

淡江大學九十六學年度第二學期課程教學計畫表

壹、科目名稱：高等土壤力學 Advanced Soil Mechanics

貳、授課老師：祝錫智

參、開課班級：碩士班

肆、必選修：選修

伍、學分數：3學分

陸、先修科目：土壤力學（一、二）

柒、教學內容及進度：

土壤及種類

土壤之應力

複習應力圓

複習土壤剪力強度

土壤穩定性問題簡介

土壓力--Rankine法、Coulomb法、螺線-直線破壞面；其他方法

承載力---被動土壓力之應用、Terzaghi方法、承載力公式之一般形式

邊坡穩定問題---常用及基本解法

一些黏土壓密問題

其他相關問題

捌、授課方式：課堂講授

玖、教學設備：投影機

拾、教材課本：無、自編講義

拾壹、參考書籍：(見另頁)

拾貳、成績考核方式：

平時考、期中考、期末考共同計分

拾參、工具書

1. 地質學名詞(國立編譯館)
2. 地工名詞英漢對照(鄭文龍)
3. 大地工程名詞統一譯名(土木水利工程學會)
4. 最新大地工程辭典(游啓亨)

拾肆、備註

每次上課及考試均需帶製圖工具及計算機

參考書籍：

1. Das, B. M. (1985), *Advanced Soil Mechanics*, McGraw Hill, New York. ISBN: 007Y66237-1.
2. Harr, M. E. (1966), *Foundations of Theoretical Soil Mechanics*, McGraw Hill, New York.
3. Kezdi, A. (1979), *Handbook of Soil Mechanics, Volume 1: Soil Physics*, Elsevier Scientific Publishing Company, Amsterdam.
4. Lambe, T. W. and Whitman, R. V. (1969), *Soil Mechanics*, Wiley and Sons, New York.
5. Poulos, H. G. and Davis, E. H. (1974), *Elastic Solutions for Soil and Rock Mechanics*.
6. Schofield, A. N. and Wroth, C. P. (1968), *Critical State Soil Mechanics*, McGraw Hill, Berkshire, England.
7. Scott, R. F. (1963), *Principles of Soil Mechanics*, Addison-Wesley, Reading, Mass.
8. Sokolovski, V. V. (1965), *Statics of Granular Media*, (Translated from 1960 Russian edition by J. K. Lusher, edited by A.W.T. Daniel), Pergamon, London.
9. Taylor, D. W. (1948), *Fundamentals of Soil Mechanics*, Wiley and Sons, New York.
10. Terzaghi, K. (1943), *Theoretical Soil Mechanics*, Wiley and Sons, New York.
11. Terzaghi, K., Peck, R. B. and Mesri, G. (1996), *Soil Mechanics in Engineering Practice*, Wiley and Sons, New York. (3rd Edition)
12. Tschebotarioff, G. P. (1973), *Retaining and Earth Structures*, McGraw Hill, New York. (2nd Edition)

REFERENCE SOURCES

1. Journals

- a. *Geotechnique* (The Institution of Civil Engineers, England)
- b. *Journal of Geotechnical and Environmental Engineering* (ASCE)
(formerly *Journal of Geotechnical Engineering*, *Journal of the Soil Mechanics and Foundation Division*)
- c. *Canadian Geotechnical Journal* (Canadian Geotechnical Society)
- d. *Soils and Foundations* (The Japanese Society of Soil Mechanics and Foundation Engineering)
- e. *Geotechnical Testing Journal* (ASTM)
- f. *International Journal for Numerical and Analytical Methods in Geomechanics* (Wiley)
- g. *Geotechnical News* (Canadian Geotechnical Society)
- h. *Ground Engineering* (Thomas Telford)
- i. *electronic journal of geotechnical engineering* (<http://geotech.civen.okstate.edu/ejge/>)

2. International Conference on Soil Mechanics and Foundation Engineering (ICSMFE)

- International Conference on Soil Mechanics and Geotechnical Engineering (ICSMGE)
- | | | |
|-----------------------|--------------------|---------------------|
| 1936 Cambridge, Mass. | 1948 Rotterdam | 1953 Zurich |
| 1957 London | 1961 Paris | 1965 Montreal |
| 1969 Mexico City | 1973 Moscow | 1977 Tokyo |
| 1981 Stockholm | 1985 San Francisco | 1989 Rio de Janeiro |
| 1994 New Delhi | 1997 Hamberg | 2001 Istanbul |

3. Regional Conferences

(Asian, Pan American, Australia-New Zealand, European, etc.)

