

<b>Subject Code</b>	BSE2S01
<b>Subject Title</b>	Science for Healthy and Sustainable Living Environments
<b>Hosting Department</b>	Department of Building Service Engineering
<b>Level</b>	2
<b>Class Quota</b>	40
<b>Medium of Instruction</b>	English
<b>Subject Duration</b>	2-Semester (Semester 2 from week 6 + Summer)
<b>Teaching Staff</b>	Dr. KW Mui and Dr. LT Wong
<b>Target Students</b>	GUR, open for students from FENG, FCE and FAST
<b>Pre-requisites</b>	Nil
<b>Selection of Students Required?</b>	No
<b>Subject Synopsis</b>	<p><i>Concepts and Practices of Service Learning:</i></p> <ul style="list-style-type: none"> <li>• Principles, concepts and myths of service learning</li> <li>• Benefits of service learning to students, the university and the community</li> <li>• Ethical issues in service learning</li> <li>• Basic concepts and theories of social problems, justice and development</li> <li>• Social responsibilities of global citizens as intellectuals and professionals</li> <li>• Proper attitudes and behaviours in service delivery</li> <li>• Development of a service project proposal/plan</li> <li>• Effective teamwork and problem solving skills in service learning projects</li> <li>• Reflection as a tool for learning</li> </ul> <p><i>Discipline-Specific Concepts, Issues and Skills</i></p> <ul style="list-style-type: none"> <li>• Principles of sustainability; concepts of sustainable built environment and green buildings;</li> <li>• Scientific method and inquiry; formulation, hypothesis, prediction and experiment;</li> <li>• Applications of basic scientific methods and scientific thinking to everyday experiences and global concerns in relation to built environments: e.g. quantification of sustainability, consumption, efficiency and conservation of energy, water and other resources, reduction of wastes and disposals</li> <li>• Environmental, financial, cultural and socioeconomic challenges faced by underprivileged people relating to sustainability and living environment, particularly relating to the capability to achieve and maintain sustainable practices or a healthy living environment.</li> </ul>

	<p><i>Project-Specific Concepts, Issues and Skills</i></p> <ul style="list-style-type: none"> <li>• Scientific concepts and practices in teaching and demonstrating science and sustainability concepts, including teaching methods, classroom management and communication</li> <li>• Moral and ethical concerns related to working with children and young people in a school setting.</li> </ul>
<b>Service Project</b>	
<b>What will students do to serve?</b>	<p>Students will visit root-grass families to learn about their living situation especially with respect to energy efficiency and sustainability in everyday life in Hong Kong. Students may have to conduct interviews and surveys to get a sense of issues such as energy usage, water usage, etc. Student will then use this experience to design learning activities for primary or secondary school students, and will be required to integrate issues of sustainability into their activities and use interactive and learner-centered activities.</p> <p>Our target is to work with primary and secondary schools that serve mostly underprivileged children, so the issues that our students encounter in their preparatory site visit should be familiar to the primary and secondary students. We intend our service to fit into the Other Learning Activities (OLE) component in the primary and secondary school curriculum frameworks. The schools that we will work with lack the extra resources required to support such activities.</p> <p>Examples of project topics include: water and energy efficiency, environmental quality monitoring, trash reduction and waste audit respectively. Examples of service project topics include: benchmarking utility consumption in home consumption (water, fuel gas and electricity), willingness in adopting energy efficient/water conservation appliances, home waste quantification, trend of air pollution, measurement of indoor temperature and energy impacts, noise assessment etc. Students will have to integrate examples from built environment sustainability, organize relevant and meaningful learning activities, demonstrate engineering experiments, design teaching materials and worksheets, etc. The activities for the primary and secondary students will end with a project, in which our students will act as instructors and mentors to the schoolchildren.</p>
<b>Whom will students serve?</b>	Underprivileged children
<b>Where will students serve?</b>	Primary and secondary school
<b>When will students serve?</b>	Summer term
<b>Fee payable by students</b>	N/A
<b>Enquiry</b>	Dr. KW Mui, Tel: 27665835, email: <a href="mailto:horace.mui@polyu.edu.hk">horace.mui@polyu.edu.hk</a>