# CE 351 Week-by-Week Schedule (subject to minor adjustments as we go)

**Spring 2014**

## Part 1. Pipe Systems

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topics</th>
<th>Text Sections</th>
<th>Laboratory</th>
<th>Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1/27 - 1/31</td>
<td>Course overview</td>
<td>1.1-1.3, 2.1-2.2</td>
<td>Hydraulics Lab procedures</td>
<td>Read Salzman <em>Drinking Water</em> excerpts - 1-page response see \cee\drive\CE351</td>
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<tr>
<td></td>
<td></td>
<td>Pipe systems</td>
<td>12.1, 12.3</td>
<td>Measurement errors and data analysis</td>
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<td></td>
<td></td>
<td>Friction and local losses</td>
<td>4.3, 12.1.2, 12.2.3</td>
<td>Flow-measuring devices</td>
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<tr>
<td>2</td>
<td>2/03 - 2/07</td>
<td>Parallel and branching pipes</td>
<td>4.5, 12.6</td>
<td>Determining pipe friction factors</td>
<td>HW1 - course folder</td>
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<tr>
<td></td>
<td></td>
<td>Pipe networks</td>
<td></td>
<td>and flow in a parallel pipe network</td>
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<tr>
<td>3</td>
<td>2/10 - 2/14</td>
<td>Pumps and pump curves</td>
<td>12.2, 12.5</td>
<td>Metzgar Solar Pumping System 1</td>
<td>Prob 12.6.4 - solve for both</td>
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<tr>
<td></td>
<td></td>
<td>Parallel and series pumps</td>
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<td>-system overview</td>
<td>PVC and cast iron (at 65F). Also</td>
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<td></td>
<td>-pump curve</td>
<td>determine pressure drops in</td>
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<td>-tasks and planning</td>
<td>each pipe. Discuss results</td>
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## Part 2. Open Channel Flow

<table>
<thead>
<tr>
<th>Week</th>
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<th>Homework</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2/17 - 2/21</td>
<td>Uniform open channel flow</td>
<td>5.1, 15.3</td>
<td>visit to Nurture Nature Center</td>
<td>HW3 - course folder</td>
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<tr>
<td></td>
<td></td>
<td>Best hydraulic X-section</td>
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<td>Floods, Climate change, and art</td>
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<td><em>no evening lab</em></td>
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<tr>
<td>5</td>
<td>2/24 - 2/28</td>
<td>Channel design</td>
<td>5.2</td>
<td>Movie time - Exam week</td>
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<tr>
<td></td>
<td></td>
<td>Specific energy</td>
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**Wednesday, Feb 26, Evening Exam 1**

<table>
<thead>
<tr>
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<th>Homework</th>
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<tbody>
<tr>
<td>6</td>
<td>3/03 - 3/07</td>
<td>Critical flow, alt depths</td>
<td>5.2, 5.6</td>
<td>Open channel flow meas 1 - Weirs</td>
<td>HW5 - course folder</td>
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<tr>
<td>7</td>
<td>3/10 - 3/14</td>
<td>Flow transitions</td>
<td>5.4</td>
<td>Open channel flow meas 2 - Sullivan Park</td>
<td>HW6 - course folder</td>
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<td></td>
<td></td>
<td>Weirs, Hydraulic Jump</td>
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**Spring Break week! March 17 - 21**
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<th>Homework</th>
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<tbody>
<tr>
<td>8</td>
<td>3/24 - 3/28</td>
<td><strong>DB at conf - NO CLASS Monday</strong>&lt;br&gt;Prob &amp; stats in water resources&lt;br&gt;Exceedence prob &amp; return period</td>
<td>Ch 10</td>
<td>Open channel flow meas 3 - Streamflow and rating curves - <em>weather dependent</em></td>
<td>HW7 - course folder</td>
</tr>
<tr>
<td>9</td>
<td>3/31 - 4/04</td>
<td><strong>Frequency Analysis</strong>&lt;br&gt;Log-Normal and LP3 fits</td>
<td>Ch 10</td>
<td>Metzgar Solar Pumping System 2 -install</td>
<td>Analysis of Del River &amp; Little Lehigh Cr peak flows</td>
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<td><em>Note: 4/03 is last FE review session</em></td>
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<tr>
<td>10</td>
<td>4/07 - 4/11</td>
<td><strong>Watersheds and hydrology</strong>&lt;br&gt;FE exam prep&lt;br&gt;<strong>Friday - Moles trip to NYC?</strong></td>
<td>Ch 7</td>
<td>Movie time - Exam week</td>
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<tr>
<td>11</td>
<td>4/14 - 4/18</td>
<td><strong>Stormwater design</strong>&lt;br&gt;Precipitation and design storms&lt;br&gt;Role of groundwater</td>
<td>Ch 8</td>
<td>Groundwater flow direction at Metzgar&lt;br&gt;Continue work on solar pump system</td>
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<tr>
<td>12</td>
<td>4/21 - 4/25</td>
<td><strong>Stormwater runoff</strong></td>
<td>Ch 8</td>
<td>Using GIS for watershed analysis (computer)</td>
<td></td>
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<tr>
<td>13</td>
<td>4/28 - 5/02</td>
<td><strong>Stormwater</strong></td>
<td>Ch 8</td>
<td>Runoff modeling (computer)</td>
<td></td>
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<tr>
<td>14</td>
<td>5/05 - 5/09</td>
<td><strong>DB at conf - NO CLASS Monday</strong>&lt;br&gt;Stormwater detention</td>
<td>9.0 - 9.2, 15.4</td>
<td>Field trip to Beltzville Dam&lt;br&gt;(<em>no evening lab</em>)</td>
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