

Subject Plan of Biology (20-21)

1. Aims

This subject is to provide learning experiences through which students will acquire or develop the necessary biological knowledge and understanding, scientific process skills, values, and attitudes, for their personal development, for coping with a dynamically changing society, and for contributing towards a scientific and technological world.

1.1 For their personal development, students will be able to enquire, think and reason scientifically and creatively

1.2 For coping with a changing society, students will be able to develop an interest in, and enjoyment of, the study of the living world to prepare themselves to become life-long learners in the related fields of science and technology

1.3 For contributing towards a scientific and technological world, students will be able to develop an attitude of contributory responsibility, including a strong sense of commitment to conserve, protect and maintain the quality of all environments for future generations

1.4 To fulfill the needs of STEM talents, students will be able to practice their STEM-related abilities during the study of this subject through different co-curricular and extra-curricular activities.

2. Situational Analysis

2.1 Strengths

2.11 The panel members are familiar with the DSE syllabus and have in-depth knowledge of the biotechnology electives which facilitates teaching and learning.

2.12 Collaborations between different universities and schools were established. Teaching and learning resources can be shared among the community and provide adequate support to the students.

2.13 The teaching and learning mode of the panel was transformed and the teaching time is more flexible. More in-class activities can be arranged.

2.14 Panel members are familiar with online learning and teaching tools. A comprehensive online learning platform has been developed for the students' self-learning and resource sharing.

2.2 Weaknesses

2.21 The learning attitude of some senior form students are passive and lack of self-discipline. The situation is worsening during school suspension.

2.22 Learner diversity is large among students. Especially the two blocks of biology classes have a huge difference in ability, learning pace, and learning attitude.

2.23 The language ability of some senior students is weak. This poses great difficulties for the students to attempt the essay type and structural questions in the HKDSE exam.

2.3 Opportunities

2.31 Under the promotion scheme of STEM education, more resources can be allocated for the implementation of learning activities and improving facilities.

2.32 Several external funding were received and more resources are available for developing extra/co-curriculum activities for the panel.

2.4 Threats

2.41. The HKDSE Biology SBA is under transformation. Teachers and students need to adapt to change.

2.42 The new subject streaming policy further increases the learner's diversity in the classroom.

2.43 School suspension due to social movement and COVID19 pandemic poses a great threat to daily teaching and learning schedule.

3. **Major concerns of the current year**

In response to the 1st major concern of the school:

3.1 Catering for learner diversity in senior form.

3.2 Developing and establishing STEM education for the subject.

In response to the 3rd major concern of the school:

3.3 To strengthen the cooperation between subject panel members. Establish a platform for the sharing of teaching resources and experience.

3.4 Encouraging professional development of panel members.

4. **Strategies / Tasks**

Major concerns	Strategies / Tasks	Success Criteria	Methods of Evaluation
(3.1)	<ul style="list-style-type: none"> ♦ Provision of afterschool remedial support and enhancement programs to meet students' diverse learning needs ♦ Explore and implement teaching strategies to cater for learner diversity ♦ Develop a new set of learning notes to facilitate the learning of students ♦ Make use of online platforms to facilitate the student's learning, such as an online tutorial, self-learning programs, and online assessments 	<ul style="list-style-type: none"> ♦ Less able students can meet the requirement in the after-quiz tutorial class ♦ More able students are willing to join the enhancement programs ♦ Teachers employ different teaching strategies such as questioning and PBL in classroom teaching ♦ Students can make use of the teaching notes as a daily learning resource ♦ Students are motivated to attempt online learning activities 	<ul style="list-style-type: none"> ♦ Students' performance in assessments ♦ Students' engagement in classroom learning ♦ Students' engagement in classroom learning ♦ Student's engagement in online learning activities

Major concerns	Strategies / Tasks	Success Criteria	Methods of Evaluation
(3.2)	<ul style="list-style-type: none"> ◆ Students will be asked to design and conduct scientific investigation. They should identify the problem and devise a plan of investigation. These foster the development of scientific investigative skills and generic skills such as creativity, critical thinking, communication and problem solving ◆ Elite students are encouraged to participate in competitions and subject-related activities to enrich their learning experience ◆ Adopt different learning activities (e.g. field trip and workshops) to help students to enrich their scientific understanding, attitudes, value and generic skills 	<ul style="list-style-type: none"> ◆ Students participate actively in the discussion ◆ Most of the students can handle the practical task independently ◆ Investigative reports of practical tasks by students are maintained at a good standard ◆ Students show increased interest in the subject ◆ Students can apply the subject content into the STEM application ◆ Students participate actively and perform well in the activities 	<ul style="list-style-type: none"> ◆ Students' performance in practical tasks ◆ Students' investigative practical reports ◆ Practical skills and abilities of students ◆ Students' attitude during the course of activities ◆ Students' performance in the activities. ◆ Students' performance in the activities

Major concerns	Strategies / Tasks	Success Criteria	Methods of Evaluation
(3.3)	<ul style="list-style-type: none"> • Regular meeting and lesson preparation sessions between panel members • Lesson observation between panel members • Cross block teaching arrangement • A constant evaluation on the academic performance to adjust the teaching strategies • Teachers are encouraged to participate in external organizations and professional bodies for further exposure and resources seeking 	<ul style="list-style-type: none"> • A cooperation with positive atmosphere and attitude is established between panel members • Increased communication and sharing of teaching strategies and experience • The learning atmosphere and participation of students during the lessons is good • Teachers are proactively seeking opportunities to enroll in such duties. 	<ul style="list-style-type: none"> • Working atmosphere during the lesson preparation. • Quality of teaching and learning in class • Questionnaire for students on learning and teaching. • Teachers' feedback • Panel coordinator's evaluation