

**Utah System of Higher Education
New Academic Program Proposal
Cover/Signature Page - Abbreviated Template**

Institution Submitting Request: University of Utah
Proposed Program Title: Graduate Certificate in Water, Sanitation and Health
Sponsoring School, College, or Division: Division of Public Health
Sponsoring Academic Department(s) or Unit(s): Department of Family and Preventive Medicine
Classification of Instructional Program Code¹ : 51.2210
Min/Max Credit Hours Required of Full Program: 15 / 25
Proposed Beginning Term²: Fall 2020
Institutional Board of Trustees' Approval Date:

Program Type:

<input type="checkbox"/>	Certificate of Proficiency	<input type="checkbox"/>	Entry-level CTE CP	<input type="checkbox"/>	Mid-level CP
<input type="checkbox"/>	Certificate of Completion				
<input type="checkbox"/>	Minor				
<input checked="" type="checkbox"/>	Graduate Certificate				
<input type="checkbox"/>	K-12 Endorsement Program				
<input type="checkbox"/>	NEW Emphasis for Regent-Approved Program <i>Credit Hours for NEW Emphasis Only:</i> / <i>Current Major CIP:</i> 6 - Digit CIP <i>Current Program Title:</i> <i>Current Program BOR Approval Date:</i>				
<input type="checkbox"/>	Out of Service Area Delivery Program				

Chief Academic Officer (or Designee) Signature:

I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

_____ Date:

☐ I understand that checking this box constitutes my legal signature.

¹ For CIP code classifications, please see <http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55>.

² "Proposed Beginning Term" refers to first term after Regent approval that students may declare this program.

**Utah System of Higher Education
Program Description - Abbreviated Template**

Section I: The Request

University of Utah requests approval to offer the following Graduate Certificate: Graduate Certificate in Water, Sanitation and Health effective Fall 2020. This program was approved by the institutional Board of Trustees on .

Section II: Program Proposal/Needs Assessment

Program Description/Rationale

Present a brief program description. Describe the institutional procedures used to arrive at a decision to offer the program. Briefly indicate why such a program should be initiated. State how the institution and the USHE benefit by offering the proposed program. Provide evidence of student interest and demand that supports potential program enrollment.

The Division of Public Health (DPH) is proposing a graduate certificate in Water, Sanitation and Health (WASH) Science as part of our efforts to develop an innovative educational experience that gives both undergraduate and graduate students across disciplines, the opportunity to learn in classroom, laboratory and field settings the multidisciplinary fundamentals regarding WASH problems and solutions. Students will join with Ghanaian WASH practitioners for experiential learning and to apply the knowledge and skills on an applied WASH project as part of our Ghana Learning Abroad program. This program aims to work with groups of faculty with diverse expertise in the public health, engineering, behavioral and community as aspects of WASH in low middle income countries (LMICs). Every year for the past 14 years we have been conducting a Global Health Learning Abroad program in Ghana, frequently focused on WASH topics. Typical enrollment in the program is 20-30 students per year.

Upon completion to the WASH certificate, students will have demonstrated a mastery of essential WASH related concepts that include engineering, public health, policy and community engagement. Specific objectives for mastery include:

- 1) Understanding basic physical, chemical and biological water treatment processes.
- 2) Effective use of community-engagement practices related to WASH concepts.
- 3) Demonstrate compliance with and understanding of local and national level policies related to WASH activities.

Recipients of the certificate will be able to demonstrate mastery of the stated objectives by successfully completing the core courses and their selected electives with the grade of a B or greater and successful participation in the WASH Academy intensive learning abroad experience. On the learning abroad experience, certificate applicants will participate in a hand-on WASH related project as well as experiential educational programming.

Students will be eligible for the certificate program by applying with a completed bachelor degree and a GPA of 3.0 or higher. The WASH certificate will allow acceptance for fall and spring semesters.

Labor Market Demand

Provide local, state, and/or national labor market data that speak to the need for this program. Occupational demand, wage, and number of annual openings information may be found at sources such as Utah DWS Occupation Information Data Viewer (jobs.utah.gov/jsp/wi/utalmis/gotoOccinfo.do) and the Occupation Outlook Handbook (www.bls.gov/oco).

