

# 100-1 大葉大學 選課版課綱

## 基本資訊

課程名稱	系統理論及於生物科技之應用	科目序號 / 代號	1373 / EDR5143
開課系所	電機工程學系博士班	學制 / 班級	研究所博士班1年1班
任課教師	吳幸珍	專兼任別	專任
必選修 / 學分數	選修 / 3	畢業班 / 非畢業班	非畢業班
上課時段 / 地點	(三)234 / H371	授課語言別	中文

## 課程簡介

This course is to let graduate understand the impact of system theory on drug design and medicine. Many rare diseases face gene mutation problems. We shall talk about such kinds of systems in class. A few such systems have been closely observed and carefully analyzed. The results indicate that these biological systems are flooded with feedback and feedforward loops. Some of the main high throughput measurement technologies and their applications in biology are also discussed. The related computational technologies for modeling and advanced biology concept are included in this class.

## 課程大綱

1. Introduction
  2. The Cell
  3. tumor and immune systems
  4. monitor-gene-expression-profile(paper)
  5. B-cell-lymphoma-identification(paper)
  6. Computational Analysis of Biochemical Systems
- Midterm
7. Models of Biochemical Systems
  8. From Maps to Equations
  9. Metabolic Flux Analysis/ Flux Balance Analysis
  10. Computer Simulation
  10. Final Exam.

## 基本能力或先修課程

no