Special Mathematics Lecture (Groups and their representations)
＊Optional subject

Undergraduate / Graduate	Undergraduate	**Registration Code**	0063621
Course Category	Basic Courses in Natural Sciences	**Credits**	2.0
Term (Semester) / Day / Period	Fall Semester / Wed / 6 (18:15～19:45)		
Instructor	RICHARD Serge		
Contact e-mail of the Instructor	richard.serge.charles.c3@f.mail.nagoya-u.ac.jp		

●Goals of the Course
Group theory plays an important role in many fields, as for example in quantum mechanics or in particle physics. During this one semester course, we shall introduce the main concepts of groups, their representations, and present some classical groups. Lie groups and Lie algebras will also be discussed.

●Objectives of the Course
Get enough knowledge about groups for perceiving their importance in several theories and for recognizing them in numerous applications.

●Course Contents or Plan
This course should cover the following topics: 1) Groups, 2) Linear representations, 3) Lie groups, 4) Semi-simple theory.

●Course Prerequisites and Related Courses
Basic knowledge on calculus and linear algebra, as provided in Calculus I & II and in Linear algebra I & II. Motivated 1st year students can also attend without these prerequisites but after a discussion with the instructor.

●Course Evaluation Method and Criteria
The final grade will be based on the active participation during the lectures and on some written reports. Students will be encouraged to work on applications related to their major during the semester. Students need to notify the course withdrawal to the instructor when they have no intention of finishing the course during the semester.

●Study Load (Self-directed Learning Outside Course Hours)
Students are expected to read their notes, and to be familiar with the content of the previous lectures before each new lecture.

●How to Respond to Questions
By email.

●Notice for students
It is expected that the students will show a certain maturity in studying independently and in choosing some exercises and problems to solve. Study sessions will be organized on a weekly basis.

This course in an optional subject which does not count towards the number of credits required for graduation in any program at Nagoya University.

Textbook	Free textbooks will be provided during the lectures.
Reference Book	Free reference books will be provided during the lectures.
Reference website	http://www.math.nagoya-u.ac.jp/~richard/SMLfall2022.html