

課程簡介 Course Introduction

開課班級 Department	電機工程學系
授課方式 Instructional Method	課堂教學、中文
課程代號 Course Reference Number	182056
課程名稱(中文) Course Title (Chinese)	薄膜工程
課程名稱(英文) Course Title (English)	Thin Film Engineering
學分數/時數 Credit Hours	3 / 3
必(選)修 Requirement / Elective Course	選修
授課老師 Instructor	盧陽明

課程目標 Learning Objectives

The aim of this course is to give the basic concept of manufacturing process of thin films by vacuum and solution processes. The students who take this course can build the whole idea of thin film technology and base on this knowledge to develop advanced electro-optical materials and devices.

先修 (前置) 課程 Prerequisite

Chemistry, Physics, Materials Science

課程大綱 Course Syllabus

週次 Week	課程單元大綱 Unit	教學方式 Instructional Method/Teaching Style	參考資料或相關作業 References or Related Materials	評量方式 Grading
1	Vacuum-basic concept	Teaching and discussion		
2	Equipments used in vacuum environment	Teaching and discussion		
3	Basic theory of thin films	Teaching and discussion		
4	Basic theory and behavior of gases	Teaching and discussion		
5	Fundamental theory and application of CVD(1)-Thermal&Plasma	Teaching and discussion		
6	Fundamental theory and application of CVD(2)-ALD	Teaching and discussion		
7	Fundamental theory and application of PVD(1)-Thermal&e-beam	Teaching and discussion		
8	Fundamental theory and application of PVD(2)-Sputter&Microwaver	Teaching and discussion		

9	Midterm Report	Report and discussion
10	Basic Chemistry review	Teaching and discussion
11	Basic Electrochemistry	Teaching and discussion
12	Water Bath method	Teaching and discussion
13	Hydrothermal process	Teaching and discussion
14	Basic Properties of polymers	Teaching and discussion
15	Dipping Method	Teaching and discussion
16	Spin coating	Teaching and discussion
17	Characteristics of thin films	Teaching and discussion
18	Final Report	Report and discussion

單一課程對應校能力指標程度

The Degree to Which Single Course Corresponds to School Competence

編號 No.	校核心能力 School Core Competencies	符合程度 Degree of conformity
1	道德力 (Morality)	3
2	自學力 (Self-learning)	4
3	創造力 (Creativity)	4
4	溝通力 (Communication)	3
5	就業力 (Employability)	5

單一課程對應系能力指標程度

The Degree to Which Single Course Corresponds to Department Competence

代碼 No.	類別 Category	系核心能力 Department Core Competencies	符合程度 Degree of conformity
01	系所	具備專業知識運作及運用之能力	4
02	系所	發掘問題、實驗分析及驗證之能力	4
03	系所	創新思考開發之能力	4
04	系所	協調合作、領導團隊與管理規劃之能力	3
05	系所	中英文寫作與簡報之能力	4
06	系所	強化國際觀與國際交流之能力	4

單一課程對應院能力指標程度

The Degree to Which Single Course Corresponds to College Competence

編號 No.	院核心能力 College Core Competencies	符合程度 Degree of conformity
1	語文能力	4
2	溝通與合作能力	3
3	創新與實踐能力	3
4	專業知能	4

教學方法 Teaching Method

教學方法 Teaching Method	百分比 Percentage
講述	50.0
影片欣賞	20.0
個案研討	30.0
總和 Total	100.0

成績評量方式 Grading

評量方式 Grading	百分比 Percentage
個人書面報告	40.0
個人口頭報告	40.0
課堂參與	10.0
出席狀況	10.0
總和 Total	100.0