

## New Energy Science and Engineering Course List

### I. School Package for the School of Science and Engineering

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
BIO2001	General Biology	普通生物	3
CHM1001	General Chemistry	普通化學	3
CSC1001	Introduction to Computer Science: Programming Methodology	計算機科學導論：程序設計方法	3
CSC1002	Computational Laboratory	計算機實驗	1
Option A*	MAT1001	Calculus I	微積分（一）
	MAT1002	Calculus II	微積分（二）
Option B*	MAT1003	Mathematical Analysis I	數學分析（一）
	MAT1004	Mathematical Analysis II	數學分析（二）
MAT2040	Linear Algebra	線性代數	3
PHY1001	Mechanics	力學	3
STA2001	Probability and Statistics I	概率及統計（一）	3

\*Students must complete either Option A or Option B.

### II. Major Required Courses

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
CHM1002	Chemistry Laboratory	化學實驗	1
CHM2002	Physical Chemistry	物理化學	3
ENE3001	Principles of Energy Engineering	能源工程原理	3
ENE3002	Energy Science and Engineering Laboratory	能源科學與工程實驗	2
ENE3050	Electrical Power Systems	電力系統	3
ENE4003	Energy Conversion Processes	能量轉換過程	3
MAT2002	Ordinary Differential Equations	常微分方程	3
PHY1002	Physics Laboratory	物理實驗	2
PHY2001	Electricity and Magnetism	電磁學	3
PHY2002	Thermodynamics	熱力學	3
PHY3006	Physics of Semiconductors Devices	半導體器件物理	3

### III. Major Elective Courses

Course Code	Course Title (English)	Course Title (Chinese)	Unit(s)
CHM2001	Organic Chemistry	有機化學	3
CSC3002	Introduction to Computer Science: Programming Paradigms	計算機科學導論：程序設計範式	3
CSC3150	Operating System	操作系統	3
ENE3003	Heat and Mass Transfer for Energy Systems	能源系統的熱質傳輸	3
ENE3004	Design of Solar Energy Conversion Systems	太陽能轉換系統設計	3
ENE3005	Electrochemical Energy Conversion	電化學能量轉換	3
ENE3006	Materials for Energy Applications	能源應用材料	3
ENE4001	Green Engineering and Environmental Compliance	綠色工程及環境標準	3
ENE4002	Hydrogen and Fuel Cells	氫能與燃料電池	3
ENE4004	Wind and Hydropower Energy Conversion	風能與水電能源轉換	3
ENE4005	Energy Resources and the Environment	能源與環境	3
ENE4006	Electrical Machines and Power Electronics Laboratory	電氣機械與電力電子實驗	2
ENE4007	Energy Economics	能源經濟學	3
MAT3007	Optimization	最優化	3
MAT3220	Operations Research	運籌學	3
STA2002	Probability and Statistics II	概率及統計（二）	3
MSE3002	Microstructural Evolution in Materials	材料微觀結構的演變	3
MSE3007	Electronic, Optical, and Magnetic Properties of Materials	材料的電學、光學及磁學性質	3
MSE3009	Introduction to Ceramics	陶瓷導論	3
MSE4003	Solid-State Electrochemistry	固態電化學	3
MSE4005	Nanoscale Materials	納米材料	3
PHY3007	Optoelectronics	光電子學	3
PHY3201	Quantum Physics	量子物理	3
PHY4001	Solid-State Physics	固態物理學	3
PHY4221	Quantum Mechanics	量子力學	3