Course Category	TBA	Credits	2
Subject Code	TBA	Taking Year	1st Grade, 2nd Grade
Course Title (Japanese)	数理生物学	Course Period	2nd Semester
Course Title	Mathematical Biology	Day of the week / Hour	Thursday / The fourth period
Registration Code	TBA	Compulsory / Elective	Elective
Instructor(s)	Yasuhisa Saito Yukihiko Nakata Mayuko Iwamoto	Course Qualification	Students of Postgraduate Mathematics Course

Course Style	Lecture
Course Aim	Selectively covers mathematical models in the form of systems of ordinary or partial differential equations.
Goals and Objectives (Level of Achievement)	Understanding mathematical analysis of models as well as model formulation and numerical simulations.
Course Plan	1. Lotka-Volterra predator-prey dynamics 1 2. Lotka-Volterra predator-prey dynamics 2 3. Rosenzweig-MacArthor predator-prey dynamics 1 4. Rosenzweig-MacArthor predator-prey dynamics 2 5. Chemostat differential equations 6. Mathematical modeling for infectious diseases 7. R0 8. Final size relation 9. Structured population dynamics 1 10. Structured population dynamics 2 11. Pattern formation with Turing model 12. Excitability of FizHugh-Nagumo equation 13. Spiral formation on excitable media 14. Animal locomotion 15. Proportion regulation in social animals
Teaching Methods	Problems for reports will be given in the class.
Key Words	Population dynamics, Nonlinear interactions
Texts	Nothing special
Reference Books	Referred appropriately as required
Other Teaching Materials	Referred additionally as required
Performance Evaluation	Estimated by term papers
Notes on the Course	None
Office Hour	To be announced
Other Notes	None