

課程名稱：BMES423100分子細胞生物學 (Molecular and Cell Biology)

學分數：3

時間：Monday 7, 8, 9

地點：醫環系 R401

授課老師：張建文 (C.W. Chang)

助教：TBD

課程目標 (Purpose): To provide students with knowledge on the fundamentals of cell biology and its linking to applications in biomedical engineering and applied sciences. Specifically, this course will cover: (1) structure/function of cellular components; (2) cellular transport; (3) cell division and (4) cellular communication.

Schedule:

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| Lecture | Title   |
|---------|---|
| 1       | L1 Introduction   |
| 2       | L2 Chemical components of cells / Methods to study cell                               |
| 3       | L3-1 Membrane transport / Intracellular components                                    |
| 4       | L3-2 Intracellular transport  |
| 5       | L4 Cytoskeleton part 1: microfilaments  |
| 6       | L5 Cytoskeleton part 2: microtubules and intermediate filaments                       |
| 7       | L6 Cell division cycle  |
|         | <b>Mid-term exam</b>  |
| 8       | L7 Sex and genetics   |
| 9       | L8 Control of gene expression and gene analysis                                       |
| 10      | L9 Cell communication I   |
| 11      | L10 Cell communication II   |
| 12      | L11 Cellular communities: tissues   |
| 13      | L12 Special topics I: cell biology for tissue engineering and regenerative medicine e |
| 14      | L13 Special topics II: cell biology for tissue engineering and regenerative medicine  |
| 15      | L14 Cellular communities: stem cells and cancer                                       |
|         | <b>Final Exam</b>   |

Textbook:

Bruce Alberts et al., Essential Cell Biology. Garland Science.

Grading:

上課參與 + 小考 20% ; 報告 10 % ; 期中考 35 % ; 期末考 35 %