

## Department of Civil and Environmental Engineering Yoshimura Chihiro

## Aquatic Environmental Science 10. Nutrient Cycle

- 1. Nutrient and Essential Elements
  - Macronutrient, Micronutrient
- 2. Importance of Nutrients in Aquatic Systems
- 3. Nitrogen Cycle
  - Fixation, Assimilation, Nitrification, Denitrification
  - Nitrogen Transformation Model
  - Nitrogen-related Kinetics
  - Stable Isotope in Biogeochemistry
- 4. Phosphorus Cycle
- 5. Modeling Biological Transformation
- 6. Exercise