

Methods for analysis of mathematical phenomena

2 units (selection)

Hitoshi Imai · PROFESSOR / PLANNING AND DESIGN SYSTEMS ENGINEERING FOR INFRASTRUCTURES, CIVIL AND ENVIRONMENTAL ENGINEERING, INTELLIGENT STRUCTURES AND MECHANICS SYSTEMS ENGINEERING

Target To learn the to analyze the mathematical phenomena.

⇒ Imai(A220, +81-88-656-7541, The inquiry by means of the cellular phone or E-mail is not acceptable) (Office Hour: Office hours: Thursday 14:00-15:00)

Outline Methods used in analysis of mathematical phenomena are introduced.

Especially, those in numerical analysis are focused on.

Style Lecture

Keyword *mathematics, numerical analysis*

Fundamental Lecture “Numerical Analysis”(1.0)

Relational Lecture “Advanced Computational Science”(0.5)

Requirement Only the premise that have studied basic mathematics.

Notice 授業を受ける際には、2時間の授業時間毎に2時間の予習と2時間の復習をしたうえで授業を受けることが、授業の理解と単位取得のために必要である。

Goal Being able to understand a numerical scheme to one-dimensional boundary value problems for the Poisson equation

Schedule

1. Introduction to computer
2. Common sense in numerical computation
3. High-speed computation (Parallel computing)
4. Finite difference method I
5. Finite difference method II
6. Finite difference method III
7. Finite difference method IV
8. Finite element method I
9. Finite element method II
10. Finite element method III
11. Finite element method IV
12. Boundary element method I
13. Boundary element method II
14. Boundary element method III
15. Iterative method

Evaluation Criteria Evaluation by the report.

Contents <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216716>

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