

Course	Practical numerical solutions
Course No.	02RB240
Credits	1.0Credits
Grade	1, 2Year
Timetable	SprAB Wed6
Instructor	Mai Otsuki
Course Overview	Learn the basics of differentiation, integration, linear algebra, and numerical analysis. The course also includes elementary C programming exercises in numerical analysis.
Remarks	Those who do not belong to the PhD program in Empowerment Informatics need the permission of the instructor to register.
Course Type	lectures
Course Remarks	Lecture is offered in English/Japanese with English/Japanese handouts. A minimum of one students are required. For programming exercise, we recommend you to bring your laptop. If it is not possible, we can also lend you a shared laptop upon request.
Relationship to EMP Educational Objectives	Interdisciplinary ability:Broad specialist knowledge and experience
Course Objectives	Understand the basics of differentiation, integration, linear algebra, and numerical analysis. In addition, acquire elementary skill in C programming through the exercise in numerical analysis.
Course Schedule	Topics: - Differential and integral calculus - Differential equations - Euler method - Vector and matrix - Error in numerical calculation - C language programming
Graduating Methods and Criteria	Final test (70%), and homework assignments (30%). A homework assignment submitted after the deadline will receive 40% penalty.
Homework	
Textbook	Class materials will be provided.
References	MIT Open Courseware (https://ocw.mit.edu/index.htm)
Office Hour	Please make an appointment by email.
Messages for Students	Experience the difficulty and enjoyment of simulation by programming by yourself. For programming exercises, you may need to spend some time after the class. We also expect the students to not only make programs but also understand the principles by reviewing the lecture content.
Teaching Fellow / Teaching Assistant	
Keywords	