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科目授業名 Course Title	Econometrics (SPRING)		
授業コード Class Code	B3E1440101		
担当者 Instructor	CHEN Jauer		
開講期 Semester / Year	2022年度 春学期	キャンパス Campus	第1キャンパス
曜日時限 Timetable	月曜4限 木曜4限	単位数 Credits	4.0
履修セメスター Enrollment Semester		科目ナンバリング Course Level	M-ECN340
設置学科・研究科 Department / School	入力の必要はありません。教務課で対応します。 You do not need to fill in. This section will be filled in by EAAO.		
授業内容 Course Description	The course is divided into four parts. The first part starts with data collection and data quality, followed by organizing and cleaning data, exploratory data analysis, and data visualization, generalizing from the data, and hypothesis t esting. The second part gives a thorough introduction to regression analysis, including probability models and time-series regressions. The third part cover s predictive analytics and introduces cross-validation, LASSO, tree-based ma chine learning methods such as random forest, probability prediction, classifi cation, and forecasting from time-series data. The fourth part covers causal analysis, starting with the potential outcomes framework and causal maps, t hen discussing experiments, difference-in-differences analysis, various panel data methods, and the event study approach.		
到達目標(授業の狙い) Objectives	The course equips students with the most important tools, methods, and skill s they need through the entire process of data analysis to answer data-focus ed, real-life questions.		
関連科目や履修上望むこと Recommended Courses	Statistics 1 is recommended to take before registering for this course.		
学位授与と当科目との関連 Relevance to D.P.	入力の必要はありません。教務課で対応します。 You do not need to fill in. This section will be filled in by EAAO.		
単位制における学修時間 Coursework Time	入力の必要はありません。教務課で対応します。 You do not need to fill in. This section will be filled in by EAAO.		

教科書			
Textbooks			
使用の有無 Required textbooks	Yes	詳細 Additional Details	
題名 Title	Data Analysis for Business, Economics, and Policy		
著者 Author	Gábor Békés and Gábor Kézdi		
出版社 Publisher	Cambridge University Press		
発行年 Year published	6 May 2021		
ISBN	978-1108716208		
金額 Price	USD$ 55.24		
参考文献 Reference Books	Textbook website: https://gabors-data-analysis.com		

授業方法					
Method of Inst					
グループワーク Group Work	O	プレゼンテーション Presentation	O	ﾃﾞｨｽｶｯｼｮﾝ、ﾃﾞｨﾍﾞｰﾄ Discussion, Debate	O
PBL(課題解決型学習) Project Based Learning	O	反転授業 Flip Teaching	O	実習、フィールドワーク Practice, Field Work	X
その他、詳細 Additional Details	Classes will be held in lecture style. Effective use of slides, providing visuals s uch as images and graphs may facilitate understanding. The class will also b e centered on students' solutions to assigned hands-on problem sets in the s tyle of presentations. Students will present on given hands-on assignments a nd each student will be asked to give a presentation at least three times thro ughout the semester.				
Moodle活用					

Utilization of Moodle					
小テスト Quiz	X	課題 Assignment	O	フォーラム Forum	X
フィードバック Feedback	O	調査 Survey	X	投票 Choice	X
その他、詳細 Additional Details	Class materials will be uploaded to Moodle.				

授業計画		準備学修（事前・事後）
Course Outline		Outside Class Study (Preparation/Review)
第1回	Origins of Data	【Preparation】 Read Topic 1 on Moodle to form thoughts.
第2回	Preparing Data for Analysis	【Preparation】 Read Topic 2 on Moodle to form thoughts.
第3回	Exploratory Data Analysis	【Preparation】 Read Topic 3 on Moodle to form thoughts.
第4回	Comparison and Correlation	【Preparation】 Read Topic 4 on Moodle to form thoughts.
第5回	Generalizing from Data	【Preparation】 Read Topic 5 on Moodle to form thoughts.
第6回	Testing Hypotheses	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第7回	Simple Regression	【Preparation】 Read Topics 7 and 8 on Moodle to form thoughts.
第8回	Complicated Patterns and Messy Data	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第9回	Generalizing Results of a Regression	【Preparation】 Read Topics 9 and 10 on Moodle to form thoughts.
第10回	Multiple Linear Regression	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第11回	Modeling Probabilities	【Preparation】 Read Topics 11 and 12 on Moodle to form thoughts.
第12回	Regression with Time Series Data	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第13回	A Framework for Prediction	【Preparation】 Read Topics 13 and 14 on Moodle to form thoughts.
第14回	Model Building for Prediction	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第15回	Regression Trees	【Preparation】 Read Topics 15 and 16 on Moodle to form thoughts.
第16回	Random Forest and Boosting	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第17回	Probability Prediction and Classification	【Preparation】 Read Topics 17 and 18 on Moodle to form thoughts.
第18回	Forecasting from Time Series Data	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第19回	A Framework for Causal Analysis	【Preparation】 Read Topics 19 and 20 on Moodle to form thoughts.
第20回	Designing and Analyzing Experiments	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第21回	Regression and Matching with Observational Data	【Preparation】 Read Topics 21 and 22 on

		Moodle to form thoughts.
第22回	Difference-in-Differences	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第23回	Methods for Panel Data	【Preparation】 Read Topics 23 and 24 on Moodle to form thoughts.
第24回	Appropriate Control Groups for Panel Data	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第25回	Instrumental Variables – Selection on Unobservables	【Preparation】 Read Topics 25 and 26 on Moodle to form thoughts.
第26回	Instrumental Variables – Heterogeneous Effects	【Preparation】 Prepare student presentation of the assigned hands-on problem set.
第27回	Instrumental Variables – Local Average Treatment Effect	【Preparation】 Read Topic 27 on Moodle to form thoughts.

成績評価基準

Evaluation Components

平常点% Class Evaluation	20	平常点詳細 Details	Participation in the discussion, effort in undertaking tasks.
試験% Examination	30	試験詳細 Details	A final examination will be held.
レポート% Report	0	レポート詳細 Details	
その他% Others	50	その他詳細 Details	Evaluation will be based on student presentations (at least three times) of the assigned hands-on problem sets.

試験・課題等ﾌｨｰﾄﾞﾊﾞｯｸ方法 Assignment Feedback	Feedback will be provided during class.
授業に関する質問への対応 Professor Contact Hours	- Please ask questions during class. - I will answer questions via email as well. My email address will be announced in class.
特記事項 Remarks	Other important notes will be explained in the first and second classes.