Syllabus 2019 Human-Social Information Sciences
Mathematical Urban Modeling

■ Basic information

<table>
<thead>
<tr>
<th>held this year:</th>
<th>yes</th>
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</thead>
<tbody>
<tr>
<td>instructor(s)</td>
<td>Takashi Akamatsu</td>
</tr>
<tr>
<td>room</td>
<td>Civil Engineering and Architecture 203</td>
</tr>
<tr>
<td>schedule</td>
<td>The first half year (Wednesday) 13:00-14:30</td>
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<tr>
<td>begins on</td>
<td>04/10</td>
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■ Objectives and outline

see the following page:
http://www.plan.civil.tohoku.ac.jp/~akamatsu/MathUrban/syllabus.html

■ Class plan

[Introduction to Spatial Equilibrium Analyses and VIP]
#01 Introduction to Spatial Economic Analysis
#02 Spatial Equilibrium Analysis and Variational Inequalities
#03 Basics of Variational Inequality Theory

[Traffic Network Equilibrium Analyses]
#04 Traffic Network Equilibrium Analyses (Part I)
#05 Traffic Network Equilibrium Analyses (Part II)
#06 Traffic Network Equilibrium Analyses (Part III)
#07 Spatial Price Equilibrium Analysis

[Location/Migration Equilibrium Analyses]
#08 Residential Location Equilibrium Analyses (Part I)
#09 Residential Location Equilibrium Analyses (Part II)
#10 Location Equilibrium with Interactions among Firms and Workers
#11 Core-Periphery Regional Equilibrium Models

[VIP approach to Risk Management/Control Problems in Spatial Economy]
#12 Modelling Dynamic Uncertainty: Stochastic Processes
#13 Overview of Conventional Real/Financial Option Theory
#14 VIP approach to Dynamic Risk management Problems

The following alternative program may be given, depending on the students’ interests:

[Spatial General Equilibrium Analyses]
#12 Multi-Regional Spatial General Equilibrium Models (Part I)
#13 Multi-Regional Spatial General Equilibrium Models (Part II)
#14 VIP approach to Dynamic Equilibrium Modeling
Evaluation

see the following page:
http://www.plan.civil.tohoku.ac.jp/~akamatsu/MathUrban/syllabus.html

Textbook(s)

see the following page:
http://www.plan.civil.tohoku.ac.jp/~akamatsu/MathUrban/MUM%2707-R%28E%29.html

Web site

http://www.plan.civil.tohoku.ac.jp/~akamatsu/MathUrban/syllabus.html

Office hours

Wednesday 14:30～15:30

Other information