壹、課程基本資料

項目	內容
課程名稱 Course Title	數學(二) MATHEMATICS II
課程類別(學制) School System	日間部五專 5-Year Junior College of Day Division
開課單位 Academic Unit	通識教育中心

授課教師 Instructor	黃建豪	職稱 Academic Rank	專案助理教授

師生互動 Data of Instructor	辦公室 Office	Z0610	辦公室電話 Office Phone Number	7235
	電子信箱 E-mail	100300@mail.wzu.edu.tw		
	約談時間 Office Hours	(一) 13~15 (三) 10~12		

學分 Credits	2學分	選課別 Category	[∨]必修 Required Course [ ]選修 Elective Course

開課類別 Course Length	[ ]學年課 Year-long course(2 semesters) [∨]學期課 semester course(1 semester)	開課年級Year Taught: 2年級 授課班級Class Taught: 日五專英文二年級

課程內容概要
Course Content Synopsis

■課程內容概要: 本課程為五專部學生前二年必修之數學課程, 一年級上下學期各2學分, 二年級一學期2學分。課程內容主要依據教育部所公佈的五年制專科學校共同科目中的數學課程標準訂定, 有助於學生銜接日後的數學相關課程如統計學、微積分, 及商業課程等。本課程著重於啟發學生的分析、歸納、計算及推理等能力, 以作為研究其他知識之輔助工具,並培養其對研究學術的興趣。
This course is required for the students at the Junior College Division in the first two years. It offers 2 credits for each semester of the first year, and 2 credits for one semester of the second year. The content of the course is based on the course outline for the five-year-college made by the Ministry of Education. This course is helpful for the students who want to take the related courses in the future, such as statistics, calculus and business courses. This course aims to develop students' abilities, such as analysis, induction, calculation and inference, for future learning and interests.
■主要授課語言:
英語(English)

課程學習目標
Course Learning Goals

1. 教授學生數學的基本概念。
2. 訓練學生推理演算的技巧及獨立思考的能力。
3. 培養學生探索問題的技能及解決問題的方法。
1. To give student a basic understanding of mathematics concepts.
2. To train students to develop independent thinking ability and the skills of reasoning and calculation.
3. To train students to explore and solve the problem.

系培育目標與核心能力以及學習目標Development Goals, Skill Indicator, & Learning Objectives

系培育目標 Development Goal	核心能力指標編碼 Skill Indicator Code	核心能力 Skill Indicator	學習目標 Learning Objective
1.自主管理能力	1-2-2	自主學習能力	In the process of learning, students are trained to have the ability to learn mathematics independently, and gain self-confidence from learning, so that they can generate learning motivation.

	2.問題解決能力	2-2-1	問題解決能力	In the process of learning, students can connect mathematical knowledge to life, mathematical thinking, problems solving, so that they can execute mathematical procedures flexibly, accurately, efficiently and appropriately.
	5.分析綜合能力	5-2-1	邏輯思辨能力	In the process of learning, students are trained to have the ability of independent thinking and reasoning.
	其他(Others)			

