



**STATEWIDE WASTEWATER OPERATOR TRAINING CENTER  
WATER RESOURCES RESEARCH CENTER, UNIVERSITY OF HAWAII  
HONOLULU, HAWAII**



**TRAINING SESSION ANNOUNCEMENT  
317 FUNDAMENTALS OF BIOLOGY AND CHEMISTRY**

County: Honolulu  
Location: Sand Island WWTP Classroom, 2<sup>nd</sup> Floor Ops Bldg  
1350 Sand Island Pkwy  
Dates: **September 19 and 20, 2018 [REVISED DATES]**  
Times: 8:00 a.m. – 11:00 a.m.  
Lunch (11:00 a.m. – 12:00 p.m.)  
12:00 p.m. – 3:00 p.m.  
Audience: Operators  
Educational Point: 1.0 CEU  
Instructor: Bruce Zhang

**COURSE DESCRIPTION**

This training program is designed to prepare operators to understand the chemical and biological basis of various treatment processes such as chemical addition, disinfection, chemical odor control, activated sludge, biological nutrient removal, and aerobic/anaerobic digestion. Part 1 covers the fundamentals of chemistry such as stoichiometry, pH, chemical equilibrium, Henry's Law, coagulation, precipitation and neutralization. Part 2 covers the fundamentals of biology such as types of microorganisms, cell composition, molecular tools, metabolism, nutrient requirements, bacteria yield, stoichiometry, growth kinetics, and aerobic/anoxic/anaerobic reactions. biological phosphorus removal will be covered in terms of basic principles of luxury uptake of phosphorus, start-up, operation, and maintenance of different types of systems. Part 3 is a brief overview of chemical and biological treatment processes in wastewater treatment plants.

**REGISTRATION**

All Treatment Plant Personnel (County, State, Private):

**TUITION: \$110**

Please mail application form and tuition directly to the Statewide Wastewater Training Center.

Include a CHECK payable to: **RCUH**      *We do NOT accept credit cards or cash*

Application form is at: [www.wrrc.hawaii.edu/swotc.shtml](http://www.wrrc.hawaii.edu/swotc.shtml)

Mail to: Statewide Wastewater Operator Training Center  
University of Hawaii, Water Resources Research Center  
2540 Dole Street, Holmes Hall 283  
Honolulu, Hawaii 96822.

Fax: 808-956-5014      Email: [uhwwtrainingcenter@gmail.com](mailto:uhwwtrainingcenter@gmail.com)

**Deadline: Sep 17, 2018**

The minimum enrollment for this class is 5.

*If fewer than five students are enrolled by the deadline, the class will be cancelled*

**EQUAL OPPORTUNITY**

Any disabled person requiring special needs will be accommodated. Any disabled person requiring special assistance should contact the Administrator at 956-7298 or [uhwwtrainingcenter@gmail.com](mailto:uhwwtrainingcenter@gmail.com).