

## Quantum mechanics and advanced lecture in quantum physics

2 units (selection)

Yoshitaka Michihiro · ASSOCIATE PROFESSOR / PRODUCTION SYSTEMS ENGINEERING, MECHANICAL ENGINEERING, INTELLIGENT STRUCTURES AND MECHANICS SYSTEMS ENGINEERING

**Target**› This class introduces the quantum mechanics.

**Outline**› Basics of quantum mechanics are introduced.

**Style**› Lecture

**Keyword**› *quantum mechanics*

**Goal**› To understand the outline of quantum mechanics.

**Schedule**›

1. Introduction
2. Variational method
3. Lagrangian
4. Hamiltonian
5. Poisson's bracket expression
6. Quantization
7. Operator
8. Wavefunction
9. Expectation value
10. Schrödinger equation
11. Example (1) the square well potential
12. Example (2) the linear harmonic oscillator
13. Angular momentum
14. Example (3) hydrogen atom
15. Heisenberg equation
16. Field quantization

**Evaluation Criteria**› Assignments count 100%.

**Textbook**› To be introduced in the class.

**Reference**› To be introduced in the class.

**Contents**› <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216867>

**Contact**›

⇒ Yoshitaka Michihiro (A203) (Office Hour: 木曜日17時-18時)