108/2 Courses taught in English(108 學年度第 2 學期全英文授課課程表)

No. 編號	Department 開課系所	Course Code 課號	Course Title 科目名稱	Required/ Elective 必修/選修	Credit Points 學分數	Instructor 授課老師	Course Description 課程說明
1.	Institute of Mechanical and Electro-Mechanical Engineering(動力機械工程系機械與機電工程博士班)	0257	Tribology Theory （磨潤原理）	Elective 選修	3	Kreivaitis, Raimondas	Course Outline
2.	Institute of Mechanical and Electro-Mechanical Engineering(動力機械工程系機械與機電工程博士班)	0259	Advanced Manufacturing (先進製造學)	Elective 選修	3	Kreivaitis, Raimondas	Course Outline
3.	Institute of Mechanical and Electro-Mechanical Engineering(動力機械工程系機械與機電工程博士班)	2450	Gear Principle (齒輪原理)	Elective 選修	3	Shinn-Liang, Chang 張信良	Course Outline
4.	Institute of Mechanical and Electro-Mechanical Engineering(動力機械工程系機械與機電工程博士班)	2449	Practical Mechanism Innovation Design （機構創新設計實務）	Elective 選修	3	Long-Chang, Hsieh 謝龍昌	Course Outline
5.	Institute of Mechanical and Electro-Mechanical Engineering(動力機械工程系機械與機電工程博士班)	2448	Research Methodology and Technical Writing (研究方法與科技論文寫作)	Elective 選修	3	Kreivaitis, Raimondas	Course Outline
6.	Institute of Mechanical and Electro-Mechanical Engineering(動力機械工程	2446	Viscous fluid dynamics (黏性流體力學)	Elective 選修	3	Shou-Yin, Yang 楊授印	Course Outline

	系機械與機電工程博士班)						
7.	Institute of Mechanical and Electro-Mechanical Engineering(動力機械工程系機械與機電工程博士班)	2453	Nonlinear System Analysis (非線性系統分析)	Elective 選修	3	Yunn-Lin, Hwang 黃運琳	Course Outline
8.	Institute of Mechanical Design Engineering(機械設計工程系碩士班)	0242	Mechanical Vibrations （機械振動學）	Elective 選修	3	Yunn-Lin, Hwang 黃運琳	Course Outline
9.	Institute of Automation Engineering(自動化工程系碩士班)	0049	Big Data Analysis （巨量資料分析）	Elective 選修	3	Kuang-Chyi, Lee 李廣齊	Course Outline
10.	Institute of Automation Engineering(自動化工程系碩士班)	0047	Engineering Analysis （工程分析）	Elective 選修	3	Meng-Tse, Lee 李孟澤	Course Outline
11.	Graduate Institute of Aeronautical and Electronic Engineering（飛機工程系航空與電子科技碩士班）	0302	Aircraft Stability and Control (飛機穩定性與控制)	Elective 選修	3	Wen-Chi, Lu 呂文祺	Course Outline
12.	Graduate Institute of Aeronautical and Electronic Engineering（飛機工程系航空與電子科技碩士班）	0306	International Aviation Regulation (國際民航法規)	Elective 選修	3	Chung-Yan, Lin 林中彥	Course Outline
13.	Institute of Electrical Engineering (電機工程系碩士班)	0133	Advance MPSOC FPGA System Integration （高等 FPGA 系統設計與實務）	Elective 選修	3	Chi-Chia, Sun 宋啟嘉	Course Outline
14.	Institute of Electrical Engineering (電機工程系碩士班)	0134	Heterogeneous Access Technologies of Mobile Broadband Networks (行動寬頻網路異質存取技術)	Elective 選修	3	Hui-Kai, Su 蘇暉凱	Course Outline

15.	Master of Electro-Optical and Materials Science(光電工程系光電與材料科技碩士班)	0296	Analog Integrated Circuit （類比積體電路）	Elective 選修	3	Wen-Kai, Kuo 郭文凱	Course Outline
16.	Master of Electro-Optical and Materials Science(光電工程系光電與材料科技碩士班)	0292	Optical engineering in crystal （晶體光電工程）	Elective 選修	3	Wei-Qun, Chuang 莊為群	Course Outline
17.	Institute of Computer Science and Information Engineering (資訊工程系碩士班)	0119	Internet of things (物聯網)	Elective 選修	3	Ming-Shen, Chien 簡銘伸	Course Outline
18.	Institute of Computer Science and Information Engineering (資訊工程系碩士班)	0120	Internet of Things Security (物聯網安全)	Elective 選修	3	Yun-Shuai, Yu 游允帥	Course Outline
19.	Institute of Information Management(資訊管理系碩士班)	0088	Database Management （資料庫管理）	Elective 選修	3	Yung-Tsung, Hou 侯雍聰	Course Outline
20.	Institute of Information Management(資訊管理系碩士班)	0093	Machine Learning and Big data （機器學習與大數據）	Elective 選修	3	Nian-Ze, Hu 胡念祖	Course Outline
21.	Institute of Information Management(資訊管理系碩士班)	0089	Production and Operations Management (生產作業與管理)	Elective 選修	3	Wen-Hung, Kuo 郭文宏	Course Outline
22.	Institute of Information Management(資訊管理系碩士班)	0091	Web Technology Application and Integration Web (技術應用與整合)	Elective 選修	3	Y-F, Lan 藍友烽	Course Outline

23.	Master program of Business Management of Department of Business administration (企業管理系經營管理碩士班)	0347	Technology Management （科技管理）	Elective 選修	3	Yu-Chun, Chen 陳鈺淳	Course Outline
24.	Master program of Business Management of Department of Business administration (企業管理系經營管理碩士班)	0344	Behavioral Finance （行為財務）	Elective 選修	3	Chi-Lin, Lu 呂麒麟	Course Outline
25.	Master program of Business Management of Department of Business administration (企業管理系經營管理碩士班)	0346	Strategic Management （策略管理）	Elective 選修	3	Yi Hsu 徐怡	Course Outline
26.	Master program of Business Management of Department of Business administration (企業管理系經營管理碩士班)	0343	Information Management （資訊管理）	Elective 選修	3	Chih-Chin, Liang 梁直青	Course Outline
27.	Master program of Business Management of Department of Business administration (企業管理系經營管理碩士班)	0345	Organizational Behavior （組織行為）	Elective 選修	3	Ching-Hsiang, Liu 劉慶湘	Course Outline
28.	Institute of Department of Finance(財務金融系碩士班)	0036	The Theory and Practice of Investment (投資學理論與實務)	Required 必修	3	Ya-Wen, Lai 賴雅雯	Course Outline

29.	Institute of Department of Finance(財務金融系碩士班)	0039	Financial Econometrics Softwares (財金計量)	Elective 選修	3	Jo-Yu, Wang 王若愚	Course Outline
30.	Institute of Industrial Engineering and Management (工業管理系工業工程與管理碩士班)	0321	Production Management and Practice (生產管理與實務)	Elective 選修	3	Ying-Lien Lee 李英聯	Course Outline
31.	Institute of Industrial Engineering and Management (工業管理系工業工程與管理碩士班)	0322	Applied Statistics （應用統計學）	Elective 選修	3	Jyun-Ping, Huang 黃俊平	Course Outline
32.	Institute of Industrial Engineering and Management (工業管理系工業工程與管理碩士班)	0320	Simulation （模擬學）	Elective 選修	3	Chih-Hsiung, Hu 胡智熊	Course Outline
33.	Institute of Industrial Engineering and Management (工業管理系工業工程與管理碩士班)	0319	Networks and Logistics （網路與運籌）	Elective 選修	3	Yi-Chih, Hsieh 謝益智	Course Outline
34.	Graduate School of Digital Contents and Creative Industries（多媒體設計系數位內容創意產業碩士班）	0168	Project Discussions (II) （專題討論(二)）	Required 必修	3	Siu-Tsen, Shen 沈思岑	Course Outline

35.	Graduate School of Digital Contents and Creative Industries（多媒體設計系數位內容創意產業碩士班）	0171	Research of Interactive Technology and Applications (互動科技應用研究)	Elective 選修	3	wen hwa, Cheng 鄭文華	Course Outline
36.	Graduate School of Digital Contents and Creative Industries（多媒體設計系數位內容創意產業碩士班）	0169	Creative Industries in Cultural Research (文化創意產業研究)	Elective 選修	3	wu hawe, Jue 朱文浩	Course Outline
37.	Graduate School of Digital Contents and Creative Industries（多媒體設計系數位內容創意產業碩士班）	0172	Multimedia Creativity and Performance Research （多媒體創作與表現專題研究）	Elective 選修	3	Siu-Tsen, Shen 沈思岑	Course Outline
38.	Graduate School of Digital Contents and Creative Industries（多媒體設計系數位內容創意產業碩士班）	0177	Research on social media interaction Integrated （社交媒體互動研究）	Elective 選修	3	Siu-Tsen, Shen 沈思岑	Course Outline
39.	Department of Electrical Engineering (電機工程系)	1039	Science and Technology English （科技英文）	Elective 選修	3	Sen-Tung, Wu 吳森統	Course Outline

Courses taught in English

Course title 課程名稱	Tribology Theory (磨潤原理)
Course Description 課程概述	Lubrication is one of the main approaches to control friction and wear. During the course, we will discuss the composition and properties of lubricating oils and greases. Applications such as IC engines, gears and hydraulic will be discussed in more details.
Course objective 課程目標	Improving knowledge in the field of lubricants and lubrication. The main properties of lubricants will be discussed in detail. Few lubricating oil applications will be analyzed.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	Material Engineering
Teaching Strategies 教學方法	The teaching course will be on slide show presentation and blackboard. Active student participation during practical exercises will be encouraged.
Course Material 課程教材	During the course, students will be introduced to composition and the main properties of lubricants. Specific lubricants such as the IC engine, gears, and hydraulics will be discussed in more details. There will be a brief introduction to environmentally friendly lubricants.
Grading 評量方式	Middle Test 50 % + Final Presentation 50 %.
References 參考書目	• Lubricants and Lubrication. Mang, Wilfried Dresel. John Wiley & Sons, 2007-02-27 - 890 p. • Fundamentals of Tribology (2nd Edition). Ramsey Gohar, Homer Rahnejat. World Scientific Publishing Company, 2012-03-22 - 460 p.
Contact with Teacher 老師聯絡資訊	Dr. Raimondas Kreivaitis, Department of Power Mechanical Engineering, Room 510

