I. Aims

1.1 To provide knowledge and develop basic study skills of Physics.

1.2 To help students develop interest, motivation and a sense of achievement in their study of Physics.

1.3 To develop an appreciation of the nature and development in Physics, and to create an awareness of Physics in everyday life, such as the applications of Physics in the fields of engineering and technology.

1.4 To establish a conceptual framework for Physics and provide an understanding of its methodology.

1.5 To encourage a balance between an experimental and a theoretical approach to Physics.

1.6 To develop skills relevant to the applications of Physics, such as experimental design, experimental technique, problem solving, mathematical analysis, analytical and critical appraisal and communication.

1.7 To help students acquire a sense of moral and social values and readiness to becoming responsible citizens in a changing world.

II. Issues to be addressed

2.1 Strengths

2.1.1 Most students show interest in Physics because they appreciate the usefulness and effectiveness of this subject in explaining everyday phenomenon.

2.1.2 Experimental sessions are welcomed by most students.

2.1.3 Teachers in the panel always prepare lots of supplementary exercises and quizzes to drill the students. Certainly, this ensures that they understand the topics thoroughly.

2.1.4 Teaching materials and exercises are well prepared by teachers.

2.1.5 The panel keeps a stock of teaching materials including VCD, video tapes, reference books, OHP transparencies and past papers.

2.1.6 The laboratory technician is well-experienced and professionally qualified. She is very helpful in preparing experiments and making simple experimental kits.

2.1.7 Teachers in the panel are willing to develop themselves by attending courses and seminars.

2.2 Weaknesses

2.2.1 Form 4 and lower 6 students face the language obstacle that they need to transit from CMI to EMI in studying physics.

2.2.2 Students are mostly passive and lack self-motivation.

2.2.3 Students have difficulties in applying the concepts in solving
problems.

2.2.4 Students are weak in organizing their own plans of study and therefore effectiveness of learning is not remarkable.

III. Objectives

Students should be able to

3.1 acquire knowledge of the laws, principles and concepts in Physics;
3.2 understand the relevant applications of Physics in society and everyday life;
3.3 apply Physics knowledge in problem solving and experimental investigation using qualitative and numerical, theoretical and practical techniques;
3.4 understand the inter-relationship between the principles and laws;
3.5 perform common laboratory techniques with control and precision, observe and report accurately;
3.6 understand the contribution of Physics to society.

VI. Implementation Plan

4.1 Panel meetings are held regularly to discuss subject matters and teachers are encouraged to participate in seminars and workshops.
4.2 Class visits will be organized between the panel members.
4.3 Teacher appraisal will be completed by the panel chairperson.
4.4 Teachers in the panel are encouraged to share the exercises, quiz materials and different strategies used in teaching.
4.5 Educational visits will be arranged.
4.6 Improvement in weakness (1)
   4.6.1 Bridging programs will be offered to all form 4 and lower 6 students at the beginning of the academic year and during summer vacation.
   4.6.2 The teaching schedule of F.4 and L.6 physics will be revised to cater the adaptation of students. The pace of teaching are probably 'slow' at the beginning but 'accelerates' gradually to normal speed in order to cover the syllabus.
4.7 Improvement in weakness (2)
   4.7.1 Theoretical ideas will be reinforced through appropriate experiments demonstrated by teachers or performed by the students themselves.
   4.7.2 In teaching new topics, teachers will give a brief introduction and daily life examples of the topics to draw the students’ attention and interest. Teachers will also highlight the points which the students should pay attention to.
   4.7.3 IT will be used in teaching in order to arouse the interest of the students.
4.8 Improvement in weakness (3)
   4.8.1 Teachers will help students to identify the answers from information
provided. There are worked examples with explanation to help students understand the topics.

4.8.2 CD ROM with experiment simulation and video tapes on experiments may be adopted by teachers to show some complicated experiments which may not be done in the lessons.

4.9 Improvement in weakness (4)

4.9.1 Homework assignments, quizzes and supplementary exercises will be given regularly to assess students' progress in the subject. These will also serve as feedback to teachers.

4.9.2 Students are encouraged to form study group by themselves.

4.9.3 Revision classes will be rearranged before the last examination to help students to do revisions efficiently.
V. Gantt Chart

<table>
<thead>
<tr>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
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</thead>
<tbody>
<tr>
<td>Panel Meeting</td>
<td>Arrangement of Study Groups</td>
<td>Educational Visit</td>
</tr>
<tr>
<td>- to set up goals of the coming academic year and discuss means of assessment etc.</td>
<td>- on voluntary basis, to strengthen students' learning and studying practice.</td>
<td>- the target is probably the Hong Kong Royal Observatory or the laboratory / lecture sessions organized by local universities, the aim is to arouse students' interest in physical science.</td>
</tr>
<tr>
<td>Bridging programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- will be offered to all form 4 and lower 6 students at the beginning of the academic year and during summer vacation.</td>
<td></td>
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</tr>
<tr>
<td>Dec</td>
<td>Jan</td>
<td>Feb</td>
</tr>
<tr>
<td>Class Visit F.5 and L.6</td>
<td>Panel Meeting</td>
<td>Joining External Competitions</td>
</tr>
<tr>
<td>- assurance of standard of tuition and discussion on teaching methods.</td>
<td>- to evaluate the pace of teaching schedule and the results of assessment in first term.</td>
<td>- Higher form students are encouraged to join external Science Competitions in order to arouse their interest in studying physics.</td>
</tr>
<tr>
<td>Scrutiny of Ex Books</td>
<td></td>
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<tr>
<td>- to understand the academic progress of students and their ability in tackling problems.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>Jul</td>
<td></td>
</tr>
<tr>
<td>Revision classes</td>
<td>Panel Meeting</td>
<td></td>
</tr>
<tr>
<td>- will be rearranged before the last examination to help students to do revisions efficiently.</td>
<td>- to evaluate achievement of goals set up in September.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- to evaluate the effective of teaching throughout the whole year.</td>
<td></td>
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<tr>
<td></td>
<td>- focus on the tentative goals to be implemented in the next academic year.</td>
<td></td>
</tr>
</tbody>
</table>
VI. Evaluation

6.1 [Ref: item 4.6]
Questionnaires from students will be collected after the bridging programs. An expectation of above 50% of students expressing the usefulness of the program serves as a successful evaluator.

6.2 [Ref: item 4.7]
The level of involvement of students in lessons, practical sessions and are observed by teachers. The overall impression of subject teachers serves as an evaluator.

6.3 [Ref: item 4.8]
To evaluate the change of learning attitude / motivation of students in physics:
the difference between the year averages of students' score in physics in two academic year is computed, an increment of 3% of the average indicates the achievement of the goal.

6.4 [Ref: item 4.9]
The level of involvement of students in study groups and revision classes are observed by teachers. The overall impression of subject teachers serves as an evaluator.