Topics of Analysis for Mathematical Science

2 units (selection)

Atsuhito Kohda · Associate Professor / Planning and Design Systems Engineering for Infrastructures, Civil and Environmental Engineering, Intelligent Structures and Mechanics Systems Engineering

Target〉 Mathematical theory and technique for analysis of engineering phenomena

Outline〉 Mathematical theory to analyze problems in engineering and its application, mainly theory and technique of differential equations

Style〉 Lecture

Relational Lecture〉 "**Advanced applied analysis**"(0.2), "**Differential Equations**" (0.2)

Requirement〉 If you like undergraduate-level mathematics, it will be sufficient.

Goal〉 To be familiar with mathematical theory, that helps engineering study.

Schedule〉

1. Theory of sets and maps
2. Cardinal numbers and bijection
3. Equivalence relations and cryptography
4. Linear space and tensor
5. Vector analysis and differential form
6. Cauchy's theorem and vector analysis
7. Differential form and Cauchy's theorem
8. Projective plane
9. Quadratic curves and projective plane
10. All quadratic curves are circles?
11. The index of vector fields
12. Applications of the index:fundamental theorem of algebra
13. Vector fields on the unit sphere
14. Why there is the north pole on the earth
15. Mathematics and computers
16. Summary

Webpage〉 http://math1.pm.tokushima-u.ac.jp/lecture/

Contents〉 http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216709

Contact〉

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