Course Outline 課程進度	
Week 1	**Introduction**
Week 2	**Composition of lubricants**
Week 3-5	**Properties of lubricating oils and greases** **Base oils and additives**
Week 6-9	**Middle test**
Week 10	**Environmentally friendly lubricants**

Week 11-12 Week 13-14 Week 15 Week 16-17 Week 18	**Lubricants for internal combustion engines** **Hydraulic oils** **Gear lubrication oils** **Final presentation**
Remarks 備註	

Courses taught in English

Course title 課程名稱	Advanced Manufacturing (先進製造學)
Course Description 課程概述	Machine part failures cause downtime and repair expenses. Most of the failures are caused by wear of interacting surfaces. There are many techniques to enhance surface longevity. They can be applied during production or later when the particular surface is repaired. During the course, common techniques will be explained together with the possible applications for IC engine part surfaces.
Course objective 課程目標	Improving knowledge in possible enhancement of engineering surfaces to become more wear-resistant, and with lower friction ability.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	Mechanical Engineering
Teaching Strategies 教學方法	The teaching course will be on slide show presentation and blackboard. Active student participation during practical exercises will be encouraged.
Course Material 課程教材	During the course, students will be introduced with techniques allowing to enhance the lifetime of machine parts. Wear and fatigue caused IC engine parts failures and their repair will be discussed in detail.
Grading 評量方式	Middle Test 50 % + Final Report 50 %.
References 參考書目	• **Holmberg, K and Matthews A.** Coatings Tribology. Properties, Mechanisms, Techniques, and Applications in Surface. • **Gilles T.** Automotive Engines. Diagnosis, Repair and Rebuilding.

Contact with Teacher 老師聯絡資訊	Dr. Raimondas Kreivaitis, Department of Power Mechanical Engineering, Room 510

Course Outline 課程進度	
Week 1	**Introduction**
Week 2-3	**Wear resistance coatings used to repair machine elements**
Week 4-5	**Surface texturing to reduce friction and wear**
Week 6-7	**Other techniques used to improve friction surface longevity**
Week 8	**Errors and product assembly accuracy**
Week 9	**Middle Test**
Week 10-11	**Defectoscopy of engineering elements**
Week 12-13	**Common wear and fatigue caused failures of IC engine parts**
Week 14-15	**Repairing IC engine crankshaft**
Week 16-17	**Repairing IC engine cylinder liners**
Week 18	**Final Report**

Remarks 備註	

Courses taught in English

Course title 課程名稱	Theory of Gearing (齒輪原理)
Course Description 課程概述	Gears are popularly applied in industry. Engineers need the knowledge how to generate the tooth profile according to the manufacturing machines. The tooth contact analysis between the meshing gears is also studied in the class.
Course objective 課程目標	1. Coordinate Transformation 2. Tooth Profile Generation 3. Tooth Contact Analysis

Competence 核心能力	Learn to derive the tooth profile of gears based on the machine and cutter geometry.
Prerequisite Course(s) 先修課程或先備能力	Mechanisms
Teaching Strategies 教學方法	Class Learning and Project Based Learning
Course Material 課程教材	Theory of Gearing, F. L. Litvin
Grading 評量方式	1. Mid-examination 2. Paper Reading and Presentation 3. Project
References 參考書目	Gear Geometry and Applied Theory, F. L. Litvin and Alfonso Fuentes
Contact with Teacher 老師聯絡資訊	05-6315440

Course Outline 課程進度	
1. Coordinate Transformation 2. Transformation of Motion 3. Plane Curves 4. Conjugate Shapes	1. Plane Gearing Analysis 2. Basic Kinematic Relations of Plane Gearings and Their Application 3. Generation of Conjugate Shapes 4. Project Study

Remarks 備註	

Courses taught in English

Course title 課程名稱	Practical Mechanism Innovative Design (機構創新設計實務)
Course Description 課程概述	1. Introduction of mechanisms 2. Basic principles of mechanisms 3. Mobility of mechanisms 4. Creative design methodology 5. Learn how to innovate new mechanisms to avoid the relevant patent.
Course objective 課程目標	Teaching students to understand the basic principles of mechanisms, and further to learn how to innovate new mechanisms to avoid the relevant patent.
Competence 核心能力	1. Understand the basic principles of mechanisms. 2. Have the ability of innovate new mechanisms to avoid the relevant

	patent.
Prerequisite Course(s) 先修課程或先備能力	Mechanisms 機構學
Teaching Strategies 教學方法	1. Classroom teaching 2. Case study 3. Problem-guided learning 4. Project-guided learning
Course Material 課程教材	Creative design of mechanical devices (Hong-Sen Yan, Springer, Singapore.)
Grading 評量方式	1. Test (50%) 2. Paper reading and presentation (20%) 3. Project presentation (30%)
References 參考書目	Mechanisms-Theory and applications (Hong-Sen Yan, McGraw Hill, Singapore.)
Contact with Teacher 老師聯絡資訊	Long-Chang Hsieh (謝龍昌) Professor 0910-764467

Course Outline 課程進度	
Chapter 1 Introduction 1.1 Design 1.2 Design Peocess 1.3 Creative Design **Chapter 2 Mechanical devices** 2.1 Mechanical Members 2.2 Joints 2.3 Chains, Mechanisms, and Structures 2.4 Topological Structures **Chapter 3 Mobility** 3.1 Degrees of Freedoms 3.2 Mobility Synthesis 3.3 Constrain Motiom 3.4 Redundant Degrees of Freedom 3.5 Paradoxical mechanism **Chapter 4 Creative design methodology** 4.1 Introduction 4.2 Procedure 4.3 Existing Designs	

8.6 Prototype Design and Manufacture 8.7 Conclusion **Chapter 9 The Innovative Design of Wheelchair with One Degrees of Freedom to Perform Lifting and Standing Functions** 9.1 Introduction 9.2 Multifunctional wheelchair 9.3 Osborn's Check-List Method 9.4 Innovative Design 9.5 Innovative Design of Folding Bicycle 9.6 Prototype Design and Manufacture 9.7 Conclusion **Chapter 10 The Innovative Design of Gull-wing Frame System** 10.1 Introduction 10.2 *Vehicle Frames* 10.3 Morphological Chart Analysis 10.4 Innovative Design 10.5 Innovative Design 10.6 Prototype Design and Manufacture 10.7 Conclusion	
Remarks 備註	

Courses taught in English

Course title 課程名稱	Research Methology and Technical Writing (研究方法與科技論文寫作)
Course Description 課程概述	Nowadays advanced technology is driven by the research achievements. Proper research experiment planning will ensure the precision and reliability of obtained results. The ability to present obtained results in the clearest and concise way is important as well. During the course, it will be

	explained the methodology and principles of planning experiments, evaluating obtained data, and introduce the foundings during the conferences or technical meetings.
Course objective 課程目標	Improving knowledge in planning scientific experiments, defining experiment methodology, explaining and presenting obtained results.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	Mechanical Engineering
Teaching Strategies 教學方法	The teaching course will be on slide show presentation and blackboard. Scientific databases will be analyzed online. Active student participation during practical exercises will be encouraged.
Course Material 課程教材	During the course, students will be introduced with methods of searching scientific information and applying it in practice. Planning of scientific experiments and describing obtained results will be discussed in detail. The student will be also introduced with a presentation of obtained scientific results.
Grading 評量方式	Middle Report 50 % + Final Presentation 50 %.
References 參考書目	Writing in English. A Practical Handbook for Scientific and Technical Writers. Svobodova, Z. et al. 2000.
Contact with Teacher 老師聯絡資訊	Dr. Raimondas Kreivaitis, Department of Power Mechanical Engineering, Room 510

Course Outline 課程進度	
Week 1	**Introduction**
Week 2	**Planing the experiment**
Week 3-4	**Defining methodology**
Week 5	**Reliability of obtained results**
Week 6	**Types of scientific articles**
Week 7-8	**Scientific article databases**
Week 9	**Middle Report**
Week 10	**Stricture of scientific article**

Week 11-13	**Writing manuscript**
Week 14-15	**Reviewing scientific article**
Week 16-17	**Presenting research results**
Week 18	**Final Presentation**
Remarks 備註	

Courses taught in English

Course title 課程名稱	Viscous Fluid Dynamics (黏性流體力學)
Course Description 課程概述	This course is usually taken by graduate students in mechanical engineering who specialize in fluid mechanics. A second course in graduate level fluid mechanics. Familiarity with Navier-Stokes equations is assumed and various approximate solution methods are developed leading up to Prandtl's Boundary Layer theory for laminar flow. It is an elective course.
Course objective 課程目標	The basic physical concepts and basic theories of viscous fluid mechanics are described in detail. The basic theory of invisible fluid viscous flow and its application in practical engineering are introduced. The boundary layer theory is the main content of this course, and it is explained in the theory and calculation method of turbulent boundary layer.
Competence 核心能力	After completion of this course, the student will have general competence on: - The basic elements of the theoretical foundations for ideal and real fluid flows. - Formulation and solution of practical flow problems. Also Developed mechanical engineering skills and knowledge. ● Ability to plan and execute research projects. ● Ability to write professional reports / papers and prepare presentations. ● Ability to perform independent research and demonstrate innovative thinking.

