1. **Course**: Finite Element Method
2. **Credits**: 3
3. **Course No.**: N655500
4. **Planner**: Hsuan-Teh Hu
5. **Goal**: Theory and applications of finite element method; stiffness matrices for triangular, quadrilateral, hexahedral and isoparametric elements; two- and three-dimensional elements including solids of revolution; knowledge of using variational method (such as Rayleigh-Ritz method) and weighted residual (such as Galerkin method) to formulate finite element expressions; employing of commercial finite element program ABAQUS to solve practical engineering problem.

6. **Course Contents**:
   1. Introduction
   2. One-dimensional Elements and Computational Procedures
   3. Introduction to ABAQUS Finite Element Program
   4. Basic Elements
   5. Variational and Rayleigh-Ritz Methods
   6. Weighted Residual and Galerkin Methods
   7. Isoparametric Elements
   8. Isoparametric Triangles and Tetrahedra
   9. Solids of Revolution

7. **Grading**:
   1. 2 Exams ................................................................. 60%
   2. Homeworks ............................................................. 30%
   3. Term project ......................................................... 10%

8. **Texts**:

9. **Prerequisite**: Matrix analysis of structures
10. **Required/Optional**: Optional
1. 課程名稱： Finite Element Method
2. 學分數： 3
3. 課程編號： N655500
4. 授課教師： Hsuan-Teh Hu
5. 課程目標： Theory and applications of finite element method; stiffness matrices for triangular, quadrilateral, hexahedral and isoparametric elements; two- and three-dimensional elements including solids of revolution; knowledge of using variational method (such as Rayleigh-Ritz method) and weighted residual (such as Galerkin method) to formulate finite element expressions; employing of commercial finite element program ABAQUS to solve practical engineering problem.
6. 課程內容概要:
   1. Introduction
   2. One-dimensional Elements and Computational Procedures
   3. Introduction to ABAQUS Finite Element Program
   4. Basic Elements
   5. Variational and Rayleigh-Ritz Methods
   6. Weighted Residual and Galerkin Methods
   7. Isoparametric Elements
   8. Isoparametric Triangles and Tetrahedra
   9. Solids of Revolution
7. 成績計算方式:
   (1) 2 Exams .......................................................... 60%
   (2) Homeworks .................................................... 30%
   (3) Term project .................................................. 10%
8. 教科書和主要參考書
9. 建議先修課程: Matrix analysis of structures
10. 適合修習對象: 博、碩士班研究生