

## Tamkang University Academic Year 110, 1st Semester Course Syllabus

Course Title	INTRODUCTION TO CELL BIOLOGY	Instructor	CHERN MING-KAI
Course Class	TSAXB2A BACHELOR'S PROGRAM IN ADVANCED MATERIALS SCIENCE, 2A	Details	<ul style="list-style-type: none"> <li>◆ General Course</li> <li>◆ Selective</li> <li>◆ One Semester</li> </ul>
Relevance to SDGs	SDG3 Good health and well-being for people		
<b>Departmental Aim of Education</b>			
<ul style="list-style-type: none"> <li>I. Enrich the fundamental knowledge of advanced material sciences.</li> <li>II. Emphasize the ability of self-expression.</li> <li>III. Strengthen the ability to experiment and team spirit.</li> <li>IV. Develop an international perspective and international exchanges.</li> </ul>			
<b>Subject Departmental core competences</b>			
<ul style="list-style-type: none"> <li>A. Possess a fundamental knowledge of mathematics, physics, chemistry and biology. (ratio:60.00)</li> <li>B. Cultivate professional knowledge, experimental skills and the applications of nano, optoelectronic, biomedical and macromolecular materials.(ratio:40.00)</li> </ul>			
<b>Subject Schoolwide essential virtues</b>			
<ul style="list-style-type: none"> <li>2. Information literacy. (ratio:20.00)</li> <li>3. A vision for the future. (ratio:20.00)</li> <li>5. Independent thinking. (ratio:40.00)</li> <li>6. A cheerful attitude and healthy lifestyle. (ratio:20.00)</li> </ul>			

Course Introduction	This course introduces what the life will be performed from the point of view of a cell. The contents include the structures and functions of the cell and related application of cell biology.
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**The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.**

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

- I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.
- II. Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.
- III. Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	To understand the structures and functions of the cell and related application of cell biology.	Cognitive

**The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment**

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	AB	2356	Lecture, Discussion	Testing, Study Assignments, Discussion(including classroom and online)

**Course Schedule**

Week	Date	Course Contents	Note
1	110/09/22 ~ 110/09/28	Introduction to Cell Biology	Including the rules for the course and class
2	110/09/29 ~ 110/10/05	Methods in Cell Biology I	
3	110/10/06 ~ 110/10/12	Methods in Cell Biology II	
4	110/10/13 ~ 110/10/19	Cellular Membranes I	
5	110/10/20 ~ 110/10/26	Cellular Membranes II	

6	110/10/27 ~ 110/11/02	Mitochondrial Structure and Function	
7	110/11/03 ~ 110/11/09	Chloroplast Structure and Function	
8	110/11/10 ~ 110/11/16	The Extracellular Matrix and Cell Interactions	
9	110/11/17 ~ 110/11/23	Midterm Exam Week	
10	110/11/24 ~ 110/11/30	Cellular Organelles and Membrane Trafficking I	
11	110/12/01 ~ 110/12/07	Cellular Organelles and Membrane Trafficking II	
12	110/12/08 ~ 110/12/14	The Cytoskeleton I	
13	110/12/15 ~ 110/12/21	The Cytoskeleton II	
14	110/12/22 ~ 110/12/28	Cell Division	
15	110/12/29 ~ 111/01/04	Cell Signaling Pathways	
16	111/01/05 ~ 111/01/11	Cancer	
17	111/01/12 ~ 111/01/18	Immunity	
18	111/01/19 ~ 111/01/25	Alternative Curriculum	
Requirement	Students should obey the rules accordingly.		
Teaching Facility	Computer, Projector		
Textbooks and Teaching Materials	Thrive in Cell Biology (Thrive In Bioscience Revision Guides) by Qiuyu Wang, Chris Smith, Emma Davis (2013)_0199697329		
References	Essential Cell Biology 5e, by Bruce Alberts, Karen Hopkin, Alexander D. Johnson, David Morgan, Martin Raff (2018, W. W. Norton & Company) Molecular Cell Biology 8e, by Harvey Lodish, Arnold Berk, Chris A. Kaiser (2016) Karp's Cell and Molecular Biology 9e, by Gerald Karp (2020)		
Number of Assignment(s)	(Filled in by assignment instructor only)		
Grading Policy	◆ Attendance :            %    ◆ Mark of Usual : 50.0 %    ◆ Midterm Exam : 25.0 % ◆ Final Exam :    25.0 % ◆ Other (   ) :            %		

Note	<p>This syllabus may be uploaded at the website of Course Syllabus Management System at <a href="http://info.ais.tku.edu.tw/csp">http://info.ais.tku.edu.tw/csp</a> or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at <a href="http://www.acad.tku.edu.tw/CS/main.php">http://www.acad.tku.edu.tw/CS/main.php</a>.</p> <p>※ <b>Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</b></p>
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