國立台灣大學生物產業機電工程學系課程內容綱要

課程名稱：工程疲勞分析		課程編號：
英文名稱： Engineering Fatigue Analysis		
必修或選修：選修	學分數：3 學分	修習年級：大三以上
每週時數：3 小時		預修科目：材料力學
實習或實驗：0 小時		同修科目：無

內容綱要：

Due to global competition and higher customer demands for safety, durability and reliability of the products, there has been a heightened interest in improving quality, productivity, and reliability of manufactured products. The purpose of this course is to present the recent techniques for the fatigue analysis and practice. Furthermore it covers the comprehensive methods to capture the component load, to characterize the product fatigue resistance, and to perform the fatigue damage assessment of a product.

Topics:
1. Stress-Based Fatigue Analysis and Design
2. Fatigue Damage Theory
3. Variable Amplitude Loading
4. Strain-Based Fatigue Analysis and Design
5. Notch Analysis
6. Fracture Mechanics and Fatigue Propagation
7. Multiaxial Fatigue

Grading:
1. Presentations
2. Mid-term
3. Final or Term Project

教科書：1. Fatigue Testing and Analysis, Lee, Y.-L. et. al., 2005, Elsevier, 東華書局代理
2. Course-pack

授課教師：廖國基

備註：1.上課時間：每週三下午 6,7,8 節。
2.上課地點：農機系知武館 207 教室。

2014/8/25

國立台灣大學授課科目教學計畫表

科目名稱: 工程疲勞分析

週次	上課日期	教　學　與　作　業　進　度	備　註
1		Introduction	
2		Stress-Based Fatigue Analysis and Design	
3		Stress-Based Fatigue Analysis and Design Fatigue Damage Theory	
4		Variable Amplitude Loading	
5		Presentation (I)	
6		Strain-Based Fatigue Analysis and Design	
7		Strain-Based Fatigue Analysis and Design	
8		Notch Analysis	
9		Midterm	
10		Presentation (II)	
11		Notch Analysis	
12		Fracture Mechanics and Fatigue Propagation	
13		Fracture Mechanics and Fatigue Propagation	
14		Presentation (III)	
15		Multiaxial Fatigue	
16		Multiaxial Fatigue	
17		Presentation (IV)	
18		Final	