paper questions in this area – both theory questions and application questions.

- The second broad topic is listed as an Introduction to Dynamic Models. After completing this students should know what dynamic models are – the different types and their specific uses in different situations as well as which models can be used in certain situations and which models aren’t appropriate and why this is so. Students should be able to state which of the techniques are more appropriate to modern times and state recent developments in the area of dynamic modelling. They should also be able to illustrate knowledge of each technique – for example – do questions using Almon’s PDL model, the Koyck Transformation, Adaptive Expectations Model, Stock Adjustment and the Error Correction Model. At this point I expect the student’s group to have already decided what model they are going to use and why.
- The third broad topic area is Instrumental Variable Estimation. After this topic is completed I expect students to be able to understand the concept of measurement errors and the need to use a proper variable when measuring economic phenomena. Even when the variable itself cannot be used students should illustrate that they have put some thought into what can be used as a good substitute, or as the terminology states, a good ‘proxy’ variable.

- Finally, the course concludes with an Introduction to Multiple Equation Models. This final topic will show that equations are not necessarily estimated one at a time – instead they may form a part of a system of equations in a model that can be used to estimate one particular concept. In this topic the concept of forecasting techniques and the use for policy will be introduced which will build the foundation for the second part of the course.

ASSIGMENTS

- Weekly assignments are due in tutorial classes and student participation is MANDATORY for tutorials and lectures (I take this opportunity to remind you of the university regulation concerning attendance – if there is less than 75% attendance at either lectures or tutorials students will be penalized according to UNIVERSITY RULES. I stress this point because if you do not maintain 75% attendance the Department cannot help, this is a University matter! Please see the section titled ‘Additional Information’ at the back for further information).

- Group projects are due the last Friday in November (November 26th 2010) by 4pm to be submitted both in hard copy in the economics office and in soft copy by email to varuna.ramlal@gmail.com and on myelearning to me. Failure to submit on time will result in a penalty of 5% every day that your submission is late. These projects are worth 25% of your final mark.

COURSE ASSESSMENT:

- For any course assessment is important as it shows how students progress. Without assessment there is no way of gauging if the students have grasped the concepts in a satisfactory manner or not. So, although students detest assessment, it is a necessary evil.

- Assessment methods vary and in this course two types are used – group assessment, in the form of a project done in groups of 4 persons; and individual assessment in the form of a final examination.

- The coursework mark of 25% will be based on a project to be conducted in groups of four students. This will involve a written report on a topic, to be approved by the lecturer, involving (at least) the specification, estimation and validation of a simple

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1 If you are unable to find four students for your group, contact me and I shall place you in a group. Do not wait until our meetings to tell me that your group has three students or that you are not in a group. Do this early!
econometric model. The data used must be properly documented and included with the final report. A special session will be held early in the term to discuss possible topics of interest for the project. Groups will be required to submit a brief proposal for approval and meet with the lecturer during the semester, on dates to be decided, to formally discuss progress. The deadline for submission is **November 26th 2010**. Students must follow the procedures for submission as outlined below:

- The written report is to be submitted to the Economics Department during its opening hours and the register of submission **must** be signed
- A soft copy of the report **must** be emailed to varuna.ramlal@gmail.com at the same time that the written report is submitted and **must** submitted on the myelearning website

Students may apply in writing for exemption from the coursework requirement on the basis of a similar piece of work done (or being done) for another course. Exemption may be granted on the production of evidence of such work in which case the final examination will account for 100% of the total mark.

- The project accounts for 25% of your final mark and the final exam accounts for 75% of the mark.

- The project should be started in the first week of the semester and should be completed in the final week of November 2010 – the final deadline is November 26th 2010!

- The final examination will last for two hours.

**EVALUATION:**

- Course evaluation by students is as important as assessment of students by lecturers. Course evaluation will be conducted informally – I will ask you at the beginning and end of each class what you thought of the previous lecture and if you understood the concepts, you are not compelled to answer; and formally – in the form of online evaluation forms that you may fill out anonymously on myelearning and return your feedback about the course or at the end of the course by means of the questionnaire conducted by the Department of Economics.

- Your feedback is extremely useful and has been used over the years to improve course delivery and content as well. I do hope that you use the means of evaluation available to help make this course better in the future.

**TEACHING STRATEGIES:**

- Lectures: 2 hours per week; Tuesday 1-3pm for Day Students and Tuesday 5-7pm for Evening University Students.

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2 I will place instructions on myelearning how you should go about submitting the project when the time comes.
- Tutorials: One hour per week. Times will be posted up on myelearning and you will be required to sign up for sessions there.
- Projects
- In-class discussions

RESOURCES:

- **Recommended texts:**
  - Generally of similar level as course material:
  - Generally of lower level than course material:
  - Generally of greater difficulty than course material:

- **Other recommended readings:**

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3 The special recommendation for this text is because of the appendix chapter that deals with the writing up of an econometrics project – I suggest that all students read this section so that they can prepare a proper project.
4 Dataset for this book available online [http://www.eviews.com/download/data/infodoti.html](http://www.eviews.com/download/data/infodoti.html)

- **Myelearning site**: This site will be used to post the course outline, lecture notes and announcements for the class. Please check the news feed regularly since new announcements will appear here. You will be required to use this site to sign up for tutorial sessions. Also use this site to fill out your course evaluation questionnaires.

**READINGS:**

- Topic 1: Chapters 1 -4 of the Required Text.
- Topic 2: Chapter 5 of the Required Text.
- Topic 3: Chapter 6 of the Required Text.
- Topic 4: Chapters 7 & 8 of the Required Text.
- Any other readings pointed out during the semester.

