

# 課程大綱

## Lecture #1:

PMS課程簡介  
鋪面網路養護管理系統(PNRMS)與美國ILLINET程式之應用  
(李英豪、李英明)

## Lecture #2:

PSR, PSI Concept  
AASHO Road Test  
ESAL Concept and Calculations

## Lecture #3:

Pavement Condition Index (PCI)  
Pavement Distresses  
ASTM D5340-93  
“Standard Test Method for Airport  
Pavement Condition Index Surveys”

## Lecture #4:

Demo of MicroPaver Program  
Introduction of Unix System  
Distribute Term Projects  
(道路與機場鋪面維修管理實作)

## Lecture #5:

### Pavement Management Process

(Haas, Chapter 1-3)

- Introduction
  - Application of Systems Concepts to Pavement Management
  - Basic Components of a PMS
- Demo of S-PLUS Program

## Lecture #6:

### Pavement Management Process

(Haas, Chapter 4-5)

- Pavement Management Levels and Functions
  - Using PMS as a Research Planning and Technology Improvement Tool
- Linear Regression (PSI Eq.)  
Use EXCEL Add-in and S-Plus Program

## Lecture #7:

### Data Requirements

(Haas, Chapter 6-7)

- Inventory of Pavement Management Data Needs

## Lecture #8:

Data Requirements

(Haas, Chapter 8-14)

- Pavement Performance
- Pavement Evaluation: Structural Capacity, Condition Surveys, Safety
- Feedback Database Management

Describing the Present Status of Taiwan's Pavement Networks

## Lecture #9:

New Predictive Modeling Techniques for Pavements (TRR 1449)

An Alternative Approach for

Backcalculation of Pavement Layer

Moduli (Lee, Chen)

## Lecture #10:

Determine Present and Future Needs

Priority Programming

(Hass, Chapter 15-20)

- Prediction Models for Pavement Deterioration
- Establishing Criteria and Determining Needs

- Rehabilitation and Maintenance Strategies
- Priority Programming of Rehabilitation and Maintenance

### Lecture #11:

#### Example of Working System

- Basic Features of Working Systems
  - Network Level Examples of PMS
  - The ILLINET (Illinois Interstate Highways Network Management System) Program
- “Forecasting Pavement Rehabilitation Needs for Illinois Interstate Highway System, ” Hall, Lee, Darter, Lippert

### Lecture #12:

#### Looking Ahead (LTPP)

- Analyzing Special Problems
- Application of Expert Systems and New Emerging Technologies
- Institutional Issues and Barriers Related to PMS Implementation
- Future Directions and Need for Innovation in Pavement Management

