**分子生物2013**

**醫學檢驗生物技術學系, NCKU**

**課程負責老師: 楊孔嘉 Room 5794; Tel: (06)-2353535 ext. 5787**

**陳百昇 Room 5795B ; Tel: (06)-2353535 ext. 6233**

**上課時間: 星期四 10:10-12:00 上課地點: 大三教室**

**課程簡介: 本課程介紹基因的基本結構及基因物質, 包括 DNA 及 RNA 調控的分子機轉。本課程含括三個主要部分: (1) 人類及其他物種的基因體，在基因結構與基因體的最新進展 (2) 基因功能與調控機轉，如：複製、基因跳躍、轉錄、剪接 (3) 特別專題，如：致癌機轉，基因研究方法等。**

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| **次序** | **日期(月/日)** | **上課內容** | **章節** | **上課老師** |
| **1** | **9/19** | **中秋節** | **1** |  |
| **2** | **9/26** | **Genes are DNA/The interrupted gene** | **1,4** | **陳百昇** |
| **3** | **10/3** | **DNA replication** | **13** | **楊孔嘉** |
| **4** | **10/10** | **國慶日** |  |  |
| **5** | **10/17** | **Repair Systems** | **5** | **陳百昇** |
| **6** | **10/24** | **Eukaryotic transcription** | **20** | **楊孔嘉** |
| **7** | **10/31** | **Transposable elements and retroviruses** | **17** | **陳百昇** |
| **8** | **11/7** | **Midterm-exam (range 1-7)** |  | **楊孔嘉** |
| **9** | **11/14** | **Prokaryotic Transcription** | **19** | **楊孔嘉** |
| **10** | **11/21** | **The operon/mRNA stability and localization** | **26,22** | **陳百昇** |
| **11** | **11/28** | **RNA splicing and processing** | **21** | **楊孔嘉** |
| **12** | **12/5** | **Eukaryotic transcription regulation** | **28** | **楊孔嘉** |
| **13** | **12/12** | **Translation** | **24,25** | **陳百昇** |
| **14** | **12/19** | **Epigenetic effects are inherited** | **29** | **楊孔嘉** |
| **15** | **12/26** | **Regulatory RNA** | **30** | **陳百昇** |
| **16** | **1/2** | **Presentation** |  | **陳百昇/楊孔嘉** |
| **17** | **1/9** | **Presentation** |  | **陳百昇/楊孔嘉** |
| **18** | **1/16** | **Final exam (range 9-15)** |  | **陳百昇** |

**Grading policy:**

**midterm exam 45%**

**final exam 45%**

**student presentation 10%**

**Textbook: Gene XI. Benjamin Lewin. 2013. Oxford University Press**

**Molecular Biology 2013**

**Department of Medical Laboratory Science and Biotechnology, NCKU**

**Course coordinator: KC Young, Room 5794; Tel: (06)-2353535 ext. 5787**

**PS Chen, Room 5795B ; Tel: (06)-2353535 ext. 6233**

**Time: Thur. 10:10-12:00 Place: 5776 room**

Description: The course introduces the fundamental structure of genes and the molecular mechanisms in regulation of genetic materials, including DNA and RNA. The course encompasses three parts: (1) the sequence of the human and other genomes and also with complete coverage of recent advances in gene structure and genomics; (2) the function and regulation of gene, including replication, transposon, transcription and splicing; (3) special topics involving epigenetic effects and molecular tools for studying genes.

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| **Class** | **date(m/d)** | **Topic** | **Chapter** | **Instructor** |
| **1** | **9/19** | **中秋節** |  |  |
| **2** | **9/26** | **Genes are DNA/The interrupted gene** | **1,4** | **PS Chen** |
| **3** | **10/3** | **Repair Systems** | **5** | **PS Chen** |
| **4** | **10/10** | **國慶日** |  |  |
| **5** | **10/17** | **DNA replication** | **13** | **KC Young** |
| **6** | **10/24** | **Eukaryotic transcription** | **20** | **KC Young** |
| **7** | **10/31** | **Transposable elements and retroviruses** | **17** | **PS Chen** |
| **8** | **11/7** | **Midterm-exam (range 1-7)** |  | **KC Young** |
| **9** | **11/14** | **Prokaryotic Transcription** | **19** | **KC Young** |
| **10** | **11/21** | **The operon/mRNA stability and localization** | **26,22** | **PS Chen** |
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| **16** | **1/2** | **Presentation** |  | **PS Chen / KC Young** |
| **17** | **1/9** | **Presentation** |  | **PS Chen / KC Young** |
| **18** | **1/16** | **Final exam (range 9-15)** |  | **PS Chen** |

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