Syllabus

普通分子生物學 (3 學分)

課號：P05U1010

授課老師：農化系 李平篤老師 (Parts I & II)

植微系 林長平老師 (Parts III & IV, 提供 PowerPoint 講義)

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Brief Contents

1. Welcome to molecular biology!

Part I The structure of Proteins, Nucleic Acids, and Macromolecular Complex

2. Macromolecules
3. Nucleic acids
4. The physical structure of protein molecules
5. Macromolecular interactions and the structure of complex aggregates

Part II Function of Macromolecule

6. The genetic material
7. DNA replication
8. Transcription
9. Translation
10. Mutations, mutagenesis, and DNA repair

Mid-Term Exam (9th week)

Part III Coordination of Macromolecular Function in Cells

11. Regulation of gene activity in prokaryotes (4 hr)
12. Regulation of gene activity in eukaryotes (4 hr)

13. Genomics and proteomics drive information-age biology (2 hr)

Part IV　Experimental Manipulation of Macromolecules

14. Transposons, plasmids, and bacteriophage (8 hr)

15. Recombinant DNA and genetic engineering: molecular tailing of genes (2 hr)

16. Molecular biology is expending its reach (4 hr)

Final Exam (18th Week)

教科書：

Malacinski, G.. M.　2003.　Essentials of Molecular Biology, 4th ed., Jones and Bartlett Publishers