	● Ability to solve problems in a coordinated and integrated manner.
Prerequisite Course(s) 先修課程或先備能力	Fluid dynamics, Mathematics
Teaching Strategies 教學方法	Lectures, example exercises, practice exercises, laboratory exercises and self-study.
Course Material 課程教材	Viscous Fluid Flow, MCGRAW HILL SERIES IN MECHANICAL ENGINEERING ISBN-10: 0072402318 ISBN-13: 978-0072402315
Grading 評量方式	Written examination
References 參考書目	
Contact with Teacher 老師聯絡資訊	Prof. Shouyin Yang, Office : 05-6315432; e-mail: ianyang@nfu.edu.tw

Course Outline 課程進度	
1. Fundamental (Control volume, conservation law) 2. Derivation of the Navier-Stokes equations 3. Exact solution of Navier-Stokes Equation 4. Exact solution of Navier-Stokes Equation 5. Low Reynolds number flows(Lubrication theory) 6. Low Reynolds number flows(Stokes Flow) 7. Low Reynolds number flows(Oseen's Flow) 8. High Reynolds number flows(Boundary layer theory)	9. High Reynolds number flows(Boundary layer theory) 10. High Reynolds number flows(Boundary layer theory) 11. Similarity Solutions for flow over a plate 12. Similarity Solutions for flow over a wedge 13. Approximate Solutions to boundary layer equations (Von-Karman Integral method) 14. Approximate Solutions to boundary layer equations (Von-Karman Integral method) 15. Free Shear Flows-Jets 16. Free Shear Flows-Wakes 17. Stability Theory 18. Transition to Turbulence

Remarks 備註	

Courses taught in English

Course title 課程名稱	Nonlinear System Analysis (非線性系統分析)
Course Description 課程概述	This course covers model generation, parameter identification, balancing of mechanical systems, torsional and bending vibrations, vibration isolation, and the dynamic behaviors of drives and machine frames as complex systems.
Course objective 課程目標	Let students understand “Nonlinear System Analysis” in the applications of industry.
Competence 核心能力	Mature, Stable and Computational abilities.
Prerequisite Course(s) 先修課程或先備能力	Dynamics and Mechanics of Materials.
Teaching Strategies 教學方法	Course Notes, Computer Simulation, and Report Writing.
Course Material 課程教材	Lecture notes.
Grading 評量方式	Quiz, Mid-term Examination, Final Examination, and Final Project.
References 參考書目	1. Shabana, Ahmed A., 1991, Theory of Vibration Volume II: Discrete and Continuous Systems , Springer-Verlag, Inc.
Contact with Teacher 老師聯絡資訊	Yunn-Lin Hwang/黃運琳 hwang@nfu.edu.tw TEL: 05-6315339

Course Outline 課程進度	
1. Introduction 2. Solutions of the Nonlinear Vibration Equations 3. Free Vibration of Single Degree of Freedom Nonlinear Systems 4. Forced Vibration of Single Degree of Freedom Nonlinear Systems	5. Response to Nonharmonic Forces of Nonlinear Systems 6. Multi-Degree of Freedom Nonlinear Systems 7. Introduction of vibration measurements

Remarks 備註	

Courses taught in English

Course title 課程名稱	Mechanical Vibrations (機械振動學)
Course Description 課程概述	Mechanical Vibrations is the study of the vibration behavior of flexible bodies, each of which may undergo external exciting forces.
Course objective 課程目標	Let students understand “Mechanical Vibrations” in applications of industry.
Competence 核心能力	Mature, Stable and Computational abilities.
Prerequisite Course(s) 先修課程或先備能力	Statics, Dynamics and Mechanics of Materials.
Teaching Strategies 教學方法	Course Notes, Computer Simulation, and Report Writing.
Course Material 課程教材	Shabana A. A., 1991, *Theory of Vibration - Volume I: An Introduction*, Springer-Verlag, New York.
Grading 評量方式	Quiz, Mid-term Examination, Final Examination, and Final Project.
References 參考書目	1. Meirovitch L., 1987, Element of Vibration Analysis, 2nd edition, McGraw-Hill Book Company, New York. 2. Inman D. J., 1994, Engineering Vibration, Prentice-Hall International, New York.
Contact with Teacher 老師聯絡資訊	Yunn-Lin Hwang/黃運琳 hwang@nfu.edu.tw TEL: 05-6315339

Course Outline 課程進度	
Outline: 1. Introduction 2. Solutions of the Vibration Equations 3. Free Vibration of Single Degree of Freedom Systems 4. Forced Vibration of Single Degree of Freedom Systems 5. Response to Nonharmonic Forces 6. Multi-Degree of Freedom Systems 7. Introduction of vibration measurements	

Remarks 備註	

Courses taught in English

Course title 課程名稱	Big Data Analysis (巨量資料分析)
Course Description 課程概述	The course completely self-contained and heavily illustrated this introduction to basic concepts and methodologies for data mining and big data analytics truly is suitable for seniors and first-year graduate students in almost any technical discipline. The course explores the concepts and techniques of data mining, a promising and flourishing frontier in data and information systems and their applications. Data mining, also popularly referred to as knowledge discovery from data (KDD), is the automated or convenient extraction of patterns representing knowledge implicitly stored or captured in large databases, data warehouses, the Web, other massive information repositories, or data streams.
Course objective 課程目標	Introducing the concepts of data mining and big data analysis.
Competence 核心能力	Progamming about the data mining and big data analysis.
Prerequisite Course(s) 先修課程或先備能力	Computer Programming Languages (計算機程式)
Teaching Strategies 教學方法	Oral Teaching, Practice in computer and Testing
Course Material 課程教材	Jiawei Han & Micheline Kamber, Data Mining: Concepts and Techniques, 2nd edition, Elsevier: Morgan Kaufmann Publishers.
Grading 評量方式	◆attendance rate：10 % ◆The usual assessment：30 % ◆Midterm assessment：25 % ◆Final assessment：25 %　◆The others：10%
References 參考書目	Hand-Out and Web-site Materials
Contact with Teacher 老師聯絡資訊	Kuang-Chyi Lee, kclee@nfu.edu.tw, 05-6315379

Course Outline 課程進度	
Introduction to Data Mining and Knowledge Discovery from Data Data Preprocessing Binary image Data Warehouse and Technology Data Cube Computation and Data Generalization Mining Frequent Patterns, Associations and	Classification Prediction Accuracy and Error Measures Cluster Analysis Mining Stream Time-Series Sequence Data

Correlations	
Remarks 備註	

Courses taught in English

Course title 課程名稱	Engineering Analysis (工程分析)
Course Description 課程概述	If an engineer asked to solve an engineering problem (usually a physical nature), they first have to formulate the problem as a mathematical expression in terms of variable, functions, equations…and so on. Such an expression is known as a "mathematical model" to the given problem.
Course objective 課程目標	In this course, engineering analysis, it is a training to establish the connection between "real physic phenomenon" and its "mathematical model" in order to solve (and to analyze) engineering problems. It requires all four phases: 1.Obsvering- Observe the target's behavior and make assumptions 2. Modeling- The transition from physical situation to its mathematical formulations 3. Solving- The solution by a mathematical method (skill) 4. Examination- The physical interpretation of the result
Competence 核心能力	Transfer a engineering problem into mathematical model then solve it
Prerequisite Course(s) 先修課程或先備能力	Physics, Calculus, Engineering Mathematics
Teaching Strategies 教學方法	In-class notes and Case studies
Course Material 課程教材	Tailor-made teaching materials
Grading 評量方式	In-class Exams 15%*2, Mid-term Exam 30%, Final Exam 30%, Roll call 10%
References 參考書目	Advanced Engineering Mathematics, 10th edition, Erwin Kreyszig, Wiley
Contact with Teacher 老師聯絡資訊	mtlee@nfu.edu.tw, 05-6315388
Course Outline 課程進度	

Part-1: The Introduction to “Modeling” Part-2: 1st Order ODE Models Part-3: 2nd Order Homogeneous ODE Part-4: 2nd Order Homogeneous ODE Models – Free Oscillations	Part-5: Non-homogeneous ODE Part-6: Non-homogeneous ODE Models – Forced Oscillations Part-7: Linear System of ODE Part-8: Linear System of ODE Models – Multi-Systems Interaction
Remarks 備註	

Courses taught in English

Course title 課程名稱	Aircraft Stability and Control (飛機穩定性與控制)
Course Description 課程概述	This course gives a preliminary knowledge for further investigation in flight dynamic analysis and control law design of fixed-wing aircraft. The material covers the basic knowledge of aerodynamics, aircraft dynamics and generic flight control design issues. Flight mechanics is the major topics in this course.
Course objective 課程目標	1. Familiar with aircraft dynamics with configurations 2. Understanding flight dynamics in equations 3. Analyzing aircraft dynamics with software tools
Competence 核心能力	The abilities and skills should be learned in this course are to apply physics and mathematics to understand the dynamics of aircraft, and evaluate their stability with classical control theory.
Prerequisite Course(s) 先修課程或先備能力	1. Dynamics 2. Advanced mathematics 3. Classic control theory
Teaching Strategies 教學方法	Oral Lecture, Case Method and Panel Discussion
Course Material 課程教材	Flight Stability and Automatic Control, 2nd Ed., Robert C. Nelson, McGraw-Hill, ISBN 978-0070462731. 1992.
Grading 評量方式	Home assignments, mid-term report and final report and oral presentation.
References 參考書目	Lecturer’s hand out.

