Watershed Hydrologic Engineering

2 units (selection)

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Target〉 The purpose of this subject is to learn models and theories on hydrological and chemical cycles in a river watershed.

Outline〉 Watershed hydrologic system. Watershed hydrologic processes. Evaporation and transpiration processes. Lumped and distributed rainfall-runoff models. Canopy interception tank model. Heat-pulse transpiration model. Mathematical models of solute runoff process for forested watersheds. Water and solute budgets for forested watersheds. Management system of flood, water resources, and watershed environment.

Style〉 Lecture

Keyword〉 ***forested basin, hydrological cycle, solute runoff, runoff model***

Fundamental Lecture〉 "**Advanced Water Circulation Engineering**"(0.5)

Relational Lecture〉 "**Ecological Hydroengineering**"(0.5)

Requirement〉 not specified

Notice〉 not specified

Goal〉

1. Understand models and theories on hydrological cycels
2. Understand models and theories on chemical solute cycles

Schedule〉

1. Hydrologic Cycle in a River Watershed
2. Rainfall Interception Process in a Forest Watershed
3. Transpiration Process in a Forest Watershed
4. Runoff Process in a Forest Watershed
5. Modeling of Overland flow
6. Distributed Runoff Models
7. Modeling of Hydrologic Cycle in a River Watershed (1)
8. Modeling of Hydrologic Cycle in a River Watershed (2)
9. Evaluation Index of Hydrologic Cycle in a River Watershed
10. Formation Process of Streamwater Chemistry in a Forest Watershed
11. Runoff Process of Chemical Solutes in Streamwater
12. Inference of Forest Change to Streamwater Chemistry
13. Mathematical Model of Solute Runoff in Streamwater (1)
14. Mathematical Model of Solute Runoff in Streamwater (2)
15. Modeilng of Water and Solute Cycles in a River Watershed

Evaluation Criteria〉 Evaluated with the report by 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=216900

Student〉 Able to be taken by only specified class(es)

Contact〉

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