The demand for WASH trained individuals is largely a global need that has local application. By most measures, Utah is largely a rural and frontier state. In many of these rural and frontier areas, water and sanitation options are limited. On-site treatment of both drinking water and wastewater are vital to health communities locally and across the state. In Utah alone, in February 2020, an online search for jobs with key words, Water, Sanitation and Hygiene revealed approximately over 1500 open positions with ~400 openings offering a starting salary >\$40,000, and 108 openings with a starting salary of >\$65,000. The Utah Rural Water Association alone, has 24 job openings for WASH trained individuals.

The World Health Organization (WHO) has stated that "The Sustainable Development Goals have been agreed and it is the ambition of the global community to ensure the availability and sustainable management of water and sanitation for all by 2030. This important goal will only be achieved if the WASH sector works effectively with other sectors, including the health sector. There is no area of work where such collaboration is more important than with WASH in health care facilities. Without it, the global community will not reach the goal of universal access to WASH, neither will it achieve any of the global health-related goals, including those to reduce maternal mortality and end preventable newborn deaths; to strengthen capacity to prevent and better manage global health risks, and to provide quality, affordable, people-centered health care for all."

The WHO reports that 1.8 billion people globally use sources of water with fecal contamination and 2.4 billion people do not have access to improved sanitation such as toilets or latrines. Addressing these issues requires not only the technical skills and knowledge to design and construct appropriate systems, but a deep understanding of health beliefs of a community, determinants of water-related behaviors, community mobilization and dynamics, microbiology, public health, economics and financing. As such, challenges in meeting the WASH needs of a community provide a focal point for addressing many of the underlying principles of global learning. At the time of submission, the United Nations had over 180 job listings specifically tied to WASH training. The World Bank lists 38 immediate job openings for individuals with training in WASH. UNICEF lists and additional 38 openings.

Consistency with Institutional Mission/Impact on Other USHE Institutions

Explain how the program is consistent with the institution's Regents-approved mission, roles, and goals. Institutional mission and roles may be found at higheredutah.org/policies/policyr312/. Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in higheredutah.org/policies/policyr315/.

This program meets the mission statement of the University of Utah section 4.1.1. "... we engage local and global communities to promote education, health and quality of life." Currently the proposed coursework for the Certificate in WASH will primarily be provided at the Salt Lake campus of the University of Utah, with a portion of the required coursework being provided in Ghana. Ghana is a LMIC where the nation faces WASH challenges on a daily basis. The environment in Ghana provides an excellent template for understanding the challenges to WASH in a real world setting with both concentrated urban and dispersed rural populations, much of which resources are limited. The health challenges posed by inadequate provision of WASH services in Ghana is significant and working with local community leaders in combines the scientific and research expertise of the University and the local expertise of the population to innovate solutions that may provide insights to global solutions.

Finances

What costs or savings are anticipated in implementing the proposed program? If new funds are required, indicate expected sources of funds. Describe any budgetary impact on other programs or units within the institution.

The addition of a WASH Certificate will not impose significant new direct financial cost since the departments and divisions involved have existing faculty and staff with most courses already in place. The PBHLT 5560/6560 course that is listed as new, will be taught as an upper division undergraduate course with a cross-listed graduate level option. The PBHLT 5631/6631 course that is listed as new has already been approved by the University as a course and was offered in fall 2019. The course description of PBHLT 5631-6631 is: This course introduces students to the problems and solutions to Water, Sanitation and Hygiene/Health (WASH) in both LMICs and HICs. Students will learn about processes for producing clean drinking water, onsite and offsite wastewater treatment and the relationship between water, environment and health as well as strategies to prevent transmission of diseases through water and wastewater to human populations. There is a required lab portion of this course where students will get hands-on experience in onsite technologies for water and wastewater treatment including potential visits to water and wastewater treatment plants.