學生先備知能 Prerequisite Knowledge Skills	1. Basic algebric operations 2. Tree diagram 3. Basic probability
教學學理基礎 Theoretical Foundation of Instruction	Literacy-based Mathematics Learning
授課資訊 Instructional Information	■課程類型(Top Down) 一般課程Regular course 邏輯思考與運算相關課程Logical thinking or computation-related ■教學平台 實體教學Face-to-face instruction ■主要教學策略 講授Lecture 實作Hands-on 自主學習Learning autonomy 分組討論Group discussion 問題導向Problem-based 影片欣賞Video appreciation
評量 Student Assessment	■評量方式與評分比例分配 Evaluation Criteria 30% -- Midterm exam 30% -- Final exam 40% -- General Performance ■課堂要求 Course Requirements & Policies 1. Class roll call 2. Be on time for class. 3. Please turn off your mobile phone or set it to vibrate during class. Please do not answer or use your mobile phone unless you need it in class. Offenders will be deducted from the quiz. 4. 5 points will be deducted from the homework grade if the homework is submitted late per day . 5. The above descriptions and course arrangements will be adjusted appropriately according to actual needs, and announcements will be made in classroom teaching and e-learning, please pay attention.
教材 Learning Materials	「請學生務必使用正版教科書」Please respect copyright and use orignal textbooks. ■教科書 Textbooks 1、書名：數學 作者：楊精松，朱紫媛 出版社：東華圖書 出版年：2013 ISBN：978-957-483-7 ■參考書目或網址 References or Websites 1、書名：【數學思辨之旅：拆解國中數學，建立數學素養與能力】 作者：永野裕之著，衛宮紘譯 出版社：世茂 2、書名：【超展開數學約會：談個戀愛，關數學什麼事!?】 作者：賴以威 出版社：臉譜 3、書名：【用數學的語言看世界：一位博士爸爸送給女兒的數學之書，發現數學真正的趣味、價值與美】 作者：大栗博司著， 許淑真譯 出版社：臉譜 4、書名：【這個問題，你用數學方式想過嗎？：史丹佛大學教授最受歡迎的4堂思考力訓練課，打造最強數學思維，讓你擁有關 鍵的邏輯力、證明力、數字力】 作者：齊斯‧德福林著， 洪萬生、黃俊瑋、蘇惠玉譯 出版社：臉譜 5、書名：統計 機率篇：用數值預測未來 少年伽利略8 作者：日本Newton Press，林筑茵譯 出版社：人

		人
教學用軟體 Software		無None
補充資料 Additional Remark		本科目無相關下載檔案。

貳、課程內容與進度(Course Content and Schedule)

週次 Week	上課日期 Date	單元名稱 Units	授課方式 Instructional Approaches	作業、報告、考試或其它 Assignments, Tests and Others	備註 Remarks
1	111/09/11 ~ 111/09/17	Introduction	Lecture / analysis and discussion		
2	111/09/18 ~ 111/09/24	10-1 Tree diagram	Lecture / analysis and discussion		
3	111/09/25 ~ 111/10/01	10-2 Addition principle and multiplication principle	Lecture / analysis and discussion	Homework 1	
4	111/10/02 ~ 111/10/08	10-3 Permutation (I)	Lecture / analysis and discussion		
5	111/10/09 ~ 111/10/15	10-3 Permutation (II)	Lecture / analysis and discussion		
6	111/10/16 ~ 111/10/22	10-3 Permutation (III)	Lecture / analysis and discussion	Homework 2	
7	111/10/23 ~ 111/10/29	10-3 Permutation (IV)	Lecture / analysis and discussion		
8	111/10/30 ~ 111/11/05	Explanation of exercises	Lecture / analysis and discussion	TEST	
9	111/11/06 ~ 111/11/12	Midterm exam			
10	111/11/13 ~ 111/11/19	1. Correct midterm exam 2. Mathematical learning	Lecture / analysis and discussion		
11	111/11/20 ~ 111/11/26	10-4 Combination (I)	Lecture / analysis and discussion		
12	111/11/27 ~ 111/12/03	10-4 Combination (II)	Lecture / analysis and discussion		
13	111/12/04 ~ 111/12/10	10-4 Combination (III)	Lecture / analysis and discussion		
14	111/12/11 ~ 111/12/17	11-1 Random experiment, sample space, and event	Lecture / analysis and discussion		
15	111/12/18 ~ 111/12/24	11-2 Definition and fundamental theorem of probability	Lecture / analysis and discussion	Homework 3	
16	111/12/25 ~ 111/12/31	11-3 Conditinal probability	Lecture / analysis and discussion		
17	112/01/01 ~ 112/01/07	11-4 Mathematical Expectation	Lecture / analysis and discussion	TEST / Homework 4	

週次 Week	上課日期 Date	單元名稱 Units	授課方式 Instructional Approaches	作業、報告、考試或其它 Assignments, Tests and Others	備註 Remarks
18	112/01/08 ~ 112/01/14	Final exam			