Contact with Teacher 老師聯絡資訊	Wen-Chi Lu Phone (O)05-631-5545, E-mail: luwenchi@nfu.edu.tw
Course Outline 課程進度	
1. Introduction to aircraft dynamics and stability (1 week) 2. The Atmosphere and Aerodynamics (1 weeks) 3. Static Stability and Control (3 weeks) 4. Mid-term report (1 week) 5. Rigid Equations of Motion and Stability Derivatives (3 weeks) 6. Flying Qualities (1 week) 7. Stability Augmentation (1 week) 8. Autopilot Design (1 week) 9. Final Report (1 week)	
Remarks 備註	

Courses taught in English

Course title 課程名稱	International Aviation Regulation (國際民航法規)
Course Description 課程概述	In the class, we will focus on aviation regulations; 1. Basic concepts of regulation 2. Civil Aviation Regulation System 3. Air rights and air traffic 4. FAR/EASA/International Civil Aviation Organization's historical origins and evolution 5. Evolution and current status of unmanned aircraft related regulations 6. Airport development and related regulations
Course objective 課程目標	Understand the regulation system and their development history in EASA/FAA and Taiwan
Competence 核心能力	Understand the regulation system and their development history in EASA/FAA and Taiwan
Prerequisite Course(s) 先修課程或先備能力	none
Teaching Strategies	Class Lecture and Student Project Presentation

教學方法	
Course Material 課程教材	Provided by Instructor
Grading 評量方式	Mid-Term Exam and Student Project Presentation
References 參考書目	民航法規 楊政樺 著 揚智出版社
Contact with Teacher 老師聯絡資訊	**Instructor:** C Y Lin **Office Hours:** by appointment or any time I'm in the office & available **Contact** me @ Frank.Lin@nfu.edu.tw

Course Outline 課程進度	
Basic Concepts of Regulation Civil Aviation Regulation System Air Navigation and Airline The origin and historical evolution of FAR/EASA	Evolution and current status of unmanned aerial vehicle regulations Airport Development and Related Regulations FAR91/135 regulations

Remarks 備註	

Courses taught in English

Course title 課程名稱	Advance SOC FPGA System Integration with Machine Learning （高等 FPGA 系統設計與實務）
Course Description 課程概述	This course is designed for graduate students who are interested in advanced SoC FPGA design concepts, design methodology, and basic concept of Machine Learning. In the meantime, several Labs about the Xilinx PYNQ tutorials related to AI and Machine Learning will be demonstrated. After that, several lectures with the related topics to OpenCL FPGA tutorials will be given. Of course, we will select some state-the-art researches for computational efficient algorithm in FPGA/ARM implementation and these topics will be assigned as a small colloquium for students. At the end, graduate students shall present their final projects and its implementation on ZYNQ or PYNQ FPGA.
Course objective 課程目標	The objective of Advance SOC FPGA System Integration with Machine Learning is a guidance how 21’s century SOC FPGA mythology could be applied to recent SoC FPGA platform, further leads to embedded system design at system level.
Competence 核心能力	

Prerequisite Course(s) 先修課程或先備能力	HDL Language (VHDL or Verilog) CPLD/FPGA Implantation
Teaching Strategies 教學方法	Lectures and Labs
Course Material 課程教材	● Power Point Slides ● FPGA labs ● PYNQ Labs ● Machine Learning Labs
Grading 評量方式	Home work assigments 20% Mid-term Presentation 20% Implementation 30% Presentation 10% Term 20%
References 參考書目	● Kastner R., Matai J. and Neuendorffer S. “Parallel Programming for FPGAs”, Kastner Research Group 2018 ● The Zynq Book, http://www.zynqbook.com/ 2018. ● S. Palnitkar, “Verilog HDL: A Guide to Digital Design and ● Synthesis”, Prentice Hall, 2003, Second Edition
Contact with Teacher 老師聯絡資訊	+886-5-6315631 ccsun@nfu.edu.tw Prof. Dr.-Ing. Chi-Chia Sun
Course Outline 課程進度	
1. Introduction of SoC FPGA 2. Introduction of Machine Learning 3. Xilinx PYNQ Labs 4. Colloquium and Mid-Report 5. OpenCL@SDSOC 6. Colloquium 7. Final-Project and Presentation	
Remarks 備註	

Courses taught in English

Course title 課程名稱	Heterogeneous Access Technologies of Mobile Broadband Networks (行動寬頻網路異質存取技術)
Course Description 課程概述	The course is a course project supporting by MOE (ministry of education), Taiwan. It will introduce the fundamental of heterogeneous mobile networks. Moreover, LWA (LTE-WLAN aggregation) small Cell,

	QoS of multimedia streaming, load scheduling for heterogeneous networks are included. Moreover, the lab experiences will train the students' practical skills. LWA-small cell installation, interference measurement, QoS performance measurement and load scheduling for multimedia streaming are included in the lab experiences. Finally, the students will propose a project of heterogeneous mobile networks with team work.
Course objective 課程目標	1. Training the basic concepts of mobile broadband networks and heterogeneous access technologies. 2. Training the basic skills of installation, measurement and load scheduling for LWA-small cells.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	Introduction to computers Programming Language
Teaching Strategies 教學方法	● Lecture ● Lab Experience with Project-Based Learning
Course Material 課程教材	The project and own teaching materials
Grading 評量方式	● Participation: 10% ● Experiment: 40% ● Midterm: 20% ● Final Project: 30%
References 參考書目	
Contact with Teacher 老師聯絡資訊	hksu@nfu.edu.tw 05-6315619

Course Outline 課程進度	
1. Introduction to heterogeneous mobile networks 2. HetNet heterogeneous mobile networks 3. ICIC interference coordination and multi-point coordination of CoMP 4. ITRI LWA-Small Cell's heterogeneous network experiment platform 5. QoS of multimedia video streaming over heterogeneous networks 6. Offloading on the LWA-Small Cell experimental platform (Off-loading) 7. Load Scheduling on the LWA-Small Cell experimental platform 8. Final Project	

Remarks 備註	

Courses taught in English

Course title 課程名稱	Analog Integrated Circuit （類比積體電路）
Course Description 課程概述	In this course, students will learn the analysis and design of analog CMOS integrated circuits. Because analog design requires both intuition and rigor, each concept is first introduced from an intuitive perspective and subsequently treated by careful analysis.
Course objective 課程目標	The objective is to develop both a solid foundation and methods of analyzing circuits by inspection so that students learn what approximations can be made in which circuits, and how much error to expect in each approximation. This approach also enables students to apply the concepts to bipolar circuits with little additional effort
Competence 核心能力	Amplifier analysis and design of analog CMOS integrated circuits
Prerequisite Course(s) 先修課程或先備能力	Electronics
Teaching Strategies 教學方法	General lecturing and inquiry-based learning
Course Material 課程教材	Design of Analog CMOS Integrated Circuits
Grading 評量方式	1. Midterm exam 40%; 2. Final exam 60%
References 參考書目	NA
Contact with Teacher 老師聯絡資訊	TEL: 05-6315667 (Office) Email: wkkuo@nfu.edu.tw

Course Outline 課程進度	
1. Introduction 2. Basic MOS device physics 3. Single stage amplifier 4. Differential amplifier	5. Passive and active current mirror 6. Frequency response 7. Feedback 8. Operational amplifier

Midterm exam	Final exam

Remarks 備註	

Courses taught in English

Course title 課程名稱	Optical engineering in crystal (晶體光電工程)
Course Description 課程概述	As a course in electro-optics for electrical engineering and applied physics students, it presents the propagation of laser radiation in various optical media and instructs in the analysis and design of electro-optical devices. This course presupposes an introduction to Maxwell's equations in electricity and magnetism as well as some mathematical background in Fourier integrals, matrix algebra, and differential equations. Contents, abridged: Electromagnetic fields, Propagation of laser beams, Jones calculus and its application to birefringent optical systems, Electromagnetic propagation in periodic media, Electro-optic devices, and Acousto-optics.
Course objective 課程目標	This course has two primary objectives: to present a clear physical picture of the propagation of laser radiation in various optical crystal and to teach students how to analyze and design electro-optical devices.
Competence 核心能力	Competences of 1, 2, and 4.
Prerequisite Course(s) 先修課程或先備能力	Engineering Mathematics, Calculus
Teaching Strategies 教學方法	Lecture
Course Material 課程教材	A. Yariv and Poche Yeh, “Optical Waves in Crystal”, John Wiley and Sons
Grading 評量方式	1. Mid-term report 40% 2. Final Participation 60%
References 參考書目	H. Haus, “Waves and Fields in Optoelectronics”
Contact with Teacher 老師聯絡資訊	Email: eocwc@nfu.edu.tw

Course Outline 課程進度	
1.Electromagnetics 2.Propagation of laser beams 3.Jones calculus 4.Optical birefringence in crystal 5.Electro-optical effect 6.Acousto-optical effect	
Remarks 備註	

Courses taught in English

Course title 課程名稱	Internet of Things (物聯網)
Course Description 課程概述	Basic principle and example of EPCGlobal IOT system will be introduced. Several IOT applications and papers are presented in this course.
Course objective 課程目標	Students will learn and prepare for International EPCglobal Certification. Students will also implement a simple IOT application project in this course.
Competence 核心能力	Viewing subject with an International perspective. Able to plan and work on a project. Specialized knowledge of Information engineering.
Prerequisite Course(s) 先修課程或先備能力	NULL
Teaching Strategies 教學方法	Courses. Real system implementation.
Course Material 課程教材	Self-made material.
Grading 評量方式	Certification 45% Implementation 45% Term 10%
References 參考書目	NULL
Contact with Teacher 老師聯絡資訊	E-Mail : jianms@nfu.edu.tw
Course Outline 課程進度	
Before Midterm	After Midterm

1. Introduction 2. EPC Architecture 3. RFID Architecture 4. EPCGlobal Certification	5. IOT Systems 6. IOT Real Applications
Remarks 備註	NULL

Courses taught in English

Course title 課程名稱	Internet-of-Things Security (物聯網安全)
Course Description 課程概述	This course introduces the security concerns and techniques related to IoT.
Course objective 課程目標	The students are expected to understand the weakness of current IoT systems. In the future, they should be able to improve those IoT systems.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	Computer networking
Teaching Strategies 教學方法	Lecture. Practice.
Course Material 課程教材	Slides made by the teacher
Grading 評量方式	Mid-term 30% Final-term 30% Others 40%
References 參考書目	
Contact with Teacher 老師聯絡資訊	yys@nfu.edu.tw 05-6315577

Course Outline 課程進度	
1. Introduction of Internet-of-Things (IoT) 2. Security concerns related to IoT 3. Application development lifecycle 4. Software security analysis 5. Encryption for IoT sensors 6. Security concerns related to IoT networking technology 7. Security concerns related to IoT network	8. Security concerns related to IoT server and cloud 9. Security concerns related to smart grid 10. Security concerns related to Online to offline (O2O) 11. Security concerns related to IoT based wearables 12. Security concerns related to IoT Healthcare

architecture	13. Security concerns related to Internet of Vehicle
Remarks 備註	

Courses taught in English

Course title 課程名稱	Database Management (資料庫管理)
Course Description 課程概述	This course aims at giving students an understanding of advanced database concepts, terminologies and technologies.
Course objective 課程目標	The student will learn the theoretical and practical knowledge about data processing from both the technical and organization perspectives.
Competence 核心能力	Database management, data processing, big data analysis.
Prerequisite Course(s) 先修課程或先備能力	NA
Teaching Strategies 教學方法	Lectures, discussions
Course Material 課程教材	Ref: Jeffrey D. Ullman, Jennifer Widom, A First Course in Database Systems.
Grading 評量方式	Exams, projects.
References 參考書目	NA
Contact with Teacher 老師聯絡資訊	ythou@nfu.edu.tw (侯雍聰)

