Spring 2014

Water Resources Systems Engineering - Technion

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1. INSTRUCTORS
Lecturer: Associate Prof. Avi Ostfeld, Office hrs: Sunday 10:00 – 11:00, Rabin 610; Phone: 2782, 050-7726139 (cell); Email: ostfeld@tx.technion.ac.il
Teaching assistant: Rafi Schwartz, Office hrs: Thursday 12:30-13:30, Borovitz 326; Phone: 077-8875943; Email: t2rafi@gmail.com.

2. TEXT BOOKS
2. Water Resources Systems Analysis / Mohammad Karamouz, Ferenc Szidarovszky, Banafsheh Zahraie
3. Water Resources Handbook / Larry W. Mays (Ed.)
4. Water Resources Engineering / Larry W. Mays (Ed.)

3. PREREQUISITES
014004 System Analysis
014212 Introduction to Engineering Hydrology
014205 Hydraulics
014308 Basics of Environmental Engineering

4. TEACHING AND GRADES
- 2 hrs weekly lecture + 1 hr training (exercise)
- Grade structure: 50% homework, projects, reports + 50% final exam (closed book, lectures theory open questions + exercises)

5. TOPICS

<table>
<thead>
<tr>
<th>1. INTRODUCTION</th>
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<tbody>
<tr>
<td>2. Reservoirs</td>
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<tr>
<td>SPA = Sequent Peak Algorithm</td>
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<tr>
<td>LDR = Linear Decision Rule</td>
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<td>SLDR = Stochastic Linear Decision Rule</td>
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<td>3. Water distribution systems</td>
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<tr>
<td>Simulation</td>
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<tr>
<td>Linear programming for branched networks least cost design</td>
</tr>
<tr>
<td>Looped water distribution systems, linear programming gradient (LPG), genetic algorithms, ant colony</td>
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<td>Water quality in distribution systems, EPANET</td>
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<td>4. Water resources systems selected example problems</td>
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<td>Surface waters, Groundwater, Integrated systems</td>
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