Course Category	TBA	Credits	2
Subject Code	TBA	Taking Year	1st Grade, 2nd Grade
Course Title (Japanese)	代数学	Course Period	1st Semester
Course Title	Advanced Algebra	Day of the week / Hour	Tuesday / The second period
Registration Code	TBA	Compulsory / Elective	Elective
Instructor(s)	Akira Ueda	Course Qualification	Students of Postgraduate Mathematics Course

Course Style	Lecture
Course Aim	This class has aimed to understand the advanced theory on groups, rings and fields.
Goals and Objectives (Level of Achievement)	1. Understand the structures of groups, the action of a group on a set and the Sylow theorems, etc.. 2. Understand the structures of rings, the theory of semi-simple Artinian rings and rings of quotients, etc.. 3. Understand the Galois theory and the structure of finite fields, etc..
Course Plan	The following is a schedule. 1. The action of a group on a set 2. The Sylow theorem 3. Application of the Sylow theorem 4. Nilpotent groups 5. Solvable groups 6. Semi-simple Artinian rings 7. Wedderburn Structure theorem 8. Rings of quotients 9. Localizations 10. Prime ideals of quotient rings 11. Extensions of fields 12. Separable extensions and normal extensions 13. Finite fields 14. Galois theory 15. Application of Galois theory 16. Evaluation
Teaching Methods	Resume is handed out. Student will work problems after each lecture.
Key Words	Groups, rings, Fields, Sylow theorem, Semi-simple Artinian rings, Galois theory
Texts	None
Reference Books	To be introduced in the class
Other Teaching Materials	To be given in the class when necessary
Performance Evaluation	Homework 20%; Evaluation 80%
Notes on the Course	Please note that students are expected to do homework every week and come to class prepared.
Office Hour	Building No.3, Room 533, Interdisciplinary Faculty of Science and Engineering, Wednesday 16:15 - 17:50
Other Notes	None