## Course Syllabus for: HWR213 (distance learning section)

Readings: Cadillac Desert, Marc Risner; Southwest Hydrology (SWH), [www.swhydro.arizona.edu/archive/](http://www.swhydro.arizona.edu/archive/); as assigned

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<th>Wk</th>
<th>Topics</th>
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<tr>
<td></td>
<td>Unit 910: Laws and Institutions – Water Supply</td>
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</table>
| 1  | **Unit Overview**  
Water units/ calculations/ conversions *  
Water budgets - How much water is there? | A Country of Illusion, Cadillac Desert Ch. 1, p. 15-51 | HW: Water units/ calculations/ conversions *  
HW: Water budgets  
THUR.PRESENTATION: Introductions |
| 2  | **Laws**  
General rules governing distribution of water  
THUR.DISCUSSION: Does it matter if AZ’s rivers are navigable? |
| 3  | **Legal Case Studies:**  
Navigability of Arizona rivers, Holocene Flood Plain Aquifer, Gila Adjudication | Various: see web site  
| 4  | **Water infrastructure system**  
How does water get here?  
Colorado River Compact and CAP  
City water systems  
Drought shortage sharing arrangements | The Colorado River Compact, CRWUA, [crwua.org/ColoradoRiver/RiverUses/LawoftheRiver](http://crwua.org/ColoradoRiver/RiverUses/LawoftheRiver)  
The West Against Itself: The Colorado River – An institutional history, Hundley, CRWA, 29 pg. (skim) | HW: Colorado River Compact |
| 5  | **Water Management Systems**  
Roles of ADWR/ADEQ/EPA/USGS  
GWMA 1980/ AMA’s / Groundwater,CAGRD | Watering the Sun Corridor – Managing Choices in Arizona’s Megapolitan Area, Morrison Institute, [morrisoninstitute.asu.edu/publications-reports/2011](http://morrisoninstitute.asu.edu/publications-reports/2011) | THUR.PRESENTATION: How would you achieve a sustainable water supply? |
| 6  | **Unit overview**  
Water units/ calculations/ conversions *  
Climate/Precip Patterns | An American Nile (!), Cadillac Desert Ch. 4, p. 120-144 | Quiz: Water Supply Unit  
HW: Water units/ calculations/ conversions *  
HW: Precipitation patterns  
THUR.PRESENTATION: New Introductions? |
| 7  | **Groundwater-Surface water interactions**  
Regional water budgets  
GW model demonstration  
What springs, base flow, minimum flow tell us  
AMA and pumping limitations/regulations | Participatory learning on the San Pedro – Designing the crystal ball together; *Holly Richter*, [SWH 5(4)](http://swhydro.arizona.edu/archive/5/4) | HW: Analyzing river flow |
| 8  | **GW-SW Interaction Case Studies:**  
Santa Cruz - Tucson  
San Pedro – Sierra Vista – Ft. Huachuca  
Verde - Prescott – Chino | Plan to mitigate Big Chino pumping, Meyer & Wolfe, [www.upperverdewaterissues.org/full reports/...](http://www.upperverdewaterissues.org/full reports/...) | THUR.DISCUSSION: How to conjunctively manage growth around SV? |
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<th>Week</th>
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<tr>
<td>10</td>
<td>Runoff</td>
<td>Techniques for estimating runoff. Flashfloods; Flood plains; Flood safety. Fluvial geomorphology/ Erosion processes/Examples of bed loads and scour. HW: Estimating channel capacity. THUR.PRESENTATION: Reasons why/why not my property is at risk from floods?</td>
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<td>11</td>
<td>Unit 912: Personal Water Issues</td>
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<td>14</td>
<td>Interior Conservation</td>
<td>Typical household water use; water metering; loads leveling; Grey water systems. Estimating household water use/How things work – swamps. HW: Household audit.</td>
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<td>15</td>
<td>Exterior Conservation</td>
<td>Xeriscaping; Estimating exterior water use/How things work–pool. HW: Rainwater harvesting. THUR.PRESENTATION: How much water can you save?</td>
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<td>16</td>
<td>Finals week</td>
<td>Quiz: Water Quality and Final Paper.</td>
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