

## 98-2 Preliminary Syllabus, Da-Yeh Univ

| Information       |               |                       |                |
|-------------------|---------------|-----------------------|----------------|
| Title             | 分子生物學實驗       | Serial No. / ID       | 1044 / MBI3091 |
| Dept.             | 分子生物科技學系      | School System / Class | 大學日間部3年1班      |
| Lecturer          | 游志文           | Full or Part-time     | 專任             |
| Required / Credit | Required / 1  | Graduate Class        | NO             |
| Time / Place      | (二)789 / J515 | Language              | Chinese        |

| Introduction  |
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| The purpose of this course is to become familiar with basic techniques used in a molecular biology laboratory. In this course, there will be lectures associated with some of the labs. Therefore, students will learn both theory and practice behind the isolation and manipulation of DNA. The goal of this course will focus on the techniques such as DNA purification, DNA recombination, and molecular analysis. |

| Outline   |
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| 1 Purification of plasmid DNA   |
| 2 Restriction digest of plasmid DNA and gel electrophoresis                     |
| 3 Primer design and polymerase chain reaction (PCR)                             |
| 4 Extract DNA from agarose gel  |
| 5 DNA recombination   |
| 6 Competent cell preparation and transformation                                 |
| 7 Colony screening  |
| 8 Protein expression and purification   |
| 9 Midterm   |
| 10 Extraction and purification of cellular RNA/gel electrophoresis to check RNA |
| 11 reverse transcription PCR  |
| 12 Northern (1) ? gel electrophoresis and transfer                              |
| 13 Northern (2) ? label probe / hybridization                                   |
| 14 Northern (3) ? washing and development of blots                              |
| 15 SDS-PAGE   |
| 16 Western  |
| 17 Final  |

| Prerequisite    |
|-----------------|
| 1. Biology      |
| 2. Biochemistry |