1. Instructors

<table>
<thead>
<tr>
<th>Instructors</th>
<th>Office</th>
<th>Extension</th>
<th>E-mail address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randy Y.C. POON (Course Coordinator)</td>
<td>Room 5526</td>
<td>x8703</td>
<td><a href="mailto:rycpoon@ust.hk">rycpoon@ust.hk</a></td>
</tr>
<tr>
<td>Pingbo HUANG</td>
<td>Room 5463</td>
<td>x7305</td>
<td><a href="mailto:bohuangp@ust.hk">bohuangp@ust.hk</a></td>
</tr>
</tbody>
</table>

2. Teaching Assistant
NA

3. Meeting Time and Venue

Date/Time:
- Monday: 16:30-17:50
- Friday: 12:00-13:20

Venue: Room: 4619, Enterprise Center

4. Course Description

Cellular regulation is at the heart of proper function of an organism. An understanding of the molecules and pathways that ensure proper cellular regulation is fundamental in comprehending the normal physiology of the cells and the causes of various disorders. This undergraduate core course provides backgrounds and principles in various fields of cellular regulation. In-depth discussion of selected topics is also provided to give students an appreciation of the complexity and state-of-the-art of current research. Through interactive lectures, topics including signal transduction, cell adhesions, cell differentiation, cell cycle control, checkpoints, apoptosis, aging, and cancer are covered. Moreover, timely special topics in biomedical sciences are included to increase the awareness of current trends in scientific research and application.

5. Intended Learning Outcomes

Course goals: This course provides students with the knowledge of topics in the molecular basis of cellular regulation.

On successful completion of this course, students are expected to be able to:
1. Explain the fundamental principles, general approaches and complexities in the discoveries made in the field of cellular regulation.
2. Communicate effectively in writing the principles and details of the field of cellular regulation.
3. Evaluate the principles and applications of methodology and experimental design in cellular regulation and apply them to other similar areas of study.

6. Assessment Scheme
Students are assessed by written open-book examinations at mid-term and at the end of the course. Both short questions of analytical nature and long essay questions are included in the examination. Emphasis is placed on the genuine comprehension of the subject, organization, presentation, critical analysis, and be able to apply the principles learned to solve related problems. Effective written skills, organization, and critical analysis are expected from the students.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Assessing Course ILOs</th>
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<tbody>
<tr>
<td>mid-term exam</td>
<td>1-3</td>
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<tr>
<td>final exam</td>
<td>1-3</td>
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7. Student Learning Resources
Lecture notes will be provided.

8. Teaching and Learning Activities
This course is primarily delivered through interactive lectures. Students are expected to read course materials, references, and ask questions in lectures. Through interactive discussion with the lecturers and each other, the students are able to understand the experimental approaches, methodologies, themes, and state-of-the-art development of topics in cellular regulation. Students are expected to think critically and ask questions on various aspects of the lectures. An essay-based written open-book examination at the end of the course further encourages the students to understand the principles of the subject and to apply them to solve related problems.

9. Course Schedule

Pingbo Huang:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Feb 3</td>
<td>Overview of the molecular biology of cellular regulation</td>
</tr>
<tr>
<td>Feb 6</td>
<td>Signaling Transduction</td>
</tr>
<tr>
<td>Feb 10</td>
<td>Signaling Transduction</td>
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<tr>
<td>Feb 13</td>
<td>Signaling Transduction</td>
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<tr>
<td>Feb 17</td>
<td>Signaling Transduction</td>
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<tr>
<td>Feb 20</td>
<td>Signaling Transduction</td>
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<tr>
<td>Feb 24</td>
<td>Cell adhesions</td>
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Feb 27  Cell adhesions
Mar 3   Cell adhesions
Mar 6   Cell differentiation
Mar 10  Cell differentiation
Mar 13  Cell differentiation
Mar 17  **Mid-term exam**

**Randy Y.C. Poon:**
Mar 20  Cell cycle control
Mar 24  Cell cycle control
Mar 27  Cell cycle control
Mar 31  Cell cycle control
Apr  3  Maintenance of genome stability
Apr  7  **Public holiday**
Apr 10  **Public holiday**
Apr 14  Maintenance of genome stability
Apr 17  Maintenance of genome stability
Apr 21  Apoptosis
Apr 24  Apoptosis
Apr 28  Apoptosis
May  1  **Public holiday**
May  5  Telomere in normal replication, senescence, and cancer
May  8  Telomere in normal replication, senescence, and cancer

NB: Since the topics are highly integrated, all the estimated time and order are approximations.