# 國立東華大學

## 教學計劃表　Syllabus

| 課程名稱(中文)<br>Course Name in Chinese | 細胞生物學AB | | | 學年/學期<br>Academic Year/Semester | | 112/1 |
|---|---|---|---|---|---|---|
| 課程名稱(英文)<br>Course Name in English | Cell Biology | | | | | |
| 科目代碼<br>Course Code | LF__2090AB | 系級<br>Department & Year | 學二 | 開課單位<br>Course-Offering Department | | 生命科學系 |
| 修別<br>Type | 學程 Program | 學分數/時間<br>Credit(s)/Hour(s) | | 4.0/4.0 | | |
| 授課教師<br>Instructor | /林國知/袁大鈞 | | | | | |
| 先修課程<br>Prerequisite | | | | | | |

### 課程描述　Course Description

To teach students to understand the basic structure of cells and the molecular mechanism of life phenomena.
Based on the records of student performance, the last 20% (or above) of the students might be failed.

### 課程目標　Course Objectives

了解細胞生物學之基本概念。

| | 系專業能力<br><br>Basic Learning Outcomes | 課程目標與系專業能力相關性<br>Correlation between Course Objectives and Dept.'s Education Objectives |
|---|---|---|
| A | 具備生命科學相關學科之基礎知識Having the basic knowledge of life science. | ● |
| B | 具備邏輯分析與解決問題的能力Having the capabilities of logical analysis and problem solving | ○ |
| C | 具備資料整合、數據分析與書面及口頭報告之能力Having the capabilities of data integration and analysis, and the skills of written and poster presentation. | ○ |
| D | 具備終生學習的能力Having the capability of lifelong learning. | |

圖示說明Illustration ：● 高度相關 Highly correlated ○中度相關 Moderately correlated

### 授 課 進 度 表 Teaching Schedule & Content

| 週次Week | 內容 Subject/Topics | 備註Remarks |
|---|---|---|
| 1 | Ch 1: A preview of Cell Biology<br>Ch 2: The chemistry of the cell | Kuo-Chih Lin |
| 2 | Ch 3: The macromolecules of the cell | Kuo-Chih Lin |
| 3 | Ch 7: Membrane structure | Kuo-Chih Lin |
| 4 | Ch 4 Cells and organelles<br>Ch 12: The endomembrane system | Kuo-Chih Lin |
| 5 | 10/9 National day (holiday)<br>10/12 Instructor KC Lin's first exam | Kuo-Chih Lin |
| 6 | Ch 12: The endomembrane system<br>Ch 10 & 11: Chemiosmotic coupling model of ATP synthesis | Kuo-Chih Lin |

| 7 | Ch 16, 19, 20: Protein targeting and sorting (Ch 16.4, 19.5, 20.4) | Kuo-Chih Lin |
|---|---|---|
| 8 | Ch 8: Transport across membrane | Kuo-Chih Lin |
| 9 | 11/6 Instructor KC Lin's second exam<br>11/9 Instructor Ta-ChunYuan's turn to start the lecture<br>Ch 13: Cytoskeletal systems | Kuo-Chih Lin<br>Ta-Chun Yuan |
| 10 | Ch 13: Cytoskeletal systems | Ta-Chun Yuan |
| 11 | Ch 14: Cellular movement:: motility and contractility | Ta-Chun Yuan |
| 12 | Ch 15: Beyond the cell : Extracellular structures | Ta-Chun Yuan |
| 13 | 12/4 Instructor Ta-ChunYuan's first exam<br>Ch 22: Signal transduction mechanisms: I. Electrical and synaptic signaling in neurons | Ta-Chun Yuan |
| 14 | Ch 23: Signal transduction mechanisms: II. Messengers and receptors | Ta-Chun Yuan |
| 15 | Ch 23: Signal transduction mechanisms: II. Messengers and receptors | Ta-Chun Yuan |
| 16 | Ch 24: The cell cycle and mitosis | Ta-Chun Yuan |
| 17 | 1/1 New year (holiday)<br>Ch 24: The cell cycle and mitosis | Ta-Chun Yuan |
| 18 | 1/8 Instructor Ta-ChunYuan's second exam | Ta-Chun Yuan |

## 教 學 策 略  Teaching Strategies

☑ 課堂講授 Lecture          ☐ 分組討論Group Discussion      ☐ 參觀實習 Field Trip

☐ 其他Miscellaneous:

## 教 學 創 新 自 評 Teaching Self-Evaluation

創新教學(Innovative Teaching)

☐ 問題導向學習(PBL)          ☐ 團體合作學習(TBL)          ☐ 解決導向學習(SBL)

☐ 翻轉教室 Flipped Classroom          ☐ 磨課師 Moocs

社會責任(Social Responsibility)

☐ 在地實踐Community Practice          ☐ 產學合作 Industy-Academia Cooperation

跨域合作(Transdisciplinary Projects)

☐ 跨界教學Transdisciplinary Teaching          ☐ 跨院系教學Inter-collegiate Teaching

☐ 業師合授 Courses Co-taught with Industry Practitioners


其它 other:

## 學期成績計算及多元評量方式 Grading & Assessments

| 配分項目<br>Items | 配分比例<br>Percentage | 多元評量方式 Assessments | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 測驗<br>會考 | 實作<br>觀察 | 口頭<br>發表 | 專題<br>研究 | 創作<br>展演 | 卷宗<br>評量 | 證照<br>檢定 | 其他 |
| 平時成績 General Performance | 0% | | | | | | | | |
| 期中考成績 Midterm Exam | 50% | ✓ | | | | | | | 林國知 50% |
| 期末考成績 Final Exam | 50% | ✓ | | | | | | | 袁大鈞 50% |
| 作業成績 Homework and/or Assignments | 0% | | | | | | | | |
| 其他 Miscellaneous (_____) | 0% | | | | | | | | |

### 評量方式補充說明
### Grading & Assessments Supplemental instructions

The final test score is based on the average of the scores of four exams.

### 教科書與參考書目（書名、作者、書局、代理商、說明）
### Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

Textbook :
  1. Becker's World of the Cell (10/E, 2022) by Hardin et al.

### 課程教材網址(含線上教學資訊,教師個人網址請列位於本校內之網址)
### Teaching Aids & Teacher's Website(Including online teaching information. Personal website can be listed here.)

### 其他補充說明 (Supplemental instructions)