Course Outline 課程進度	
Week 1 Database System Introduction Week 2 Overview of a Database Management System Week 3 Relational Model of Data Week 4 Algebraic Query Language Week 5 Design Theory of Relational Database Week 6 Database Schema	Week 10 Advanced Data processing Week 11 Big Data I Week 12 Big Data II Week 13 Big Data III Week 14 Big Data analysis Week 15 Map and Reduce Week 16 RDD

Week 7 High-Level Database Model Week 8 E/R Model Week 9 Midterm	Week 17 Spark system Week 18 Final Exam
Remarks 備註	

Courses taught in English

Course title 課程名稱	Machine Learning and Big Data (機器學習與大數據)
Course Description 課程概述	The course will discuss recent applications of machine learning, such as to robotic control, data mining, autonomous navigation, speech recognition, and text and web data processing.
Course objective 課程目標	Help students obtain the skills of: 1. Processing of Big Data 2. Ability to adopt algorithms, such as linear regression, decision trees, neural network, etc.
Competence 核心能力	Data processing, Algorithms
Prerequisite Course(s) 先修課程或先備能力	Knowledge of basic computer science principles and skills, at a level sufficient to write a reasonably non-trivial computer program.
Teaching Strategies 教學方法	Instructor introduces the concepts and provides some workshop for students.
Course Material 課程教材	Data Science from Scratch, Joel Grus, O'Reilly
Grading 評量方式	Attendance 20%, Workshop 20%, Midterm exam 30%, Final-term project 30%
References 參考書目	
Contact with Teacher 老師聯絡資訊	05-6315742 drhu@nfu.edu.tw

Course Outline 課程進度	
Big Data • Data Source • Data Quality • Data Integration	• Python fundamental • Visualizing Data • k_-Nearest Neighbors • Linear Regression

• Open Data • Data Modeling Machine Learning	• Decision Trees • Neural Networks • Clustering
Remarks 備註	

Courses taught in English

Course title 課程名稱	Production and Operations Management (生產作業與管理)
Course Description 課程概述	This course covers the core topics of production and operations management, including forecasting, capacity planning, inventory, scheduling and supply chain management.
Course objective 課程目標	The objective of this course is to foster an understanding of production and operations management tasks in students.
Competence 核心能力	Management, Mathematics and System Concept
Prerequisite Course(s) 先修課程或先備能力	NA
Teaching Strategies 教學方法	Lectures, discussions and presentation
Course Material 課程教材	Operations Management 13edition, William J. Stevenson
Grading 評量方式	Midterm 30%, Final 30%, Homework 30% and Participation 10%
References 參考書目	Operations and Supply Chain Management 15edition, F. Robert Jacobs, Richard B. Chase
Contact with Teacher 老師聯絡資訊	Teacher: Wen-Hung Kuo Office: CMA-0919 Tel: 05-6315733 Email: whkuo@nfu.edu.tw
Course Outline 課程進度	
Ch 1 Introduction to Operations Management Ch 2 Competitiveness, Strategy, and Productivity Ch 3 Forecasting Ch 5 Strategic Capacity Planning for Products and Services	Ch 13 Inventory Management Ch 14 JIT and Lean Operations Ch 15 Supply Chain Management Ch 16 Scheduling

Ch 11 Aggregate Planning and Master Scheduling Ch 12 MRP and ERP	
Remarks 備註	

Courses taught in English

Course title 課程名稱	Web Technology Application and Integration (Web 技術應用與整合)
Course Description 課程概述	The Application and Integration of Web Technology course is designed to prepare students for professional web design work. The class will be a mix of not only theoretical and soft skills, but also practical back-end techniques in web design. Upon completion of this course, students should have a thorough knowledge of all areas of web page design. Topic of back-end techniques includes building IIS web servers, ASP.NET scripting language, and MSSQL database. By the end of this course, students should have a solid understandingof the web design industry and modern web design techniques.
Course objective 課程目標	This course presents the process of designing and developing web sites from conception through the publication. Students gain valuable hands-on lab experience using web authoring software. The objectives of course are as follows: 1. Integrating HTML5 and CSS3 with ASP.NET MVC into web page design 2. Understanding computer programming languages using C# 3. Advanced use of jQuery, HTML5, and CSS3 effectively to create interactive and dynamic websites 4. Building responsive web pages with Bootstrap 4 5. Integrating client-side and server-side scripting into a website 6. Understanding of the framework of ASP.NET MVC in site development
Competence 核心能力	1. Logical Thinking and Analysis Competency : 8 point 2. Problem Solving Competency : 8 point 3. Information System Application and Integration Competency : 9 point 4. Internationalization and Foreign Language Competency : 9 point

Prerequisite Course(s) 先修課程或先備能力	We strongly suggest that students should have a basic working knowledge of HTML5 and CSS3 coding as well as RWD web design.
Teaching Strategies 教學方法	Material for this course will be presented using multiple teaching approaches, including lecture and discussion, exploration and inquiry, field experiences, cooperative group work, and demonstrations.
Course Material 課程教材	Title: ASP.NET MVC 5 with Bootstrap and Knockout.js Publisher: O'Reilly Media, Inc. ISBN: 978-1-78839-731- Author: Jamie Munro
Grading 評量方式	Students are evaluated on the basis of their timely and effective completion of homework assignments and projects. The detailed items are summarized as follows: 1. Class Participation* 30% 2. Project 30% 3. Homework 40% *Participation includes: presence in class (chat, responses to questions, actively engaged, etc.), attendance, and Discussion Board activity (postings and comments).
References 參考書目	● HTML5 & CSS3 Visual QuickStart Guide (7th Edition) by Elizabeth Castro, Bruce Hyslop ONLINE VERSION ● Bootstrap By Example by Silvio Moreto ● Learning Bootstrap 4 by Matt Lambert
Contact with Teacher 老師聯絡資訊	Yu-Feng Lan Email: yflan@nfu.edu.tw Office: C-MA-0912 Office Phone: 05-6315745

Course Outline 課程進度	
1. Introduction to MVC	9. URL Routing Using Attributes
2. Introduction to Bootstrap	10. Fat Model, Skinny Controller

3. Introduction to Knockout.js 4. Working with a Database 5. Listing, Sorting and Paging Through Tables 6. Working with Forms 7. Server-Side ViewModels 8. Introduction to Web API	11. Building a Shopping Cart 12. Building the Data Model 13. Implementing the Layout 14. Lists of Books 15. Adding Items to the Cart 16. Project and team group discussion
Remarks 備註	

Courses taught in English

Course title 課程名稱	Technology Management （科技管理）
Course Description 課程概述	This course provides a series of strategic frameworks for managing high-technology businesses. The emphasis throughout the course is on managing technology-oriented established firms, or starting technology-driven startups. The class consists of lectures, case studies, and discussion among students. As result, students will be asked to analyze, discuss, and present the selected articles during the class.
Course objective 課程目標	After this class, students will be able to (1) select and apply disciplinary knowledge in discussing and creating innovative technological solutions; (2) research, analyze and propose solutions to technology business issues; (3) prepare written professional reports; and (4) deliver well-structured presentations.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	No
Teaching Strategies 教學方法	Lectures, presentations, and discussion

Course Material 課程教材	• Schilling, M. A. (2012). Strategic Management of Technological Innovation (4th ed), US: McGraw-Hill Education. • Assigned articles and cases
Grading 評量方式	Classroom participation .....30% Mid-term exam.....20% Final Project .....30% Final Exam 20%
References 參考書目	Fortune; Harvard Business Review; Sloan Management Review; California Management Review; Bloomberg; Inc.; Fast Company
Contact with Teacher 老師聯絡資訊	

Course Outline 課程進度	
I. The nature of technological innovation II. The strategic impact of technological change III. Technology and competitive advantage IV. Innovation patterns V. Emerging vs. established technologies VI. Technological innovation and strategic management VII. Managing technology strategies and the innovation process VIII. Technological innovation and entrepreneurship IX. Lessons from technological firms	
Remarks 備註	

Courses taught in English

Course title 課程名稱	Behavioral Finance (行為財務)

Course Description 課程概述	Behavioral finance plays a more and more important role in the development of financial management and investment. This course focused on the behavioral factors which influence financial markets and investors. People are all prone to having psychological preconceptions or biases that make us behave in certain ways. These biases influence how we assimilate the information we come in contact with on a daily basis.
Course objective 課程目標	This course targets the link between the peculiarities of human behavior and aspects of financial and investment management, as well as corporate and risk management. Students should understand and develop skills for taking into account behavioral factors in various aspects of financial markets and operation of corporations.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	No
Teaching Strategies 教學方法	Oral and discussion
Course Material 課程教材	Nofsinger, R. John, 2001,*Investment Madness*, Prentice Hall, 2001 Journal of behavioral finance
Grading 評量方式	mid-exam 30% final exam 40% presentation and participation 30%
References 參考書目	Montier, James, 2002, *Behavioral Finance: Insight into irrational Minds and Markets*, John Wiley & Sons, Ltd
Contact with Teacher 老師聯絡資訊	chilin@nfu.edu.tw

Course Outline 課程進度	
X. Your Behavior matter XI. Overconfidence XII. Overconfidence and investing XIII. Status quo- or what I own is better XIV. Seeking pride and avoiding regret XV. Double or nothing XVI. Social aspects of investing XVII. Mental accountingr	XVIII. Mental accounting and diversification XIX. That's not the way I remember it XX. What I know is better XXI. The internet investor XXII. Exuberance on the net XXIII. Self-control or the lack of it XXIV. Battling your biases

