**Seminar in Submarine Groundwater Discharge**

GG 711 Special Topics: CRN 79284 (3 credits)

Wednesdays 2:30-5:00, POST 702

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**Course Contents, Objectives and Grading:** As the title of the course implies, the major focus of this class is *Submarine Groundwater Discharge* (SGD), but in reality the purpose of this course is to introduce and cover the wide spectrum of processes that involve the origin, cycling, fate and impacts of all marine and fresh waters that eventually end up blending and discharging together into the sea. To that end, this course is thus a Seminar, and will feature a new specialist guest speaker to learn from and discuss ideas with each week. Examples of topics covered include how the seemingly “invisible” SGD is detected and measured in place by tracer techniques and remote sensing (satellite, aircraft, drone, subsurface electrical resistivity), the roles of climate and precipitation changes, how groundwater models are conceived and constructed and used, circulation within coastal aquifers, the consequences of climate change and sea level rise/coastal flooding, the socio-economics of SGD, the legacy and survival of Hawaiian fishponds and anchialine ponds, impacts due to agriculture, wastewater, and many other sources of pollution, and impacts on coastal ecology and food chains, including harmful algal blooms and both deleterious as well as sustaining effects on limu-algae and our coral reefs, etc. While the discussions are universal, many will draw insights directly from within Hawai‘i.

Assigned readings are distributed before each talk to familiarize students with the topic, and grading is based on class participation and turning in a class journal at the end of the semester. Most talks will be in POST 702 Seminar Room. The one session per week format allows ample time for in-depth and personal discussions with each speaker.

**Learning Outcomes:**
1) Improve critical thinking and technical knowledge
2) Gain qualitative and quantitative data interpretation skills
3) Learn applications of field and laboratory techniques in the study of groundwater and submarine groundwater discharge
4) Classroom discussions and presentations improve effective scientific communication

**Disability Access:**
If you have a disability and related access needs the Department will make every effort to assist and support you. For confidential services students are encouraged to contact the Office for Students with Disabilities (known as “Kokua”), Room 013 of Queen Lili‘uokalani Center for Student Services: Email: kokua@hawaii.edu URL: ww.hawaii.edu/kokua