

<b>Course Map</b>		
<b>Outline</b>		
Department Name	Department of Forestry	
Class	Wood Science Note: 2023 2nd Course Meeting - The courses 'Lab of Pulping' and 'Papermaking Laboratory' have been changed to electives.	
<b>Educational Objectives</b>		
No.	Item	
1	Cultivate professionals in the sustainable utilization of forest resources and biological materials with integration, innovation capabilities and international perspectives	
<b>Student's Core Competencies</b>		
No.	Item	Corresponding to Educational Objectives No.
1	Basic knowledge and skills in forestry	1
2	Theories and practices in characteristics of biomaterial	1
3	Theories and practices in the development and application of forest resources	1
4	Theories and practices of functional biomaterials (including pulp and paper)	1
5	Theories and practices of bioenergy development	1

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## Lesson Plan

Course Chinese Name	Course English Name	Planning points (See note)				Corresponding core competency No.	Suggested grade level	Offering department	Notes
		1	2	3	4				
<b>College Core Courses (If not exempted, please state compulsory or electives)</b>									
<b>Compulsory Courses</b>									
普通化學	General Chemistry	U	A	S	3	1-20,2-20,3-20 4-20,5-20	1	Department of Chemistry	
微積分(一)	Calculus(I)	U	A	S	2	1-100	1	Department of Applied Mathematics	
微積分(二)	Calculus(II)	U	A	S	2	1-100	1	Department of Applied Mathematics	
木材組織學	Wood Anatomy	U	A	S	2	1-25,2-25,3-25 4-25	1	Department of Forestry	
木材組織學實驗	Lab of Wood Anatomy	U	B	S	1	1-25,2-25,3-25 4-25	1	Department of Forestry	
樹木學概論	Introduction to Dendrology	U	A	S	2	1-100	1	Department of Forestry	
木材物理及力學	Wood Physics and Mechanics	U	A	S	2	1-10,2-40,3-20 4-15,5-15	2	Department of Forestry	
木材物理及力學實驗	Lab of Wood Physics and Mechanics	U	B	S	1	1-10,2-40,3-20 4-15,5-15	2	Department of Forestry	
木材化學及實驗	Wood Chemistry with Lab	U	AB	S	3	1-20,2-20,3-20 4-20,5-20	2	Department of Forestry	
木材膠合劑學	Wood Adhesives	U	A	S	2	1-25,2-25,3-25 4-25	3	Department of Forestry	
木材膠合劑學實習	Lab of Wood Adhesives	U	B	S	1	1-25,2-25,3-25 4-25	3	Department of Forestry	
製漿學	Pulping Process	U	A	S	2	1-10,2-20,3-20 4-50	3	Department of Forestry	
造紙學	Papermaking Science	U	A	S	2	1-10,2-20,3-20 4-50	3	Department of Forestry	

