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Biotechnology Course (Level III)

Biotechnology Laboratory: From Classic to Frontiers (Phase I)

Instructors from Creative Education Unit, The Hong Kong Federation of Youth Groups



Application Deadline
28 Aug 2023 12:00 noon

Result Release
6 Sep 2023

Intended Learning Outcomes

Upon completion of the programme, participants should be able to:

1. elaborate the basic knowledge in molecular biology, including central dogma, protein synthesis and targeting, DNA replication, mutations and genetics;
2. explain the basic experimental design, including variables, fair test and control;
3. confident in using basic equipment, including microscope, pipette, size exclusion column chromatography;
4. Perform molecular biological experiments, including DNA electrophoresis, incubation of bacteria, transformation and column chromatography;
5. realize the concerns of bioethical issues.

◆ Introduction

The programme consists of three phases. There are 6 sessions in Phase I that equip students' basic essential knowledge in molecular biology, genetic engineering and biotechnology. Participants will learn how to use various experimental equipment and skills through hands-on practical, including DNA electrophoresis, incubation of bacteria and transformation. A self-learning platform will also be provided to enhance participants' related extension knowledge as well as their awareness of bioethical issues.

This programme is organized by Creative Education Unit (CE) of the Hong Kong Federation of Youth Groups (HKFYG), which offers interactive exploratory learning platform with wide ranges of programmes for 15 years, including STEM workshops, carnivals, talent trainings, competitions and scholarships.

Phase II and Phase III are tentatively scheduled as below:

Phase II: Saturdays from 11 Nov to 25 Nov 2023

Phase III: Saturdays from 2 Dec to 16 Dec 2023

Students with satisfactory performance in phase I would be selected to advance to phase II & III. Please reserve your time. Detailed schedule is on next page.

◆ Schedule (Phase I)

Session	Date	Time	Venue
1	7 Oct	10:00 a.m. – 1:00 p.m.	Room 211, 2/F, 5W Building, Phase 1, Hong Kong Science Park, N.T. (Location)
2	7 Oct	2:00 p.m. – 5:00 p.m.	
3	14 Oct	10:00 a.m. – 1:00 p.m.	
4	14 Oct	2:00 p.m. – 5:00 p.m.	
5	21 Oct	10:00 a.m. – 1:00 p.m.	
6	21 Oct	2:00 p.m. – 5:00 p.m.	

Total 9 hours of pre/post class self-learning on online platform is required on during 1-6 Oct, 8 – 13 Oct, 15-20 Oct.

◆ Target Participants

- S1 to S6 HKAGE student members in 2023/24
- Class size: 36
- Priority will be given to biology students

◆ Pre-requisite

Students should:

- have prior knowledge on DNA structure and cell biology

◆ Certificate

E-Certificate will be awarded to participants who have:

- attended at least 5 sessions; and
- completed all the assignments with satisfactory performance

◆ Screening

Please answer the screening question in the online application form.

*The screening question is designed to help the applicant understands the course level and the course content. The question must be answered by the student applicant and it can only be attempted once. The answer cannot be changed once the application is submitted. Selection is based on students' performance in answering the question. Only students who can demonstrate motivation and the knowledge of biotechnology in the screening question can be enrolled in the programme

◆ Medium of Instruction

Cantonese with English Handouts
(Supplemented with Chinese)

◆ Phase II & III Schedule

Phase II & III aim to equip students with advanced techniques in experiments, simulations, computer analysis, and research.

Students with satisfactory performance in phase I would be selected to advance to phase II & III. Below is the tentative schedule of phase II & III. Please reserve your time.

Phase II Schedule (Tentative)

Session	Date	Time	Venue
1	11 Nov	10:00 a.m. – 1:00 p.m.	Room 211, 2/F, 5W Building, Phase 1, Hong Kong Science Park, N.T. (Location)
2	11 Nov	2:00 p.m. – 5:00 p.m.	
3	18 Nov	10:00 a.m. – 1:00 p.m.	
4	18 Nov	2:00 p.m. – 5:00 p.m.	
5	25 Nov	10:00 a.m. – 1:00 p.m.	

Total 10 hours of pre/post class self-learning on online platform is required on during 6-10, 13-17, 20-24 Nov

Phase III Schedule (Tentative)

Session	Date	Time	Venue
1	2 Dec	10:00 a.m. – 1:00 p.m.	Room 211, 2/F, 5W Building, Phase 1, Hong Kong Science Park, N.T. (Location)
2	9 Dec	10:00 a.m. – 1:00 p.m.	
3	16 Dec	10:00 a.m. – 1:00 p.m.	
4	16 Dec	2:00 p.m. – 5:00 p.m.	

Total 12 hours of pre/post class self-learning on online platform is required on during 27 Nov – 1 Dec, 4-8, 11-15 Dec