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: 10:30-11:50
   - Wednesday: 10:30-11:50

   **Venue:** Room 2407

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.

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<tr>
<th>Assessment</th>
<th>Assessing Course ILOs</th>
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<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
Feb 5    Overview of the molecular biology of cellular regulation
Feb 7    Signaling Transduction
Feb 12   Signaling Transduction
Feb 14   Signaling Transduction
Feb 19   Public holiday
Feb 21   Signaling Transduction
Feb 26   Signaling Transduction
Feb 28  Cell adhesions  
Mar  5  Cell adhesions  
Mar  7  Cell adhesions  
Mar 12  Cell differentiation  
Mar 14  Cell differentiation  
Mar 19  Cell differentiation  
Mar 21  **Mid-term exam**

Randy Y.C. Poon:
Mar 26  Cell cycle control  
Mar 28  Cell cycle control  
Apr  2  **Public holiday**  
Apr  4  **Mid-term break**  
Apr  9  Cell cycle control  
Apr 11  Cell cycle control  
Apr 16  Maintenance of genome stability by checkpoints  
Apr 18  Mechanisms of cell division  
Apr 23  Programmed cell death - the functions of apoptosis  
Apr 25  Molecular mechanisms of apoptosis  
Apr 30  Molecular mechanisms of apoptosis  
May  2  Telomere in normal replication, senescence, and cancer  
May  7  Telomere in normal replication, senescence, and cancer  
May  9  Special current topics

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