

variables.

IPSC6 employ mathematical techniques to assess the quality of data and find the suitable specification for different types of datasets.

- Engage in lifelong learning, reflective thinking and self-assessment.
- Communicate effectively in verbal, written and group contexts to a professional standard.

TEACHING STRATEGIES

The teaching strategies that will be used and their rationale. Give some suggested approaches to learning in the course.

(An example of the approaches to learning are)

Private Study	<ul style="list-style-type: none"> ◁ Review lecture material and textbook ◁ Do set problems and assignments ◁ Join Moodle discussions of problems ◁ Reflect on class problems and assignments ◁ Download materials from Moodle ◁ Keep up with notices and find out marks via Moodle
Lectures	<ul style="list-style-type: none"> ◁ Find out what you must learn ◁ See methods that are not in the textbook ◁ Follow worked examples ◁ Hear announcements on course changes
Workshops	<ul style="list-style-type: none"> ◁ Be guided by Demonstrators ◁ Practice solving set problems ◁ Ask questions
Assessments	<ul style="list-style-type: none"> ◁ Demonstrate your knowledge and skills ◁ Demonstrate higher understanding and problem solving
Laboratory Work	<ul style="list-style-type: none"> ◁ Hands-on work, to set studies in context

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COURSE PROGRAM

A table of lectures and workshops or practical class topics for each week, indicating the name of lecturer involved (where multiple lecturers teaching in course), online activities, such as discussion forums, and relevant readings from textbook and other reference material identified for the course.

Term 2 2020

Date	Topic	Lecture Content	Demonstration Content
04/06/2020 (Week 1)	Introduction to transport modelling Statistical inference	Basics of econometrics Review of statistics and probabilities Statistical hypothesis testing	Introduction to R
11/06/2020 (Week 2)	Statistical inference Regression analysis	Two-variable regression assumptions Dummy variables	Running regression in R
18/06/2020 (Week 3)	Regression analysis	Multiple regression analysis Multicollinearity Count data	Running multiple regression in R
25/06/2020 (Week 4)	Regression model troubleshooting	Heteroscedasticity Autocorrelation	Heteroscedasticity and autocorrelation
02/07/2020 (Week 5)	Regression Model Time Series	Time series formulations and Count Data	Running time series in R
09/07/2020 (Week 6)		<i>Flexibility week for all courses (non-teaching)</i>	
16/07/2020 (Week 7)	Discrete choice	Basic definitions Choice set Logit models	Running logit with biogeme
23/07/2020 (Week 8)	Discrete choice	Nested logit	Running nested logit with biogeme
30/07/2020 (Week 9)	Discrete choice	Ordered logit	Running survival analysis in biogeme

Assignment 1 and quiz 1 – Linear regression

Assignment 2 and quiz 2 – Count and time series regression

Assignment 3 and quiz 3 – Discrete choice models

Format of the assignments:

- < Have a cover letter.
- < Each question starts from the top of the page
- < Reference your work appropriately, if not, you may be penalized for plagiarism.

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ASSESSMENT OVERVIEW

Item	Available date	Weighting	Learning outcomes assessed	Assessment Criteria (<i>this needs to explicitly describe what students are expected to demonstrate in the task</i>)	Due date	Deadline for absolute fail	Marks returned
1.Quizzes							
Quiz 1	18/06/2020 10:00	3	Comprehensive understanding of basic statistics and probabilities	Students will be assessed based on the accuracy and validity of their submitted solutions to the questions.	18/06/2020 10:15	18/06/2020 10:15	18/06/2020 10:15
Quiz 2	25/06/2020 10:00	3	Understanding about the basic assumptions behind linear regression models.	Students will be assessed based on the accuracy and validity of their submitted solutions to the questions.	25/06/2020 10:15	25/06/2020 10:15	25/06/2020 10:15
Quiz 3	02/07/2020 10:00	3	Potential troubles resulting from violating the assumptions and common remedies for them.	Students will be assessed based on the accuracy and validity of their submitted solutions to the questions.	02/07/2020 10:15	02/07/2020 10:15	02/07/2020 10:15
Quiz 4	16/07/2020 10:00	3	Time series regression and count data	Students will be assessed based on the accuracy and validity of their submitted solutions to the questions.	16/07/2020 10:15	16/07/2020 10:15	16/07/2020 10:15
Quiz 5	06/08/2020 10:00	3	Discrete choice modelling	Students will be assessed based on the accuracy and validity of their submitted solutions to the questions.	06/08/2020 10:15	06/08/2020 10:15	06/08/2020 10:15

2. Assessments

Assignment 1 11/06/2020 15

RELEVANT RESOURCES

Material essential for this course is provided in lecture notes available through Moodle.

Suggested references are listed below:

- < Gujarati, D.N. (2004) Basic Econometrics, 4th Edition, McGraw Hill
- < Casella, G., and R.L. Berger (2001) Statistical Inference, 2nd Edition, Duxbury Press
- < Train, K. (2009) Discrete Choice Methods with Simulation, 2nd Edition, Cambridge University Press
- <