4. ASCE Speciality Conferences

- 1st: Shear Strength of Cohesive Soils (1960)
 - 2nd: Design of Foundations for Control of Settlement (1964)
 - 3rd: Placement and Improvement of Soil to Support Structures (1968)
 - 4th: Lateral Stresses in the Ground and Design of Earth Retaining Structures (1970)
 - 5th: Performance of Earth and Earth Supported Structures (1972)
 - 6th: Analysis and Design in Geotechnical Engineering (1974)
 - 7th: In Situ Measurements of Soil Properties (1975)
 - 8th: Rock Engineering for Foundations and Slopes (1976)
 - 9th: Geotechnical Practice for Disposal of Solid Waste Materials (1977)
 - 10th: Earthquake Engineering and Soil Dynamics (1978)
 - 11th: Grouting in Geotechnical Engineering (1982)
 - 12th: Engineering and Construction in Tropical and Residual Soils (1982)
 - 13th: Geotechnical Practice in Offshore Engineering (1983)
 - 14th: Use of In Situ Tests in Geotechnical Engineering (1986)
- [自1987起改爲Geotechnical Special Publication #]

5. ASTM

- a. Standards
- b. Journal of Materials
- c. Materials Research and Standards
- d. STP (Special Technical Publication)

6. Transportation Research Board (formerly Highway Research Board)

7. Government

- a. WES (Waterways Experimental Station)
- b. Corps of Engineers
- c. Air Force (AFSWC)
- d. Bureau of Reclamation

8. Misc.

- a. Norwegian Geotechnical Institute (NGI)
- b. Swedish Geotechnical Institute (SGI)
- c. Universities -MIT, Purdue, Illinois, Berkely, Harvard, etc.
- d. Boston Society of Civil Engineers
Contribution to Soil Mechanics, 3 volumes

大學教科書：

1. Atkinson, J. (1993), *An Introduction to The Mechanics of Soils and Foundations*, McGraw- Hill, London.
2. Das, B. M. (1997), *Principles of Geotechnical Engineering*, 4th edition, PWS-KENT. (有中譯本)
3. Das, B. M. (2000), *Fundamentals of Geotechnical Engineering*, Brooks/Cole Pub Co; ISBN: 0534371140
4. Das, B. M. (2001), *Principles of Geotechnical Engineering*, 5th edition, Brooks/Cole Pub Co; ISBN: 053438742X
5. Holtz, R. D. and Kovacs, W. D. (1981), *An Introduction to Geotechnical Engineering*, Prentice-Hall, Englewood Cliffs, New Jersey. (有中譯本)
6. Jumikis, A. R. (1962), *Soil Mechanics*, D. Van Nostrand Company, Princeton, New Jersey.
7. Kezdi, A. (1979), *Handbook of Soil Mechanics, Volume 1: Soil Physics*, Elsevier Scientific Publishing Company, Amsterdam.
8. Lambe, T. W. and Whitman, R. V. (1969), *Soil Mechanics*, John Wiley and Sons, New York. (SI version, 1979)(有中譯本)
9. McCarthy, D. (2006), *Essentials of Soil Mechanics and Foundations: Basic Geotechnics*, 7th edition, Prentice Hall.
10. Perloff, W. H. and Baron, W. (1976), *Soil Mechanics: Principles and Applications*, Ronald Press, New York.
11. Sowers, G. F. (1979), *Introductory Soil Mechanics and Foundations: Geotechnical Engineering*, 4th edition, Macmillan, New York.
12. Terzaghi, K. and Peck, R. B. (1967), *Soil Mechanics in Engineering Practice*, 2nd edition, John Wiley & Sons, New York. [有中譯本, 交通部交通研究所, 64 年(上,下)]
13. Terzaghi, K. and Peck, R. B. and Mesri, G. (1996), *Soil Mechanics in Engineering Practice*, 3rd edition, John Wiley & Sons, New York.