Course Code: SB1117

Year	2021
Course	Mathematics B
Course	Mathematics B
Day/Period	Spring Semester Thu 1
Credit(s)	2
Instructor	SHINYA OKABE MASAKI HANAMURA TAKUMI YOKOTA
Semester	Spring Semester
Course code/number	SMA-MAT802E
Language Used in Course	English

Affiliation	Faculty of Science
Course Title (Japanese)	数学概説B
Course Title (English)	Mathematics B
Purpose /Abstract (Japanese)	代数，幾何，解析からテーマを選び，それぞれの専門家が英語で解説することにより，数学とその英語による表現方法を学ぶ.
Purpose /Abstract (English)	In this course we study several topics in advanced or basics of mathematics in Algebra, Geometry, and Analysis. Students are expected to gain a perspective of modern mathematics and how it is useful to understand mathematical phenomenon.
Goal (Japanese)	この講義ではいくつかのすすんだあるいは基本的な数学を学ぶ。受講生は展望と数学の有用性を理解できるだろう。
Goal (English)	In this course, we study several topics in advanced or basics of mathematics. Students are expected to gain a perspective of modern mathematics and how it is useful to understand the mathematical phenomenon.
Contents and progress schedule of the class (Japanese)	ALGEBRA 1. The notion of groups; examples 2. Representations of finite groups 3. Basic properties of representations I 4. Basic properties of representations II 5. Some examples GEOMETRY 1. Toplogy of Euclidian spaces 2. Metric spaces and Topological spaces 3. Hausdroff properties and Compactness 4. Huasdroff measure and Hausdroff distance 5. Gromov theory ANALYSIS 1. Mathematical models of single species population dynamics I 2. Mathematical models of single species population dynamics II 3. Mathematical models of multiple species population dynamics I 4. Mathematical models of multiple species population dynamics II 5. Introduction to hybrid mathematical models
Contents and progress schedule of the class (English)	Part1 1. The notion of groups; examples 2. Representations of finite groups 3. Basic properties of representations I 4. Basic properties of representations II 5. Some examples Part2 1. Toplogy of Euclidian spaces 2. Metric spaces and Topological spaces 3. Hausdroff properties and Compactness 4. Huasdroff measure and Hausdroff distance

	5. Gromov theory Part3 1. Mathematical models of single species population dynamics I 2. Mathematical models of single species population dynamics II 3. Mathematical models of multiple species population dynamics I 4. Mathematical models of multiple species population dynamics II 5. Introduction to hybrid mathematical models
Grading(Japanese)	Report and attendance
Grading (English)	Report and attendance
Books required /referenced (Japanese)	No textbook assigned and we will give suitable references at each lecture
Books required /referenced (English)	No textbook assigned and we will give suitable references at each lecture
Preparation and review (Japanese)	Review the lecture notes and study relevant textbooks
Preparation and review (English)	Review the lecture notes and study relevant textbooks
Practical business	
Remarks (Japanese)	
Remarks (English)	
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