**Integrating Geoscience into Water Resources Engineering**

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Since fall of 2010, I have been teaching few undergraduate courses in water resources areas including “hydrology” and “water resources engineering design”. My research interests are in the broad area of surface and subsurface hydrology, watershed modeling, modeling evaluation of best management practices for non-point source pollution reduction, and impact assessment of climate variability and change and land use changes.

I think that my teaching and research interest connections with geosciences are followings:

1. Role of climate variability (mainly precipitation) in determining design discharge for designing water resources infrastructures including reservoirs and storm water sewer systems; Concepts of ENSO and non-stationarity
2. Sustainable water resources management for limited fresh water resources and under current variable climate and predicted changing climate
3. Effect of land use, topography and soil characteristics in runoff generation processes (Curve number approach, hydrograph approach, others)
4. Effect of watershed characteristics in streamflow routing in connection with flood frequency analysis for hydraulic structures
5. Origination, movement and discharge of groundwater for baseflow contribution as well as for pumping fresh water resources; role of geology such as karst area, sink holes, etc.

I incorporate above topics into my teaching through example problems and/or just plain discussions. But I plan to add/refine more as it relates to my interests, and I think it is important for future water engineers to have some basic knowledge on these topics.

Aside from the topics listed above, I am sure there are more which could potentially be integrated into my teaching. But this is where I need learning and expanding my horizon on what could be included and more importantly how (which methods) could be best implemented for better explanation and retention of the subject material. I hope this workshop will help me find connections in learning and expanding my thoughts on integrating geosciences into water resources engineering.

I would like to expand on erosion and sedimentation and its impact on water resources structures; for example, how design methods could be extended to include impact of sedimentation in irrigation canals, reservoirs, detention ponds, etc.

I would like to see and learn from others' experiences on integrating geoscience into engineering. I may not find exact links to water resources related topics in this workshop, but I hope to find some clues through case studies and on implementation methods. I am looking forward to gain some experience and ideas that I could use in my undergraduate teaching. Finally I would like to thank the workshop organizers for providing us with this opportunity to learn which will eventually help future professionals and workforce equipped with a better knowledge.