

Advanced Materials for Civil Works

2 units (selection)

Takao Ueda · PROFESSOR / PLANNING AND DESIGN SYSTEMS ENGINEERING FOR INFRASTRUCTURES, CIVIL AND ENVIRONMENTAL ENGINEERING, INTELLIGENT STRUCTURES AND MECHANICS SYSTEMS ENGINEERING

Target Acquirement of recent technique on concrete engineering particularly new concrete such as high performance concrete ,eco-concrete, etc., and maintenance engineering in civil works, in the view point of sustainable material cycling society.

Outline Characteristics and performance of important materials used for civil works to construction infrastructure facilities and to manage environment. A concept of environment conscious materials and environmentally friendly concrete. Characteristics and designing method of environmentally mitigative concrete and organism adaptable concrete, such as porous concrete including many continuous voids and big holes, used for concrete structures and environmentally friendly materials to realize sustainable development.

Style Lecture in combination with Portfolio

Keyword *sustainable society, material cycling society, materials for civil works*

Relational Lecture “[Flow Mechanism and Control for Fresh Concrete](#)”(0.5)

Requirement No requirement.

Notice This class is consisted of some lectures, some reporting for subjects and presentation and discussion class on the reports

Goal

1. Understanding on a concept of sustainable material cycling society in civil works.
2. Understanding on materials having low environmental impact in civil works.

Schedule

1. Guidance
2. Definition of eco-concrete
3. Properties of porous concrete(1)
4. Properties of porous concrete(2)
5. Proportioning method of porous concrete
6. Application example of porous concrete
7. Properties of recycled aggregate concrete(1)
8. Properties of recycled aggregate concrete(2)
9. Landscape of concrete structures
10. Properties of concrete admixing fly ash (1)
11. Properties of concrete admixing fly ash (2)

12. Properties of concrete admixing blast furnace slag

13. Durability of concrete admixing industrial by-products

14. Durability design and life cycle design (1)

15. Durability design and life cycle design (2)

Evaluation Criteria Estimation using presentation and reports.

Textbook Using photo copying materials, etc.

Webpage <http://iji-lab.sakura.ne.jp/>

Contents <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216692>

Student Able to be taken by student of other department and faculty

Contact

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Hour: 年度ごとに学科の掲示を参照すること)