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木材塗料學	Wood Coatings	U	A	S	2	1-10,2-30,3-20 4-30,5-10	3	Department of Forestry	
木材塗料學實習	Lab of Wood Coatings	U	B	S	1	1-10,2-30,3-20 4-30,5-10,	3	Department of Forestry	
生物複合材料加工 利用	Processing and Utilization of Bio- Based Composites	U	A	S	2	1-20,2-20,3-20 4-40	4	Department of Forestry	
生物複合材料加工 利用實習	Lab of Processing and Utilization of Bio- Based Composites	U	B	S	1	1-20,2-20,3-20 4-40	4	Department of Forestry	
專題討論(一)	Seminar (I)	U	C	S	1	2-25,3-25,4-25 5-25	4	Department of Forestry	
專題討論(二)	Seminar (II)	U	C	S	1	2-25,3-25,4-25 5-25	4	Department of Forestry	
森林學	Forestry	U	A	S	2	1-60,2-10,3-10, 4-10,5-10	1	Department of Forestry	
生質能源實習	Lab of Biomass Energy	U	B	S	1	2-5,5-95	2	Department of Forestry	
生質能源	Biomass Energy	U	A	S	2	2-5,5-95	2	Department of Forestry	
普通物理學	General Physics	U	A	S	3	1-100	1	Department of Physics	
有機化學	Organic Chemistry	U	A	S	3	1-100	1	Department of Chemistry	
統計學	Statistics	U	A	S	3	1-100	1	Department of Forestry	2013-S2 added
能高森林講座	Nenggao Forestry Lecture	U	C	S	2	1-20,2-20,3-20 4-20,5-20	3	Department of Forestry	2015-S2 added
木質結構設計學	Wood Construction Design	U	A	S	2	1-20,2-20,4-60	3	Department of Forestry	2015-S2 added; 2016- M5 name change
木質結構設計學 實習	Lab of Wood Construction Design	U	B	S	1	1-20,2-20,4-60	3	Department of Forestry	2016-S2 added
生物材料保存與 改質	Preservation and Modification of Biomaterials	U	A	S	2	1-25,2-25,3-25 4-25	3	Department of Forestry	2015 name change & made compulsory
普通化學實驗	Lab of General Chemistry	U	B	S	1	1-40,2-15,3-15 4-15,5-15	1	Department of Chemistry	2021-M1 made compulsory

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<b>Elective Courses</b>									
製漿學實驗	Lab of Pulping	U	B	S	1	1-10,2-20,3-20 4-50	3	Department of Forestry	2023-M2 made elective
造紙學實驗	Papermaking Laboratory	U	B	S	1	1-10,2-20,3-20 4-50	3	Department of Forestry	2023-M2 made elective
森林昆蟲學	Forest Entomology	U	AB	S	3	1-40,2-30,3-30	4	Department of Entomology	2022-M5 newly opened
生質物氣化程序	Biomass Gasification Process	U	A	S	3	5-100	≥ 4	Department of Forestry	2022-M5 newly opened; both MSc & Bachelo; EMI
高分子化學概論	Introduction to Polymer Chemistry	U	A	S	2	1-10,2-30,3-20,4-40	2	Department of Forestry	2022-M3 newly opened; EMI
農業英文	English for Agriculture	U	A	S	1	1-100	2	College of Agriculture and Natural Resources	2022-S1 newly opened; EMI
生質化學品	Chemicals from Biomass	U	A	S	2	1-10,2-30,3-30 4-30	2	Department of Forestry	2018-S2 newly opened
生物炭與醋液之製造與應用	Manufacture and Utilization of Bio-Charcoals and Vinegars	U	A	S	2	1-10,2-20,3-30 4-10,5-30	2	Department of Forestry	2018-S1 newly opened
木質材料工程學	Wood Engineering	U	A	S	2	1-20,2-20,3-30 4-30	4	Department of Forestry	2015-S2 newly opened
生物材料保存與改質實習	Lab of Preservation and Modification of Biomaterials	U	B	S	1	1-25,2-25,3-25 4-25	3	Department of Forestry	2015-S2 name change
生質物熱化學轉換技術	Biomass Thermochemical Conversion Technology	U	A	S	2	5-100	3	Department of Forestry	2014-S1 newly opened
生質能源熱電實驗	Lab of Biomass Power and Heat Application	U	B	S	1	5-100	3	Department of Forestry	2014-S1 newly opened