These courses will replace the teaching assignments of one of the Public Health faculty. Thus a slight increase in the development of the course in year one. Personnel and faculty may face a modest increase in administrative tasks related to new students' admissions, tracking, practicum supervision, and student advising. There will be a lab fee for the new course to cover the expenses of materials and equipment for the students participating in the WASH lab and to cover the cost for transportation to local WASH facilities. The expected lab fee will be \$75.

Section III: Curriculum

Program Curriculum

List all courses, including new courses, to be offered in the proposed program by prefix, number, title, and credit hours (or credit equivalences). Indicate new courses with an X in the appropriate columns. The total number of credit hours should reflect the number of credits required to receive the award. **For NEW Emphases, skip to emphases tables below.**

For variable credits, please enter the minimum value in the table below for credit hours. To explain variable credit in detail as well as any additional information, use the narrative box below.

Course Number	NEW Course	Course Title	Credit Hours
General Education Courses (list specific courses if recommended for this program on Degree Map)			
General Education Credit Hour Sub-Total			
Required Courses			
PBHLT 5560/6560	X	WASH Science	4
PBHLT 5631/6631	X	WASH Academy Lab	1
PBHLT 5531/6531		International Fieldwork in Public Health (credits vary between 2-6)	4
Add Another Required Course			
Required Course Credit Hour Sub-Total			9
Elective Courses			
PBHLT 6200		Environmental Health	3
PBHLT 6530		Global Health	3
PBHLT 6502		International Public Health Issues	3
PBHLT 6340		Infectious Diseases Epidemiology	3
CVEEN 5410		Hydrology	3
CVEEN 5610		Water Chemistry and Lab Analysis	3
CVEEN 6470		Surface Water Quality Prediction	3
CVEEN 6605		Treatment Design	3
CVEEN 6920		Microbiology in Systems	3
CVEEN 7920		Environmental Processes	3
CVEEN 6650		Biological Processes Design	3
ENVST 5557		Teaching Sustainability	3
ENVST 5559		Air, Water, & Health	3
Add Another Elective Course			
Elective Credit Hour Sub-Total			6
Core Curriculum Credit Hour Sub-Total			15

Propose a NEW Emphasis to an existing Regent approved program

Program Curriculum Narrative

Describe any variable credits. You may also include additional curriculum information, as needed.

The course PHBLT 5631/6631- WASH Academy Lab is a required fieldwork component that adds a new WASH Academy 1 hour experience to an existing Ghana Global Health Learning Abroad experience of 4 credit hours. We envision the WASH Academy to be an experiential learning program that includes learners and teachers from disparate disciplinary areas and a wide range of roles and experiences. The first component is a one-week intensive course that invites undergraduate and graduate students, local WASH practitioners, community representatives, and government and NGO officials, to experience and interact in an inter-professional manner on not only practical WASH project skills, but on the differences in approaches, values and philosophies in addressing WASH problems in particular, and to development activities in general. Activities will cover: design, construction, maintenance and operations of WASH facilities, community participation and governance, financing, and health impact evaluation. Participants will learn skills by developing a 'WASH Park', where WASH facilities (such as small slow-sand filters or VIP latrines) are constructed and remain for future sessions of the Academy. This learning experience will be a required part of the proposed Graduate certificate in WASH Sciences and will be open to undergraduate students for credit. We will also offer a Continuing Education Certificate to local professionals and community members who complete the course. Certificate seekers who participate in the WASH Academy in Ghana will then remain in Ghana and exercise their new knowledge by participating in a WASH focused research project as part of the existing Ghana Global Health Learning Abroad Program.

Degree Map

Degree maps pertain to undergraduate programs ONLY. Provide a degree map for proposed program. Degree Maps were approved by the State Board of Regents on July 17, 2014 as a degree completion measure. Degree maps or graduation plans are a suggested semester-by-semester class schedule that includes prefix, number, title, and semester hours. For more details see <http://higheredutah.org/pdf/agendas/201407/TAB%20A%202014-7-18.pdf> (Item #3).

Please cut-and-paste the degree map or manually enter the degree map in the table below