Remarks 備註	

Courses taught in English

Course title 課程名稱	Strategic Management (策略管理)
Course Description 課程概述	Lecture and case study will be used primarily. First of all, Professor will introduce overall content of each chapter by power point presentation. Then students will be assigned to do case study. Besides, paper work will be completed after class.
Course objective 課程目標	This course aims to introduce the topics of strategic management, including the introduction of strategic management, external environment analysis, international resources analysis, business-level strategy (strategic positioning and competitive advantages, etc.), corporate-level strategy (growth strategy and diversification, etc.), strategic alliance, merger and acquisition strategy, international strategic management, strategy innovation and entrepreneurship and strategy implementation. Students can comprehend the importance and impacts of strategic management on the operations of contemporary firms, and learn to formulate an appropriate strategy of a company. In addition, by discussing real cases, the students also can understand the practices of strategy of firms. By doing so, the students can apply the concepts of strategy in analyzing real cases.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	No
Teaching Strategies 教學方法	Lecturing, Case Analysis, Field trip, and Interview with entrepreneur
Course Material 課程教材	Hill, Schilling, and Jones (2017), Theory of Strategic Management with cases, 13 th edition, South-Western Cengage Harvard Business Review, Journal of Strategy Management
Grading 評量方式	Case analysis 30%、Participation 30%、Final Project 40%
References 參考書目	Hill, Schilling, and Jones (2017), Theory of Strategic Management with cases, 13 th edition, South-Western Cengage
Contact with Teacher 老師聯絡資訊	evehsu@ms22.hinet.net
Course Outline	

課程進度	
Introduction to the cause Ch1 Strategic Leadership Case 1: GE's Ecomagination Strategy Ch2 External Analysis Case 2: The U.S. Airline Industry Ch3 Internal Analysis Case 3: Competitive Advantage at Starbucks Ch4 Building Competitive Advantage Through Functional-Level Strategy Case 4: Lean Production at Virginia Mason Ch5 Building Competitive Advantage Through Business-Level Strategy Case 5: Lululemon Ch6 Business- Level Strategy and the Industry Environment Case 6: Consolidating Dry Cleaning	Ch7 Strategy and Technology Case 7: The Rise of Cloud Computing Ch8 Global Strrategy Case 8: Avon Products Ch9 Corporate-Level Strategy: Horizontal Integration, Vertical Integration, and Strategic Outsourcing Case 9: The Rapid Consolidation of the U.S. Airline Industry Ch10 Corporate-Level Strategy: Formulating and Implementing Related and Unrelated Diversification Case 10: VF Corp. Acquires Timberland to Realize the Benefits from Related Diversification
Remarks 備註	

Courses taught in English

Course title 課程名稱	Information Managemen (資訊管理)
Course Description 課程概述	a. IT/IS and strategic advantage- strategy formulation for IT/IS; conceptual models for identifying strategic IT/IS opportunities and applications, e.g. stage hypotheses, applications portfolio, strategic grid, critical success factors. b. Analysis and review of some major decisions to be taken with regard to deployment of IS/IT resources- e.g. rightsizing, end-user computing, outsourcing, business process re-engineering. c. Management of IT/IS investment- issues related to information value and IT/IS value; management if IT/IS costs and benefits; review of traditional and recent investment appraisal techniques; risk in IT/IS projects. d.Structure and control of IT/IS activities- location in the organization;

	organization of the IS/IT department; steering committees; IT/IS director; spending patterns; appraisal of IS/IT projects; responsibility accounting for IT/IS projects.
Course objective 課程目標	a.To enable perception of why, where and how information technology/systems should be linked with formulation of business strategy. b.To examine from the strategic perspective the organization, control, monitoring and evaluation of information technology/systems activities. c.To understand the main issues concerned with the economics aspects of information technology/systems.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	
Teaching Strategies 教學方法	Oral presentation, case discussion
Course Material 課程教材	Business Driven Information Systems, the fifth edition
Grading 評量方式	Presentation 40% Participation and Discussion 20% mid-exam/report 20% final-exam/report 20%
References 參考書目	
Contact with Teacher 老師聯絡資訊	lgcwow@gmail.com
Course Outline 課程進度	

Foundation Concepts	Foundations of Information systems in business competing with information technology
	information technology
information technology	computer hardware computer software data resource management telecommunications and networks
business applications	e-business system

	enterprise business system electronic commerce systems decision support systems
development process	developing business/IT strategies developing business/IT solutions
Manaement Challenges	security and ethical challenges enterprise and global management of information technology
Remarks 備註	

Courses taught in English

Course title 課程名稱	Organizationl Behavior (組織行為)
Course Description 課程概述	Organizational behavior (OB) studies the influence that individuals, groups, and structure have on behavior within organizations. The chief goal of OB is to apply that knowledge toward improving an organization's effectiveness.
Course objective 課程目標	In this course, students will learn motivation theory and application, how decisions are made in organizations, foundations of team behavior, communication skills and techniques, leadership theories, group dynamics, conflict management, work design, organizational change and development.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	None
Teaching Strategies 教學方法	Organizational behavior lends itself to a heavy emphasis on experiential exercises. The course will consist of lecture, self-assessment, discussion, cases and application through experiential exercises for both the individual and group. Student-led exercises will be a major part of the student learning experience. Students also have an opportunity to exercise the OB concepts in a learning group.
Course Material 課程教材	Organizational Behavior (15th edition) By Stephen P. Robbins and Timothy A. Judge
Grading 評量方式	Class Participation 30% Discussions and Analyses 30% Final Project 40%

References 參考書目	
Contact with Teacher 老師聯絡資訊	graceliu@nfu.edu.tw

Course Outline 課程進度	
1 **Introduction to Organizational Behavior** Contributing Disciplines to the OB Field	10 **Communication Processes** Organization Communication
2 **Personality Traits and Work Values** Linking an Individual's Personality and Values to the Workplace	11 **Leadership** Traditional and Contemporary Approaches to Leadership
3 **Individual Perception and Decision-Making** The Link Between Perception and Individual Decision Making	12 **Power and Politics** Causes and Consequences of Political Behavior
4 **Job Attitudes** Attitudes and Job Satisfaction	13 **Conflict and Negotiations** The Conflict Process
5 **Motivation I: Basic Concepts** Early and Contemporary Theories of Motivation	14 **Structure and Organizational Behavior** Common Organizational Design
6 **Motivation II: Applied Concepts** Using Reward to Motivate Employees	15 **Organizational Culture** Creating and Sustaining Culture
7 **Moods, Emotions and Organizational Behavior** OB Applications of Emotions and Moods	16 **Organizational Change** Approaches to Managing Organizational Change
8 **Groups** Group Properties	17 **Final Project Presentation**
9 **Teams** Types of Teams	18 **Final Project Presentation**

Remarks 備註	

Course title 課程名稱	The Theory and Practice of Investment (投資學理論與實務)
Course Description 課程概述	This course is a graduate-level investment course that focuses on practical applications as well as analytical analyses of investment theories. The major topics include portfolio theory, factor pricing models and investment evaluation.
Course objective 課程目標	Students will understand how to build a well-diversified investment portfolio, how to select securities among each asset classes, and how to evaluate the portfolio performance.
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	A basic understanding on statistics will be helpful but is not required
Teaching Strategies 教學方法	
Course Material 課程教材	Zvi Bodie, Alex Kane, and Alan J. Marcus (2013), Essentials of Investments, ninth Edition, McGraw-Hill.
Grading 評量方式	Mid-term Exam. 35% Final Exam. 35% Homework and Presentation 15% Regular attendance 15%
References 參考書目	
Contact with Teacher 老師聯絡資訊	Email: yawenlai@nfu.edu.tw

Course Outline 課程進度	
Course Introduction Portfolio Theory: Risk and Return Portfolio Theory: Diversification Portfolio Theory: CAPM and APT Portfolio Theory: EMH Portfolio Theory: Behavior Finance Equity Valuation Portfolio performance evaluation	

Remarks 備註	

Courses taught in English

Course title 課程名稱	Financial econometrics (財金計量)
Course Description 課程概述	Financial Econometrics is a one-semester course taught to the first year students of the NFU Master programme in financial managemen. Particularly, this course is designed to international students who'd like to study the essential knowledge and tools for working with financial data, including the return forecasting, volatility and econometrics of asset pricing, such as testing the market models. This course focuses on the empirical techniques which are mostly used in the analysis of financial markets and how they are applied to actual data. The course starts with the overview of financial data. It covers the event-study methodology, and continues with testing market models and factor models. We then proceed to analyze return predictability, volatility effects of the market data (asymmetric GARCH), and market interdependence. A special attention is paid to nonlinear models, from basic threshold formulations to more advanced techniques like Markov switching model and Kalman filter. All the models are accompanied with real-data examples in standard computer packages.
Course objective 課程目標	1. Understand how to analyze financial data properly. 2. Understand how to apply software to perform a analysis
Competence 核心能力	Data analysis and explanation
Prerequisite Course(s) 先修課程或先備能力	Statistics
Teaching Strategies 教學方法	Taught-based course with a term project by using real financial data from TEJ
Course Material 課程教材	Tsay, R. (2010) Analysis of financial time series, Cambridge, Mass.Wiley.
Grading 評量方式	Assignmnet, Course attendance and participation 30% Midterm report: 30% Term project and presentation: 40%
References	Enders, W. (2010) Applied econometric time series, Hoboken, NJ :Wiley.

