

Syllabus
BT2101: Econometrics Modeling for Business Analytics
National University of Singapore, School of Computing
2026/2027 Semester 1

Assistant Professor Freddy Lim
Assistant Professor Vikas Deep

Classes: Tuesdays, 2pm – 4pm, LT38 (Icube building)

Final exam: 28 Nov 2026, 9am – 11am

Course co-instructor: Freddy Lim

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Office hours: Tuesdays, 1pm – 2pm, LT38, and by email appointment.

Course co-instructor: Vikas Deep

Office: COM2-04-39

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Office hours: Tuesdays, 1pm – 2pm, LT38, and by email appointment.

Tutorials and instructors/TAs: AS6-02-14 (Groups 1, 2, 3); COM1-02-06 (Groups 4, 5)

Tutorial Group 1, Tuesdays, 9am – 10am, Liu Yan, yan.liu@nus.edu.sg

Tutorial Group 2, Tuesdays, 10am – 11am, Liu Yan

Tutorial Group 3, Tuesdays, 11am – 12pm, Li Baishi, baishi.l@nus.edu.sg

Tutorial Group 4, Tuesdays, 12pm – 1pm, Freddy Lim / Vikas Deep

Tutorial Group 5, Tuesdays, 1pm – 2pm, Li Baishi

Assignment grading TA: Li Shidan, e1638621@u.nus.edu

Prerequisites:

BT1101 and MA1521, or equivalent.

A foundation course in probability and statistics at the pre-university level is also assumed.

Course materials:

1. Main text: Jeffrey Wooldridge, Introductory Econometrics: A Modern Approach, 7th edition.
2. Supplementary text: James Stock and Mark Watson, Introduction to Econometrics, 4th edition.

Course description:

This course covers the foundations of econometrics, and how it can be applied to the analysis of real-world problems. We will focus on how we can infer causal effects in the analysis of cross-sectional and panel data. This course builds on the fundamentals of linear regression that is introduced in BT1101 by undertaking an in-depth and rigorous study of the mechanics and properties of linear regression.

A foundation university level course in calculus is assumed. A foundation probability and statistics course, at least at the pre-university level, is also assumed. Many students may be concurrently taking their first university level probability and statistics course during the semester. Therefore, key mathematical concepts will be introduced or recapped as necessary.

Overall, we will aim for a good balance of econometric intuition, mathematical rigor, and discussion of real-world applications.

Course grading:

1. Participation (5%)

You will get participation scores if you complete short course surveys that are sent out during the semester. These surveys will help us to improve the course.

2. Assignments (30%)

There will be 10 individual assignments in this course. Each assignment corresponds to a class topic, and is due the following week. **Late submissions are not accepted and will receive zero grades.** The assignments are meant to incentivize and encourage consistent work, so that you do not fall behind on the content. As such, grading will be mainly based on effort.

We will drop your 2 lowest assignment scores, i.e., only your best 8 out of 10 assignments count. This will account for any unforeseen circumstances that may result in you missing work for a couple of weeks.

3. Empirical reports (25%)

There are 2 individual empirical reports in this course. Each one accounts for 12.5% of the overall course grade. These empirical reports will be graded for accuracy. In these reports, you will aggregate the knowledge that is learned across multiple classes and apply them to the analysis of empirical datasets. More detailed instructions and grading rubrics will be released with the assignment documents.

4. Final exam (40%)

The final exam is an **open-book**, written paper exam. Only calculators are allowed; all other electronic computing devices are prohibited.

Honor code:

All university level codes of conduct apply. Most of it is just common sense – do not cheat or plagiarize. Any academic misconduct will be escalated to university administration and will be dealt with harshly.

Course roadmap:

Week	1	2	3	4	5	6	Reading	7	8	9	10	11	12	13	Reading	Exams
Dates	10 Aug - 14 Aug	17 Aug - 21 Aug	24 Aug - 28 Aug	31 Aug - 4 Sep	7 Sep - 11 Sep	14 Sep - 18 Sep	19 Sep - 27 Sep	28 Sep - 2 Oct	5 Oct - 9 Oct	12 Oct - 16 Oct	19 Oct - 23 Oct	26 Oct - 30 Oct	2 Nov - 6 Nov	9 Nov - 13 Nov	14 Nov - 20 Nov	21 Nov - 5 Dec
Classes W1 - W6: Freddy Lim W7 - W12: Vikas Deep W13: Both	Intro	Math prelims, OLS estimators	Unbiasedness and causality	Variance, multiple regression	Omitted variable bias	Regressor selection		Inference	Hetero-skedasticity	Pooled and Panel Data	Panel data: Fixed effect estimator	Panel data: Random effect estimator	Instrumental variables 	Course recap		
Tutorials W3 - W7: Freddy Lim & TAs W8 - W13: Vikas Deep & TAs			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		
Assignments (30%) (Drop 2 lowest scores; Due following week.)		W2	W3	W4	W5	W6		W7	W8	W9	W10	W11				
			W2 due	W3 due	W4 due	W5 due	W6 due		W7 due	W8 due	W9 due	W10 due	W11 due			
Empirical reports (25%)						Empirical report 1 (Released after W6 class. Due at end of day 4 Oct.)						Empirical report 2 (Released after W11 class. Due at end of day 15 Nov.)				
Final exam (40%)																Final exam
Participation (5%)	Short course surveys will be sent out over the semester. Submit these to get participation grades.															
 W12: No face to face lecture, only recording.																