Gifted Education Fund: Off-school Advanced Learning Programmes

Programme No. 2020-04 (For primary students)

Title of Programme	**A Programme to Develop Gifted Students' Ability to Conduct Interdisciplinary Inquiry Related to Education, Environment and/ or Science**
Programme Provider	Department of Science and Environmental Studies, The Education University of Hong Kong
Theme	Humanities and Social Science Research Programme
Maximum No. of Participants and Class Level in the 2020/21 School Year	40 students (Primary 4-5)
Pre-requisite	No special background knowledge or skills are required.
Programme Duration	About 11 months
Medium of Instruction	Course Material: Chinese supplemented with English Class teaching/ Discussion: Cantonese supplemented with Putonghua and English
Objectives	• To broaden the gifted students' knowledge and enhance their skills in inquiry-based learning; • To equip the students with the knowledge necessary to carry out the educational, environmental and/ or science inquiry studies; • To strengthen their ability to apply qualitative and quantitative approaches in formulating and implementing inquiry studies; • To develop the gifted students' ability to critically and creatively apply knowledge to make recommendations on social policies and innovative approaches to tackle daily life issues; and • To nurture the values and attitudes of students such as perseverance, care for the natural environment and ethical use of science and technology.
Programme Outline*	This programme aims to enhance the gifted students' knowledge and skills through quality and challenging interdisciplinary inquiry of issues related to Education, Environment and Science. It also nurtures relevant values and attitudes essential for the personal growth of the gifted students. The programme consists of four phases. Phase I: General Inquiry Learning (10 hours in total) • 5 core lessons for all students (face-to-face/ online) (2 hours each);

	• Students will acquire the knowledge and skills related to the processes of inquiry-based learning through hands-on and minds-on challenging learning activities. Phase II: Area Study (8 hours in total) • 4 biweekly workshops (face-to-face/ online) (2 hours each); • Students will participate in activities to inquire authentic issues across disciplines on a chosen area of study, i.e. education, environment or science. Phase III: Guided Enquiry (8 hours in total) • In groups of 3 to 4, students will take part in a guided inquiry. Through exploration, discovery and invention, they will make innovative suggestions on the inquiry topics chosen; • Students will have a 1-hour biweekly meeting with their mentors to seek advice on their projects (face-to-face/ online) (around 8 sessions in total). Phase IV: Presentation (14 hours in total) • 3 lessons on communication/ presentation skills (face-to-face/ online) (2 hours each); • 2 lessons for practices on presentation (face-to-face/online) (2 hours each); • Students will present the results of their inquiry and demonstrate their talents to the audience in a 4-hour (face-to-face/ online) academic conference to be held at the Education University of Hong Kong. * In view of the COVID-19 epidemic, some sessions of the programme may be conducted online.
Application Method	Application form can be downloaded from the following webpage: https://www.edb.gov.hk/en/curriculum-development/curriculum-area/gifted/ge_fund/gef/osalp.html Please complete the application form and send it by post on or before 15 April 2021 (now extended to 30 April) to the following address: D3 - G/F - 08 The Education University of Hong Kong 10 Lo Ping Road Tai Po (Attn: Prof. Winnie SO Wing-mui)
Documents to be Submitted along with the Application	Please include the following in Part IV Student's Self-introduction of the application form: - self-introduction; - expectations of the programme; and - area(s) of interest (i.e. Education/ Environment/ Science)# in guided enquiry

Enquiry	Miss Vivian YUNG Wai-yan, The Education University of Hong Kong Tel No.: 2948 8680 Email: vyung@eduhk.hk
Date of Announcement of Result	By May 2021 (tentative)

 # Preliminary Inquiry Topics on the 3 Areas of Study:

Areas of Study	**Preliminary Inquiry Topics**
Education	- School students' interests in STEM careers - Metacognitive understanding of peer's inquiry work
Environment	- A study of the natural environment in Hong Kong - Public perception and support on waste reduction strategies - A survey on sustainable lifestyles - Geology and built environment
Science	- Dialogue between science and religion - The philosophy of science - The ethics of artificial intelligence (AI)

Gifted Education Fund: Off-school Advanced Learning Programmes

Programme No. 2020-10 (For primary students)

Title of Programme	**To Learn AI-based Real Problems Solving Skills in a Playful Environment for Gifted Students**
Programme Provider	Department of Computing and Decision Sciences, Lingnan University
Theme	STEM-related Mentorship Programme
Maximum No. of Participants and Class Level in the 2020/21 School Year	30 students (Primary 2-4)
Pre-requisite	Applicants should possess basic computer programming knowledge.
Programme Duration	About 10 months
Medium of Instruction	Course Material: English Class teaching/ Discussion: English supplemented with Cantonese
Objectives	• To equip gifted students with the knowledge and skills of creating machine learning models through the application of computer games; • To enable the students to apply Artificial Intelligence to solve real-world problems in a playful environment by using an innovative education model; and • To nurture positive values and attitudes among students so that they would gain perseverance in facing adversities and problems
Programme Outline*	This programme aims to equip gifted students at the primary level with the knowledge and skills of creating machine learning, and nurture positive values and attitudes such as perseverance in facing adversities and problems. The programme consists of three phases. Phase I • Small-class teaching (12 meetings, 1 hour each) on 5 topics for students to acquire basic knowledge and skills of machine learning including how to train a computer to recognize numbers, images, texts, sounds and also to control a coding education robot. Each student will hand in a self-designed control system of a coding education robot and a summary of the system by the end of this phase. Phase II • Hands-on projects (16 meetings, 1 hour each) related to image

	recognition system design, implementation and testing. Students will first study a sample Python programme and learn how to train the model to differentiate, for example, a cat and a dog. They will then modify the programme and extend its functions to cover other objects. By the end of this phase, each student will hand in the designed image recognition system and a summary of the functions of the system. Phase III • Hands-on projects (12 meetings, 1.5 hour each) related to real-world applications of machine learning. Sample programmes, e.g. face recognition, will be introduced to illustrate how machine learning can be applied in daily life such as unlocking a mobile phone. Students will work in groups, apply machine learning technology and make use of their creative thinking to build AI models for real-world tasks. Students will submit a designed model, a relevant summary report and give a presentation in groups by the end of the programme. * In view of the COVID-19 epidemic, some sessions of the programme may be conducted online.
Admission Fee	Free of charge
Application method	Application form can be downloaded from the following webpage: https://www.edb.gov.hk/en/curriculum-development/curriculum-area/gifted/ge_fund/gef/osalp.html Please complete the application form and send it by post on or before 15 April 2021 (now extended to 30 April) to the following address: Department of Computing and Decision Sciences SEK212 Simon and Eleanor Kwok Building Lingnan University Tuen Mun, New Territories (Attn: Prof. Eric SEE-TO Wing-kuen)
Documents to be submitted along with the application	• Evidence of Other Learning Experiences (if any)
Enquiry	Prof. Eric SEE-TO Wing-kuen or Dr Emily WANG Xiaoxi (Department of Computing and Decision Sciences, Lingnan University) Tel No.: 2616 8109 (Prof. SEE-TO) / 9087 3681 (Dr WANG) Email: ericseeto@ln.edu.hk
Date of Announcement of Result	By May 2021 (tentative)