**COURSE CALENDAR:**

<table>
<thead>
<tr>
<th>WEEK</th>
<th>ACTIVITY</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to the course, Meaning and purpose of econometrics</td>
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<tr>
<td>2</td>
<td>Topic 1 Part 1: Gauss Markov Theorem</td>
</tr>
<tr>
<td>3</td>
<td>Topic 1 Part 2: Statistical Inference, Multicollinearity, Specification Errors</td>
</tr>
<tr>
<td>4</td>
<td>Topic 1 Part 3: Generalized Least Squares; First Meeting with Project Groups</td>
</tr>
<tr>
<td>5</td>
<td>Topic 2 Part 1: Almon’s PDL, Koyck</td>
</tr>
<tr>
<td>6</td>
<td>Topic 2 Part 2: Adaptive Expectations, Stock adjustment Models</td>
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<tr>
<td>7</td>
<td>Topic 2 Part 3: Error Correction Models; Second Meeting with Project Groups</td>
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<tr>
<td>8</td>
<td>Topic 3 Part 1: Consistency of OLS and IV estimators</td>
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<td>9</td>
<td>Topic 3 Part 2: Measurement errors</td>
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<tr>
<td>10</td>
<td>Topic 4 Part 1: Rank and order conditions</td>
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<tr>
<td>11</td>
<td>Topic 4 Part 2: ILS, 2SLS; Final Meeting with Project Groups</td>
</tr>
<tr>
<td>12</td>
<td>Topic 4 Part 3: Forecasting and Policy Analysis</td>
</tr>
<tr>
<td>13</td>
<td>Review Session</td>
</tr>
</tbody>
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**ADDITIONAL INFORMATION:**

- **University Policy concerning attendance**: In general students must maintain a 75% attendance at lectures AND tutorials. The regulation is as follows: Examination Regulations for First Degrees, Associate Degrees, Diplomas and Certificates including GPA Regulations; General Examination Regulation:
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.

- **University Policy concerning cheating:**
  
  Cheating
  
  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 howsoever 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.

  103. (i) If any candidate is suspected of cheating, or attempting to cheat, the circumstances shall be reported in writing to the Campus Registrar. The Campus Registrar shall refer the matter to the Chairman of the Campus Committee on Examinations. If the Chairman so decides, the Committee shall invite the candidate for an interview and shall conduct an investigation. If the candidate is found guilty of cheating or attempting to cheat, the Committee shall disqualify the candidate from the examination in the course concerned, and may also disqualify him/her from all examinations taken in that examination session; and may also disqualify him/her from all further examinations of the University, for any period of time, and may impose a fine not exceeding Bds$300.00 or J$5000.00 or TT$900.00 or US$150.00 (according to campus). If the candidate fails to attend and does not offer a satisfactory excuse prior to the hearing, the Committee may hear the case in the candidate's absence.

- **Grading policy:** You will be graded fairly on the work that YOU have done. For the group projects each member will be required to fill out a questionnaire stating the proposed contribution they perceive each member has given to the final project. This, as well as any issues brought up in meetings with me, will be taken into account in giving each student a final grade for the project. This means that even if your group as a whole obtained 22/25 marks, you may only get 11 marks if your contribution level was very low and group members can PROVE this.

  For the final examination, any cheating will be dealt with according to the University Policy (see previous point). Again, you will be graded on what YOU have done in the course. If you are on the borderlines of the Grading system then I will take into account your class and tutorial contribution (not attendance since attendance is mandatory) and decide if you should be graded one mark up.
- **Department of Economics Events:** You are strongly suggested to attend these as a student of the Department of Economics:
  - The Post-National Budget Forum 2010 which will be held on Thursday the 16\textsuperscript{th} September 2010 following the presentation of the National Budget for the period 2010/2011. Please come and take part in the discussions. I would like to say that I consider this almost mandatory to attend if you are a third year economics student.
  - The Conference on the Economy 2010 (COTE2010) which will be held from October 7\textsuperscript{th} to 9\textsuperscript{th} 2010. Please see Departmental flyers for more information on this. I will also put up a notice on myelearning.

**HOW TO STUDY FOR THIS COURSE:**

- You **must** attend lectures and tutorials.
- You **must** attempt tutorial questions and seek out some of the additional course material to come up with answers to these questions. Do not solely rely on the recommended text.
- You **must** practice answering past paper questions in the required time.
- You should review the lesson covered at the end of every lecture so that the lesson remains fresh in your mind throughout the semester. If you do this, you will not have to ‘cram’ at the end of the semester.

**GRADING SYSTEM:**

- The University now uses the GPA method which allows the students GPA scores as follows:

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<thead>
<tr>
<th>GRADE</th>
<th>MARK</th>
<th>GPA</th>
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<tbody>
<tr>
<td>A+</td>
<td>86 and over</td>
<td>4.3</td>
</tr>
<tr>
<td>A</td>
<td>70-85</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>67-69</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>63-66</td>
<td>3.3</td>
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<tr>
<td>B</td>
<td>60-62</td>
<td>3.0</td>
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<tr>
<td>B-</td>
<td>57-59</td>
<td>2.7</td>
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<tr>
<td>C+</td>
<td>53-56</td>
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<tr>
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<td>50-52</td>
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<tr>
<td>C-</td>
<td>47-49</td>
<td>1.7</td>
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<tr>
<td>D+</td>
<td>43-46</td>
<td>1.3</td>
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<tr>
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