

科目コード／科目名 (Course Code / Course Title)	Introduction to Multivariate Analysis		
テーマ／サブタイトル等 (Theme / Subtitle)	多変量解析入門		
担当者名 (Instructor)	門田 実(KADOTA MINORU)		
学期 (Semester)	秋学期他(Fall Others)	単位 (Credit)	2単位(2 Credits)
科目ナンバリング (Course Number)	CMP2231	言語 (Language)	英語 (English)
備考 (Notes)	<ul style="list-style-type: none"> ・オンデマンド授業 ・TOEIC®550 点相当以上の英語力を有していることを前提に授業を実施する 		

授業の目標 (Course Objectives)

We will learn the basic ideas, representative methods, and usage methods in society.

授業の内容 (Course Contents)

We will learn the basic concepts and representative methods of multivariate analysis. In particular, we will describe (1) methods for prediction and factor search, and (2) methods for organizing and classifying complex information. Furthermore, through analysis exercises using the statistical analysis language R, students will understand the usage cases and roles of these methods.

授業計画 (Course Schedule)

1. What is multivariate analysis?
2. Review of descriptive statistics and inferential statistics
3. Correlation coefficient and partial correlation coefficient
4. Multiple regression analysis (1): From simple regression analysis to multiple regression analysis
5. Multiple regression analysis (2): Concept of multiple regression analysis
6. Multiple regression analysis (3): Dummy variables and cautions for regression analysis
7. Binomial logistic regression analysis
8. Two-way analysis of variance
9. Analysis of the triple cross tabulation table
10. Factor analysis (1): Concept of factor analysis
11. Factor Analysis (2): Factor Rotation and Cautions on Use
12. Principal component analysis
13. Cluster analysis
14. Structural equation modeling

授業時間外(予習・復習等)の学習 (Study Required Outside of Class)

Please read the materials and related books and check for any unclear points. Please review the procedures for calculating the statistics you have learned, and solidify your understanding of their properties. The contents of the video are just an introduction to the vast ocean of multivariate analysis, and there is a wealth of statistical theory and application examples that are not fully explained. Do not be satisfied with the video, but organize your own questions and arguments about the content to deepen your understanding. The approximate learning time is 240 minutes per class, including watching the videos.

成績評価方法・基準 (Evaluation)

In class problem(100%)

テキスト (Textbooks)

The content presented online corresponds to the text

参考文献 (Readings)

その他 (HP 等) (Others(e.g.HP))

This course corresponds to subject E, "Methods of Multivariate Analysis," which is designated as a subject for social researchers by the Japan Association for Social Research. Due to the nature of this subject, knowledge of basic statistics, which is the content of subject C, D, is assumed. Students who are not sure of their knowledge should review the course by themselves. Students are required to log in to Blackboard in advance and check the specific instructions for the class. If you have any questions about the class content, please use the schooling sessions held twice during the semester.

