Methods for analysis of mathematical phenomena

2 units (selection)

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Target〉 To learn the to analyze the mathematical phenomena.

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=216712

Contact〉

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