參考書目	
Contact with Teacher 老師聯絡資訊	jywang@nfu.edu.tw

Course Outline 課程進度	
1. Financial Time Series and Their Characteristics (2 weeks) How to obtain the data from database, and how to identify the goodness of the data. 2. Linear Time Series Analysis and Its Applications (2 weeks) To understand how to examine the fratures of time series data, and identify the stationary of the financial data. 3. How to use Eviews in basic analysis (2 weeks) Application of empirical data by using Eviews. 4. Conditional Heteroscedastic Models (3-4 weeks) Introduction of ARCH and GARCH-related models is presented in the weeks, and software application of the models are shown. 5. Asignment and test (1 week) 6. High-freqncncy data analysis and market microstructure (2 weeks) Introduction of high-frequency data and how to wash the data are exhibited. 7. Multivariate Time Series Analysis and Its Applications (2 weeks) 8. Markov Chain Monte Carlo Methods with Applications (2 weeks) Why do we need to apply markov switching model in the empirical data? How do we use it to explain the real financial data? 9. Extreme value theory and risk management (2 weeks) The insight of extreme value theory. The application of extreme value to risk management. 10. Final project and presentation	

Remarks 備註	

Courses taught in English

Course title 課程名稱	Production Management and Practice (生產管理與實務)
Course Description 課程概述	This course introduces students to Production Management with the emphasis on analytical methods and the use of computerized tools.
Course objective 課程目標	1. To understand the theoretical basis and basic concepts of Production Management 2. To be familiar with the analytical methods and their applications in the realm of products and services
Competence 核心能力	● Practical skill set for the job of Production Management ● Good command of computerized tools
Prerequisite Course(s) 先修課程或先備能力	None
Teaching Strategies 教學方法	1. Lecturing and discussion 2. Utilization of computerized tools 3. Student presentation and discussion of assigned cases, readings and problems
Course Material 課程教材	Operations Management, 13rd ed., William J. Stevenson, McGraw Hill
Grading 評量方式	● Midterm exam: 40% ● Presentation: 45% ● Participation: 15%
References 參考書目	None
Contact with Teacher 老師聯絡資訊	yinglienlee@gmail.com

Course Outline 課程進度	
● Chapter 1 Introduction to Operations Management ● Chapter 2 Competitiveness, Strategy, and	● Chapter 8 Location Planning and Analysis ● Chapter 11 Aggregate Planning and

Productivity ● Chapter 3 Forecasting ● Chapter 5 Strategic Capacity Planning for Products and Services ● Chapter 6 Process Selection and Facility Layout	Master Scheduling ● Chapter 12 MRP and ERP ● Chapter 13 Inventory Management ● Chapter 16 Scheduling
Remarks 備註	

Courses taught in English

Course title 課程名稱	Applied Statistics (應用統計學)
Course Description 課程概述	1. Introduction of statistical theory. 2. Computer software coding.
Course objective 課程目標	Application of statistical models for solving management problems.
Competence 核心能力	Statistical models and computer coding.
Prerequisite Course(s) 先修課程或先備能力	None.
Teaching Strategies 教學方法	Lecture and computer software application.
Course Material 課程教材	Probability and Statistics with Integrated Software Routines by Deep, Ronald. ISBN: 9780080480381
Grading 評量方式	Homework assignment 30%, Mid-term exam. 30%, Final exam. 40%
References 參考書目	Mathematical statistics with applications by Wackerly, Mendenall and Scheaffer.
Contact with Teacher 老師聯絡資訊	Email:jphuagn@nfu.edu.tw Tel:05-6315714
Course Outline 課程進度	

1. Coding on Excel. 2. Statistical estimation. 3. Statistical tests. Mid-term exam. 4. Analysis of Variance. 5. Chi-squares tests. 6. Regression models. 7. Data clustering. Final exam.	
Remarks 備註	

Courses taught in English

Course title 課程名稱	Simulation (模擬學)
Course Description 課程概述	This course is intended to give an up-to-date treatment of all the important aspects of simulation modeling study and applications, including discrete event simulation methodology, introduction of simulation languages, and statistical aspects of simulation. About 40% of class time will be devoted to simulation software learning.
Course objective 課程目標	1. To be able to do simulation 2. To understand the development of simulation and simulation-related research.
Competence 核心能力	Simulation Programming Ability Problem Formulation Ability
Prerequisite Course(s) 先修課程或先備能力	Statistics Any programming Language
Teaching Strategies 教學方法	Lecture Software Practice Literature Review
Course Material 課程教材	Getting start with Automod Computer Simulation in Management Science
Grading 評量方式	Homework 60% Final Project 30%

	Participation 10%
References 參考書目	
Contact with Teacher 老師聯絡資訊	chh@nfu.edu.tw

Course Outline 課程進度	
Introduction Simulation Package-AutoMod	Computer Simulation in Management Science Simulation Literature Review
Remarks 備註	

Courses taught in English

Course title 課程名稱	Networks and Logistics (網路與運籌)
Course Description 課程概述	Study mathematical programming models, methods and applications for networks and logistics
Course objective 課程目標	To apply mathematical programming models and methods for solving practical networks and logistics problems
Competence 核心能力	1. Mathematic methods and statistical techniques 2. Decision-making and planning techniques 3. Innovative thinking and the ability to solve problems independently 4. Applying industrial engineering and management knowledge to analyze and solve practical problems 5. International language communication skills
Prerequisite Course(s) 先修課程或先備能力	none
Teaching Strategies 教學方法	Lecture, computer practice, paper discussion

Course Material 課程教材	Class notes
Grading 評量方式	Midterm 30%, Homework and paper discussion 30%, Final 40%
References 參考書目	none
Contact with Teacher 老師聯絡資訊	yhsieh@nfu.edu.tw http://sparc.nfu.edu.tw/~yhsieh/3w.htm

Course Outline 課程進度	
（Part 1: week 1 to week 9） **1. Introduction of Graphs & Networks** A preview of graph & network problems to be studied in this course **2. Network Models** Transportation problem Linear assignment problem Airline crew assignment Generalized assignment problem Quadratic assignment problem **3. Set Covering Problem** Mathematical model Applications （Part 2: week 10 to week 18）	**4. Location Problems** Location without calculus Webers Problem (location in the plane) Location of multiple facilities in the plane Median problem in a network Center problem in a network Simple (uncapacitated) plant location **5. Assembly Line Balancing** Math programming model & methods: Kilbridge & Wester Ranked positional weight method Reversed ranked positional weight method COMSOAL Genetic algorithm
Remarks 備註	

Courses taught in English

Course title 課程名稱	Project Discussions (II) 專題討論(二)
Course Description 課程概述	• Course content: What is the basic content of the course and what makes it important or interesting? How does the course fit into the context of the discipline?

	• Learning objectives*:* What should students be able to do by the end of the course? Objectives are most helpful when they are expressed in terms of knowledge and skills that can be readily identified and assessed. For example, the ability to recognize, differentiate, apply or produce is much more readily identifiable than the ability to appreciate or understand. • Characteristics of class meetings: What types of activities should students be prepared for? Discussion? Lecture? Small groups? Student presentations?
Course objective 課程目標	The course aims to prepare, develop, determine and initially exemplify a design programme. The course also aims to develop the ability to document and justify design work. Once the course has been passed, students should be able to: 1. Develop and initially determine and exemplify a design programme based on their own selected project brief (What). 2. Develop and initially reflect on methods and working processes with reference to the planning and determination of a design programme (How). 3. Present, justify and critically discuss students' own proposed design programme (Why).
Competence 核心能力	1. Planning and development of a design programme 2. Experimental work in studio, workshops and laboratories Read two articles from a professional journal and write a one page report in unbound format and other formats.
Prerequisite Course(s) 先修課程或先備能力	1. Design Research Methods 2. Project Discussions (I)
Teaching Strategies 教學方法	Oral presentations and interactive discussions
Course Material 課程教材	Teacher's prepared materials
Grading 評量方式	1. Grades will be determined by a student's performance on a midterm (15%), a final (20%), individual written assignments (20%), and a group project and assignments (45%). The project grades will be as a result of 1) individual presentations, 2) demos, 3) project write-ups, and 4) ratings given by the other members of the project team. The class will *not* be graded on a curve. The final grades will be

	determined by the standard scale of 90% = A-, 80% = B-, etc. 2. Individual homework should be done independently. It is fine to discuss the general techniques and methods required, but you must do your own work in solving the problems and writing up the solutions. *Cheating will not be excused* and will lead to failure in the course. After you turn in your individual homework, you may use this information in the group, combined with others homework, to aid in the project redesigns.
References 參考書目	
Contact with Teacher 老師聯絡資訊	My research office is located in A&H building 5TH Floor. Office telephone: 05-631-5878 Email: stshen@nfu.edu.tw

Course Outline 課程進度	
Lecture Week 1-2: Course Introduction Lecture Week 3: Fundamental Concepts Lecture Week 4: Studying Individuals based on each pupil's chosen topic Lecture Week 5: Analysing the detailed contents and structures Lecture Week 6-7: Preparing and Working with the intended presentation Lecture Week 8: Visualizing and finalizing the work Week 9 Mid Term Exam	Lecture 10-11: Discussions and feedbacks Lecture 12: Studying the second chosen topic Lecture 13: Analysing detailed contents and structures Lecture 14-15: Preparing and Working with the intended presentation Lecture 16-17: Visualising and finalizing the work Week 18 Final Term Exam

Remarks 備註	

Courses taught in English

Course title 課程名稱	Research of Interactive Technology and Applications （互動科技應用研究）
Course Description 課程概述	
Course objective 課程目標	Preparing the capability of theory and practice for visual communication design, interaction design
Competence 核心能力	
Prerequisite Course(s) 先修課程或先備能力	Basic capabilities: Design authoring tool
Teaching Strategies 教學方法	Lecture, project practice
Course Material 課程教材	The Design of Everyday Things
Grading 評量方式	The course is examined through: 1.participation in class: 40% 2.midterm exam 30%: implementation of project work and through written examination 3.final exam 30%: implementation of project work and through written examination (or written report or presentation)
References 參考書目	
Contact with Teacher 老師聯絡資訊	Tel: 05-6315879

Course Outline 課程進度	
Week 1: Syllabus	
Week 2: Lecture/ Chapter discussion	
Week3: Lecture / Chapter discussion	
Week4: Guest speech / Case study - towel design	

Week5: Off-campus teaching	
Week6: Case study / Case study of practice design for Creative industry	
Week7: Lecture / Chapter discussion	
Week8: Presentation: Case study of practice design for Creative industry	
Week9: Midterm exam	
Week10: Lecture / Chapter discussion	
Week11: Lecture / Chapter discussion	
Week12: Lecture / Chapter discussion	
Week13: Lecture / Chapter discussion	
Week14: Guest speech / Interaction design	
Week15: Practice project: APP UI design	
Week16: Practice project: APP UI design	
Week17: Presentation: Practice project - APP UI design	
Week18: Final Exam	
Remarks 備註	

Courses taught in English

Course title 課程名稱	Creative Industries in Cultural Research （文化創意產業研究）
Course Description 課程概述	Cultivation of cultural and creative industries based design ability
Course objective 課程目標	Understand the meaning of design and methods
Competence 核心能力	Visual cultural and creative design

Prerequisite Course(s) 先修課程或先備能力	Photoshop and Illustrator
Teaching Strategies 教學方法	Project Work & class discussion
Course Material 課程教材	Visual Communications Design
Grading 評量方式	Project Work report
References 參考書目	Visual Communications Design Creative Industries in Cultural Research
Contact with Teacher 老師聯絡資訊	Tel:0988390795 Mail:juewuhaw@yahoo.com.tw