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生質能熱電應用與產業管理	Application and Industry Management of Biomass Power and Heat	U	A	S	2	5-100	3	Department of Forestry	2014-S1 newly opened
生質物熱電應用技術創意實作	Creative Practices for Biomass Power and Heat Applications	U	A	S	2	5-100	4	Department of Forestry	2014-S1 newly opened
森林保護學	Forest Protection	U	A	S	2	1-100	3	Department of Forestry	2012-S1 added
林木分子遺傳學	Forest Tree Molecular Genetics	U	A	S	3	1-100	3	Department of Forestry	2012-S1 newly opened
紙品性能檢驗學	Testing Methods of Paper Products	U	A	S	2	2-20,4-80	4	Department of Forestry	2010-S1 newly opened
木材乾燥學及實驗	Wood Drying with Lab	U	AB	S	2	1-20,2-40,3-20 4-20	2	Department of Forestry	
家具製造學	Furniture Making	U	A	S	2	1-20,2-30,3-30 4-10,5-10	3	Department of Forestry	
家具製造學實習	Lab of Furniture Making	U	B	S	1	1-20,2-30,3-30 4-10,5-10	3	Department of Forestry	
木材鑑別與分級及實習	Wood Identification and Lumber Grading with Practice	U	AB	S	2	1-40,2-40,3-20	2	Department of Forestry	
生物化學	Biochemistry	U	A	S	3	1-100	3	Department of Food Science and Biotechnology	
森林遊樂學	Forest Recreation	U	A	S	3	1-100	2	Department of Forestry	
林政學	Forest Policy	U	A	S	2	1-100	4	Department of Forestry	
林業行政管理	Forestry Administration	U	A	S	2	1-100	4	Department of Forestry	
森林生態學	Forest Ecology	U	A	S	3	1-100	3	Department of Forestry	
森林經營學	Forest Management	U	A	S	2	1-100	4	Department of Forestry	
紙張性質學	Testing and Properties of Paper	U	B	S	2	2-20,3-20,4-60	4	Department of Forestry	
木材市場	Timber Marketing	U	A	S	2	1-50,3-50	2	Department of Forestry	

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造紙纖維材料	Fibrous materials for Papermaking	U	A	S	2	2-30,3-20,4-50	3	Department of Forestry	
造紙單元操作學	Unit Operations of Papermaking	U	A	S	3	1-25,3-25,4-50	3	Department of Forestry	
林產工業安全與衛生	Occupational Safety and Health of Wood Industries	U	A	S	2	1-25,2-25,3-25,4-25,	2	Department of Forestry	
製材學	Lumbering	U	A	S	2	1-25,2-25,3-25,4-25	2	Department of Forestry	
商用木材	Economical Timber	U	A	S	2	1-25,2-25,3-25,4-25	2	Department of Forestry	
林產特產物	Special Forest Products	U	A	S	2	1-25,2-25,3-25,4-25	2	Department of Forestry	
竹材加工技術與應用	Bamboo Processing Technology and Applications	U	A	S	2	1-20,2-30,3-20,4-30	2	Department of Forestry	2018-S2 name change
木材加工學	Wood Processing	U	A	S	2	1-20,2-20,3-20,4-20,5-20	3	Department of Forestry	
膠合設計	Adhesion Design	U	A	S	2	1-25,2-25,3-25,4-25	3	Department of Forestry	
世界經濟木材及實習	Commercial Timbers of the World with Practice	U	AB	S	3	1-50,3-50	2	Department of Forestry	
造紙工程學	Papermaking Engineering	U	A	S	2	2-30,4-70	3	Department of Forestry	2019-S1 update to 2 credits
紙加工學	Paper Converting	U	A	S	2	2-20,3-20,4-60	4	Department of Forestry	2019-S1 update to 2 credits
木材塗裝技術	Techniques of Wood Finishing	U	A	S	2	1-10,2-40,3-20,4-20,5-10	3	Department of Forestry	
家具成本分析	Cost Analysis of Furniture-Making	U	A	S	2	1-10,2-30,3-30,4-20,5-10	3	Department of Forestry	

