1. 課程名稱：樁基礎分析與設計
2. 學分數：3
3. 課程編號：N65A500
4. 授課教師：倪勝火
5. 課程目標：熟悉樁基礎力學分析之基本原理，具備樁基礎分類、樁基礎工程
   施工及品質檢測法、樁基礎垂直向及側向極限承力計算之各種方法、樁基
   礎垂直向及側向載重與變形關係之模擬分析法、群樁基礎載重與變形關係之
   分析法、單樁和群樁基礎分析和設計之基本學識能力。
6. 課程內容概要：
   1. Pile Foundation: Classification of piles, pile types, piling method, integrity testing,
      effects of installation of piles
   2. Study of Boring Log: Soil classification, evaluation of significant soil properties
   3. Ultimate Axial Load Capacity of Piles (Static Approach): Piles in Clay ($\alpha$, $\beta$, $\lambda$, 
      and API method), Piles in sand
   4. Load Capacity by Dynamic Methods: Pile driving equations, wave equation
      analysis for piles
   5. Settlement Analysis of Axially Loaded Piles: Poulos’ elastic method, t-z curves
      method
   6. Ultimate Lateral Resistance of Piles: Lateral deflections, Brom’s method: piles in
      cohesive soils, piles in cohesionless soils
   7. Beams on Foundation: Beam theory, difference equation for beam on foundations:
      beam of infinite length, beam of finite length
   8. Load-Deflection Prediction for Laterally Loaded Piles: Poulos’ elastic method,
      difference equation method for solving the differential equation for a laterally
      loaded piles, non-dimensional method
   9. p-y Curves for Laterally Loaded piles: Piles in clay, piles in sand
   10. Analysis of Pile Groups under Lateral Loading: Distribution of load to each pile in
        a group, behavior of a group of closely-spaced piles: a single-pile method,
        Poulos-Focht-Koch solution, modified p-y curves method: p-factor, y-factor, both
        p and y factor
7. 成績計算方式：
   (a) 2 Midterm Exams. .................................................................66%
   (b) Homeworks ........................................................................34%
8. 教科書或主要參考書：
      New York, U.S.A.
      New Jersey, U.S.A.
9. 適合選修對象：博碩研究生選修
10. 建議先修基礎課程：無