

**Course Structure for Ph. D Program**  
**Graduate Institute of Green Energy and Sustainable Technology**  
**National Taiwan Normal University**

Adaptive to Class of	Required Credit(s)	Elective Credit(s)	Free Elective Credit(s)	Minimum Total Credits for Graduation
112	3.0	12.0	3.0	18.0

Note: The first alphabet "E" on the course name refers to the course in English as a medium of instruction

**I. Required Courses: 3.0 credits are required**

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
COC8001	1 E Seminar	1.0	0.0	2.0	This course must be retaken with a passing score for 3 times

**II. Elective Courses: 12.0 credits are required**

Course Code	Course Name	Credit(s)	Credit Unit		Note
			Lecture Hour	Lab/Practice Hour	
GSC8002	1 Renewable Energy	3.0	3.0	0.0	
GSC8001	2 Introduction to Energy Technology	3.0	3.0	0.0	
EEC8065	3 E Research on Sustainability Management	3.0	3.0	0.0	
GSC8005	4 Energy Storage Technology	3.0	3.0	0.0	
GSC8003	5 Materials for Energy Applications	3.0	3.0	0.0	
GSC8004	6 Green Energy Technology and Enzyme Chemistry	3.0	3.0	0.0	
GSC8006	7 Green Energy and Technologies on Intelligent Vehicles	3.0	3.0	0.0	
GSC8007	8 Solar Energy	3.0	3.0	0.0	
GSC8008	9 Vehicle Alternative Fuels	3.0	3.0	0.0	
GSC8009	10 Power Electronic for Green Energy Systems	3.0	3.0	0.0	
GSC8010	11 Application Software and Program Designs for Green Energy Systems	3.0	3.0	0.0	

**III. Free Elective Credits: 3.0 credits are required**