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木材界面性質與處理	Surface Property and Modification of Wood	U	A	S	2	1-20,2-30,4-50	3	Department of Forestry	
林產工業與污染防治概論	Introduction to the Pollution Abatement of Forest Products Industry	U	A	S	2	1-20,2-20,3-4-20,5-20	4	Department of Forestry	
環境材料設計	Eco-materials Design	U	A	S	2	2-40,3-20,4-40	3	Department of Forestry	2015-S2 name change
畢業論文	Thesis	U	C	Y	2	1-20,2-20,3-20 4-20,5-20	4	Department of Forestry	
休閒觀光之木材文化概論	Introduction to Wood Culture for Recreation and Tourism	U	A	S	2	1-20,2-40,3-40	4	Department of Forestry	
木材成分之生化特性與其生合成	Biochemistry and Biosynthesis of Wood Components	U	A	S	2	1-10,2-20,3-30 4-20,5-20	3	Department of Forestry	
木質環境科學概論	Introduction to Wooden Environmental Science	U	A	S	2	1-20,2-40,3-20 4-20	1	Department of Forestry	
木材古蹟維修概論	Introduction to Wooden Monuments Conservation and Restoration	U	A	S	2	1-20,2-50,3-20 4-10	4	Department of Forestry	
生質物應用概論	Introduction to Biomass Application	U	A	S	2	1-25,2-25,3-25 4-25	2	Department of Forestry	2015-S2 name change
木質結構設計	Design in Wooden Construction	U	A	S	2	1-20,2-20,4-60	3	Department of Forestry	
木質內裝設計	Design in Wooden Interior Decoration	U	A	S	2	1-40,2-60	3	Department of Forestry	
木質生活用品導論與設計	Introduction to Wooden Housewares and Design	U	A	S	2	1-20,2-20,3-30 4-30	3	Department of Forestry	
世界森林與木材	Forest and Wood Resources of the World	U	A	S	2	1-50,3-50	3	Department of Forestry	
林產品行銷管理	Forest Products Marketing Management	U	A	S	2	1-100	4	Department of Forestry	

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林產產業經濟學	Industrial Economics of Forest Products Industry	U	A	S	3	1-100	4	Department of Forestry	
市場調查	Marketing Survey	U	A	S	2	1-100	4	Department of Forestry	
林產品採購管理	Forest Products Purchasing Management	U	A	S	2	1-100	4	Department of Forestry	
紙質文物保存與修復	Conservation & Reinstatement of Paper-Based Cultural Relics	U	A	S	2	4-100	4	Department of Forestry	
木材劣化學	Degradation of Wood	U	A	S	2	1-25,2-25,3-25 4-25	3	Department of Forestry	
樹木生物力學	Biomechanics of Tree	U	A	S	2	1-30,2-70	3	Department of Forestry	
再生能源概論	Introduction to Renewable Energy	U	A	S	2	2-5,3-5,4-5 5-85	2	Department of Forestry	
育林學原理	Principles of Silviculture	U	A	S	2	1-100	3	Department of Forestry	
育林學及實習	Silviculture with Practice	U	AB	S	3	1-100	3	Department of Forestry	
森林美學	Forest Esthetics	U	A	S	2	1-100	1	Department of Forestry	
造紙化學概論	Fundamentals in Paper Chemistry	U	A	S	2	2-20,4-80	4	Department of Forestry	
普通物理學實驗	Lab of General Physics	U	B	S	1	1-100	1	Department of Physics	
普通生物學	General Biology	U	A	S	3	1-100	1	Department of Life Sciences	2021-M2 name change
經濟學	Economics	U	A	S	3	1-100	1	Department of Applied Economics	
有機化學實驗	Lab of Organic Chemistry	U	B	S	1	1-100	1	Department of Chemistry	
分析化學實驗	Lab of Analytic Chemistry	U	B	S	1	1-100	1	Department of Chemistry	
分析化學	Analytic Chemistry	U	A	S	3	1-100	1	Department of Chemistry	
計算機概論	Introduction to Computer Science	U	A	S	3	1-100	1	Institute of Data Science and Information Computing	

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農業概論	Introduction to U A S 2 1-100	1	College of Agriculture and Natural Resources
高分子化學	Polymer Chemistry U A S 3 1-50,4-50	3	Department of Chemical Engineering

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