

管院碩士班(含碩專班)課程大綱

MS/MA Program Syllabus

2019.12.16 修訂

系所 Department	資管所 IM 醫管所 Medical IM		必選修 compulsory/elective	選修 Elective
課程名稱 Course title	醫療資料探勘實作 Data Mining Applications in Healthcare		學分數 Credit(s)	3
學年/學期 academic year/Semester	109-2 學期 Spring semester 2021		上課地點 Classroom	管院 349
講授教師 Instructor	林育秀 Yu-Hsiu Lin		上課時間 Time	Tuesdays, 9:10AM~12:00
教師辦公室&諮詢時間 Instructor office number & office hour	614 Wednesdays	教師聯絡資訊 Instructor Contact	Phone: 34614 Email: yuhsiu@ccu.edu.tw	
助教 Teaching assistant	TBD	助教 聯絡資訊 TA contact	Email: TBD	
先修課程 Pre-requisite courses	Analysis and Application of Healthcare Data OR base SAS skill			
課程目標 Course Objective	This course is an introduction to the SAS EG and EM for students. Moreover, this course will introduce the National Health Insurance Research Database and health-related databases to students. Upon successfully completing this course, students will be able to “do something useful with SAS,” including: to identify/characterize/define a problem, to design a program to solve the problem, to create executable code, and produce a course project.			
AACSB 學習品質保證學習目標 Assurance of Learning (AOL) Learning goals *請先選填為主要或次要學習目標(Major or minor learning goal)，再選擇對應之學習目標				
主要學習目標 Major learning goal 目標 1：知識整合 LG1:Knowledge Integration		次要學習目標 Minor learning goal 目標 3：研究能力 LG3:Research Skills		次要學習目標 Minor learning goal 目標 5：商業倫理 LG5:Business Ethics
教材 Teaching materials	Handouts			
網址 Course website	E-course2			
教科書/參考書 Textbooks/Reference	1. Sarma, K. S. (2017). Predictive modeling with SAS Enterprise Miner: practical solutions or business applications (3 rd edition). NC: SAS Institute Inc. (ISBN: 978-1-63526-040-3 (PDF)) 2. Faries, D., Zhang, X., Kadziola, Z., Siebert U., Kuehne, F., Kuehne, F., Obenchain, R. L., Haro, J. M. (2020). Real world health care data analysis: causal methods and implementation using SAS. NC: SAS Institute Inc. (ISBN: 978-1-64295-799-9)			

	0 (PDF)) 3. Nisbet, R., Miner, G., Yale, K. (2018). Handbook of statistical analysis and data mining applications. DOI: https://doi.org/10.1016/C2012-0-06451-4 . (ISBN: 978-0-12-416632-5) (e-Book available) 4. Ron Cody (2018). Learning SAS® by example: a programmer's guide, Second Edition. SAS Institute. (ISBN-13: 978-1635266597) 5. Wahi, M. M. & Seebach, P. (2017). Analyzing health data in R for SAS users. Chapman & Hall. (ISBN : 9781498795883) 6. Tailor, K. (2016). The patient revolution: How big data and analytics are transforming the healthcare experience. Wiley & Sons, Inc. (ISBN: 9781119130178 (ePDF), eBook available).Cody, R. P. & Smith, J. K. (2006). Applied Statistics and the SAS Programming Language, Fifth Edition. Prentice-Hall, Inc. (ISBN13 9780131465329) 7. 汪海波(2015)。SAS 統計應用與分析：從入門到精通。上奇資訊。(ISBN: 978-986-375-204-2、Library: 512.4 8326-2)。 8. 李采娟(2016)。醫療應用統計學：SAS 操作與資料分析。雙葉書廊。(ISBN: 978-986-6018-70-1、Library: 512.4 8496)。 			
評量方式(請填百分比) Assessment	課堂參與 Participation	10%	個案討論 Case study	%
	作業 Homework	40%	專題 Project	30%
	小考 Quiz	%	其他 1 other ()	%
	期中考 Midterm	%	其他 2 other ()	%
	期末考 Final	20%	其他 3 other ()	%
	報告 Presentation	%	其他 4 other ()	%
其他說明 Other description	1. Academic Honesty: Academic integrity policy, based on the law: https://goo.gl/z6UqZ2 (Please read and understand). Most students are expected to be honest in your academic work, hence, you are expected to comply with the law. All research papers/assignments will be submitted through SafeAssignment to verify the originality of work and the adequacy of citation of sources. 2. Assignments are due on dates and at times note: Under normal circumstances, late work will NOT be accepted without prior agreement, except in the case of an emergency. You should contact me directly via e-mail if you have difficulty submitting an assignment on time. All assignments are due by close of business (COB) the day. 3. Student Disabilities: Please contact me personally at the beginning of the semester if you have a condition or disability that may interfere with your performance in this course. We can discuss accommodations that may be necessary to allow you to participate fully and to facilitate your learning opportunities in the class.			

課程規劃表 Course Schedule

週次 week	日期 Date	內容 Description	教材章節 Textbook	其他說明 Remark
1.	2/23	Introduction of National Health Insurance Database and application		
2.	3/2	Section 1- Apply in NHIRD: SAS Enterprise Guide Background introduction, Preparing inpatient dataset, and Preparing outpatient dataset		
3.	3/9	Preparing causes of death dataset Data analysis and Combine reports		
4.	3/16	Section 2- Application of NHIRD in Base SAS		
5.	3/23	Base SAS, Data preparation, and Merging dataset		
6.	3/30	Section 3- Customer Analysis Import data and Customers' information, Customers' behavior, and Consuming items		
7.	4/6	Data Validation-analyze and check each variable		
8.	4/13	Data Validation-analyze and check for two variables, and self-practice		
9.	4/20	Guest Lecture (TBD)		
10.	4/27	Introduction of SAS EM, data mining, dealing with missing value		
11.	5/4	Separated sampling, transformations Machine learning 1-logistic regression		
12.	5/11	Machine learning 2-Decision tree		
13.	5/18	Machine learning 3-ANN Model comparison		
14.	5/25	Section 4- Text mining 1		
15.	6/1	Text mining 2		
16.	6/8	Course review		
17.	6/15	Term paper presentation 1		
18.	6/22	Term paper presentation 2		