Course Outline 課程進度	
1. Set a theme of cultural and creative 2. Collection of cultural and creative information 3. Cultural and creative industries field visits 4. Midterm report 5. Creative design 6. analysis Creative Industries in Cultural Research 7. Creative design work 8.Final Report	

Remarks 備註	

Courses taught in English

Course title 課程名稱	Multimedia Creativity and Performance Research (多媒體創作與表現專題研究)
Course Description 課程概述	It is a one-credit course designed to provide students with skills involving presentations and digital graphics based on their chosen master thesis. Students use various hardware and software peripherals as well as the Internet for integrating skills to create a variety of publications. Upon successful completion of the course, students are able to pursue further study in the area of professional interactive multimedia design.
Course objective 課程目標	Upon the successful completion of this course, students should be able to: 1. Multimedia Components a. Compare aspects of multimedia-presentation, desktop publishing, graphic design, digital video production, and digital video production. b. Utilize a variety of input methods. Examples: digital camera, scanners, CDRW, Internet download 2. Enhanced Presentations Modify/enhance slides utilizing a variety of computer options: bullets, graphic art, text art, video clips, sound/music, font size, color, type, and background color a. Utilize slide show skills for preparing presentations: transitions, animations, and timing features b. Utilize various presentation formats. Examples: outline, speaker notes, sorter multimedia design.
Competence 核心能力	3. Read two articles from a professional journal and write a one page report in unbound format and other formats. □ 4. Research, create, and present assigned topics projects using Picasa, PowerPoint and other software. □ 5. Research and complete a magazine cover. □ 6. To help students plan future careers, students will research their chosen careers, write a report, and present to classmates. □ 7. Implement C/T Curriculum Core: Life Applications, Workplace Applications, and Project Development
Prerequisite Course(s) 先修課程或先備能力	Design Research Methods
Teaching Strategies 教學方法	Oral presentations and interactive discussions

Course Material 課程教材	1. Intelligent Multimedia. Managing Creative Works in a Digital World (2010); D. Casanovas P. Bourcier (Editor), & M. Maracke C. Dulong D Rosnay (Editors); ISBN-13: 978-8883980633; ISBN-10: 8883980638. 2. Indexing Multimedia and Creative Works: The Problems of Meaning and Interpretation (2005); Pauline Rafferty **(Author) &** Rob Hidderley **(Author);** ISBN-10: 0754632547; ISBN-13: 978-0754632542.
Grading 評量方式	3. Grades will be determined by a student's performance on a midterm (15%), a final (20%), individual written assignments (20%), and a group project and assignments (45%). The project grades will be as a result of 1) individual presentations, 2) demos, 3) project write-ups, and 4) ratings given by the other members of the project team. The class will *not* be graded on a curve. The final grades will be determined by the standard scale of 90% = A-, 80% = B-, etc. 4. Individual homework should be done independently. It is fine to discuss the general techniques and methods required, but you must do your own work in solving the problems and writing up the solutions. *Cheating will not be excused* and will lead to failure in the course. After you turn in your individual homework, you may use this information in the group, combined with others homework, to aid in the project redesigns.
References 參考書目	
Contact with Teacher 老師聯絡資訊	My research office is located in A&H building 5TH Floor. Office telephone: 05-631-5878 Email: stshen@nfu.edu.tw

Course Outline 課程進度	
Lecture Week 1-2: Course Introduction Lecture Week 3: Fundamental Concepts Lecture Week 4: Studying Individuals based on each pupil's chosen topic Lecture Week 5: Analysing the detailed contents and structures Lecture Week 6-7: Preparing and Working with the intended presentation Lecture Week 8: Visualizing and finalizing the work Week 9 Mid Term Exam	Lecture 10-11: Discussions and feedbacks Lecture 12: Studying the second chosen topic Lecture 13: Analysing detailed contents and structures Lecture 14-15: Preparing and Working with the intended presentation Lecture 16-17: Visualising and finalizing the work

	Week 18 Final Term Exam
Remarks 備註	

Courses taught in English

Course title 課程名稱	Research on Social Media Interaction Integrated (社交媒體互動研究)
Course Description 課程概述	Social media services such as Facebook and Twitter represent a new class of communication platforms that have become quickly interwoven into the everyday lives of millions of people around the world. In this course we will draw on competing communication perspectives to explore the reasons behind the widespread popularity of these platforms. In doing so we will consider the role of individual choice, social influence, technological influence, and how these three perspectives can be combined. We will further explore the implications of social media for personal relationships, youth culture, organizations, social research, and personal privacy.
Course objective 課程目標	Upon the successful completion of this course, students should be able to: • Apply multiple communication perspectives to make sense of social media adoption and use, through class discussion, the theory paper and the final projects. • Understand the various methodological approaches that can be used to study social media by applying class discussion to reading material. • Discuss social media intelligently using appropriate language and terminology derived from scholarly papers and class discussion. • Understand the implications of social media for a variety of social issues through the course readings and class discussion. • Think abstractly about the role of social media in personal and organizational contexts during class discussion and while writing the theory paper and final project.
Competence 核心能力	8. Demonstrate an understanding of the theory of social networks 9. Develop a command of the vocabulary and characterization of social networks 10. Demonstrate competence in social network research
Prerequisite Course(s)	N/A

先修課程或先備能力	
Teaching Strategies 教學方法	Oral presentations and interactive discussions
Course Material 課程教材	All readings assignments are listed below, in the section of this syllabus titled "Schedule of Assignments & Readings." *You do not need to acquire any textbooks for this course*. Our readings will come from other sources. However, if you would like to obtain books to read on the subject, I recommend Social Network Analysis by Christina Prell as a good optional supplement. Our required readings will be accessible in this syllabus as hyperlinks to web pages and online academic journals. Unless the syllabus specifically notes otherwise, all reading assignments for this class are required, and should be completed by the week of the class under which they are listed. Lectures incorporate text, images and videos and discussion. They will be listed in this course syllabus and in the course's Blackboard page under the link "Weekly Lectures." You're responsible for reviewing and being familiar with all parts of these lectures, not just the main text. Lectures will be made available on the first day of the week under which they are listed.
Grading 評量方式	This social networks course is designed to build skill, and an essential part of that skill-building is practicing and questioning. Your participation during the class lectures, and your reading of other students' participatory questions and trials, is therefore an essential element of learning. In the weekly schedule for our class contained at the bottom of this syllabus, you'll notice that I ask you to participate by answering questions and posting information during each lecture. To gain credit for that participation, you should make your contributions *during the week that a lecture is introduced*: the specific due date for participation is listed in each week's schedule. Informed, prepared, thoughtful, active participation in class activities and discussion, in a manner that is respectful of and responsive to your peers, will result in a high class participation grade. Carelessness, lack of preparation, inactivity, unresponsiveness and disrespect toward peers will lead to a lower class participation grade. You must positively engage to earn a score. Scores will range from 100 (Outstanding) to 90 (Excellent) to 80 (Good) to 70 (Acceptable) to 60 (Unacceptable) to 0 (None).

References 參考書目	N/A
Contact with Teacher 老師聯絡資訊	My research office is located in A&H building 5TH Floor. Office telephone: 05-631-5871 Email: stshen@nfu.edu.tw

Course Outline 課程進度	
Lecture Week 1-2: Course Introduction Lecture Week 3: Fundamental Concepts and History Lecture Week 4: Studying Individuals, Studying Networks Lecture Week 5: Characterizing Network Structure Lecture Week 6-7: Installing and Working With the Research Program R Lecture Week 8: Measuring and Visualizing Social Networks in R and in R[eal life] Week 9 Mid Term Exam	Lecture 10-11: From 2-Mode to 1-Mode, from Affiliations to Relations Lecture 12: Similarities and Differences in Networks Lecture 13: Patterns in Social Networks Lecture 14: Political Networks Lecture 15: Social Networks Online Lecture 16-17: Social Network Surveillance Week 18 Final Term Exam
Remarks 備註	

Courses taught in English

Course title 課程名稱	Science and Technology English (科技英文)
Course Description 課程概述	The main idea of this course is to help students for oral presentation about engineering topics, especially for EE background. Besides, the practices of interview with foreign companies, conference call meetings, self-introduction, and skills of cooperate with foreigners are covered.
Course objective 課程目標	1. Students can have a short talk for engineering topics in English freely. 2. Students can communicate with exchanged students in English easily. 3. Student can hold and join a group meeting in English.
Competence 核心能力	Speaking and listening abilities are expected
Prerequisite Course(s) 先修課程或先備能力	1. Basic English grammar and vocabulary are required. 2. “Speaking without fear” is the key factor and basic criterion for the lesson.
Teaching Strategies 教學方法	1. Group discussion(小組討論) 2. Learn by practices(實作練習) 3. Didactic Teaching(講述式教學)

	4. Team Teaching(協同教學)
Course Material 課程教材	1. Journal papers from website 2. ICRT radio station 3. Textbook
Grading 評量方式	1. 60% Participation, personal speaking practice, and group involving level 2. 20% Assignments 3. 20% Final Projects
References 參考書目	英語簡報演說技巧 English Public Speaking and Presentation ISBN：9789575324834
Contact with Teacher 老師聯絡資訊	e-mail:stwu@nfu.edu.tw Phone:05-631-5613

Course Outline 課程進度

1.Reading skills for international science journals
2.Browsing skills for international science websites
3.Simulations of poster for international conferences
4.Freestyle oral speaking practice
5.Native/Non-native speakers' listening practices
6.Simulation of industrial group meeting with speaking and listening skills
7.Simulation of industrial conference calls with speaking and listening skills
8.Self introduction
9.Interview skills for applying jobs in foreign industries
10.Connection with foreign exchanged students. Information delivering with speaking and drawing.
11.Final project

The schedule above is adjustable with the studying progress.

Course Rules need to obey

1. Smart phones and laptops are available for vocabularies searching in class. Gaming is NOT ALLOWED in class.
2. Students need to be humble for other's corrections in class. Also, they have to speak without any fears.

The course is suitable for students with engineering back ground only (this course is also suitable for graduated students).

Remarks 備註	