國立東華大學
教學計劃表　Syllabus

課程名稱(中文) Course Name in Chinese	代數導論			學年/學期 Academic Year/Semester		112/1
課程名稱(英文) Course Name in English	Introduction to Algebra					
科目代碼 Course Code	AM__75120	系級 Department & Year	博士	開課單位 Course-Offering Department		應用數學系
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)		3.0/3.0		
授課教師 Instructor	/王立中					
先修課程 Prerequisite						

課程描述　Course Description

This course is an introduction to abstract algebra. It is a one-year course introducing basics of groups, rings and fields. The aim of this course is to teach students as much about groups, rings and fields as possible.

課程目標　Course Objectives

本課程主要目標以為高等代數課程或是相關課程之基礎。
Provide a foundation for higher study of algebra and related courses.

	系專業能力 Basic Learning Outcomes	課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.'s Education Objectives
A	具備專業知識及邏輯推理能力。Have well-founded expertise and be capable of logical reasoning.	●
B	具備學習其它學科的能力，以期能邁向跨領域研究。 Be able to study other fields of science so as to conduct interdisciplinary research in the future.	○
C	具備獨立思考與解決問題的能力。 Be capable of independent thinking and have the problem-solving skills.	●

圖示說明Illustration ：● 高度相關 Highly correlated ○中度相關 Moderately correlated

授 課 進 度 表 Teaching Schedule & Content

週次Week	內容 Subject/Topics	備註Remarks
1	Groups and Subgroups	
2	Groups of Permutations	
3	Cosets and Theorem of Lagrange	
4	Direct Products and Homomorphisms	
5	Factor Groups	
6	Isomorphism Theorems	
7	Group Actions	

8	Sylow Theorems	
9	Sylow Theorems	
10	Rings and Fields	
11	Rings and Fields	
12	Rings of Polynomials	
13	Ideals and Factor Rings	
14	Extension Fields	
15	Algebraic Extensions	
16	Geometric Constructions	
17	Finite fields	
18	Galois Theorem	

教 學 策 略 Teaching Strategies

☑ 課堂講授 Lecture ☐ 分組討論Group Discussion ☐ 參觀實習 Field Trip

☐ 其他Miscellaneous:

教 學 創 新 自 評 Teaching Self-Evaluation

創新教學(Innovative Teaching)

☐ 問題導向學習(PBL) ☐ 團體合作學習(TBL) ☐ 解決導向學習(SBL)

☐ 翻轉教室 Flipped Classroom ☐ 磨課師 Moocs

社會責任(Social Responsibility)

☐ 在地實踐Community Practice ☐ 產學合作 Industy-Academia Cooperation

跨域合作(Transdisciplinary Projects)

☐ 跨界教學Transdisciplinary Teaching ☐ 跨院系教學Inter-collegiate Teaching

☐ 業師合授 Courses Co-taught with Industry Practitioners

其它 other:

學期成績計算及多元評量方式 Grading & Assessments

配分項目 Items	配分比例 Percentage	多元評量方式 Assessments							
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定	其他
平時成績 General Performance	100%	✓	✓	✓			✓		
期中考成績 Midterm Exam									
期末考成績 Final Exam									
作業成績 Homework and/or Assignments									
其他 Miscellaneous (_____)									

評量方式補充說明
Grading & Assessments Supplemental instructions

教科書與參考書目（書名、作者、書局、代理商、說明）
Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

A First Course in Abstract Algebra, 7th Edition
John B. Fraleigh (Author)
出版商：Pearson
語言： English

課程教材網址(含線上教學資訊,教師個人網址請列位於本校內之網址)
Teaching Aids & Teacher's Website(Including online teaching information. Personal website can be listed here.)

其他補充說明 (Supplemental instructions)