



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	文字探勘		學年/學期 Academic Year/Semester	105/2	
課程名稱(英文) Course Name in English	Text mining				
科目代碼 Course Code	FIN_21060	系級 Department & Year	學二	開課單位 Course-Offering Department	財務金融學系
修別 Type	學程 Program	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/林金龍				
先修課程 Prerequisite					
課程描述 Course Description					
<p>As there exist voluminous text information over the Internet and are accumulating at an amazing speed, mining useful information from text becomes increasingly more important. Knowledge extracted from text are essential for marketing, finance, social behavior analysis and many other fields.</p> <p>This course will cover important topics in text mining including basic natural language processing techniques, document representation, text categorization and clustering, document summarization, sentiment analysis, probabilistic topic models, text visualization and financial applications.</p> <p>I shall emphasize applying text mining for financial analysis. Real examples will be provided.</p> <p>I choose R as the main software as it is free, powerful and very popular for text analytics. Yet, as Python has gained increasing popularity in text mining and in other fields of big data analytics, I shall also used it as the second programming software.</p>					
課程目標 Course Objectives					
<p>教導學生文字探勘的理論與演算法，內容包含關鍵字抽取、關鍵字權重計算、向量空間模型、二元獨立模型、貝氏分類器、Rocchio分類器、nearest neighbor、k-means分群法與階層式分群法，學生得以用之分析財經資訊。</p>					
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	具備經濟學、會計學、統計學及數學的基礎能力Basic knowledge of the financial theory Economics, accounting, statistical and mathematical				○
B	具備財務金融基本學理Understanding of the development of the financial discipline				○
C	具備運用財務金融學理進行分析能力Basic knowledge of financial theory analysis				●
D	具備資料整理、書面呈現或口頭報告之能力Basic knowledge of documentation and presentation skill				●
E	具備財經時事基本分析能力Capabilities for financial analysis of current affairs				●
F	具備電腦程式運算及應用基本能力Ability of computer programs, algorithms and applications				●
G	具備英語閱讀溝通協調等基本能力English reading ability of communication and coordination				

其他 Miscellaneous (期末報告)	50%								
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.)									
<p>Main textbooks:</p> <p style="padding-left: 40px;">Sholom M. Weiss, Nitin Indurkha, and Tong Zhang (2015) Fundamentals of Predictive Text Mining, 2nd ed. Springer. E-book available at <code>\url{http://www.springer.com/us/book/9781447125655}</code></p> <p>Reference books:</p> <p style="padding-left: 40px;">Christopher D. Manning, Prabhakar Raghavan and Hinrich Schutze (2009), Introduction to Information Retrieval, Cambridge University Press, E-bok available at <code>\url{http://nlp.stanford.edu/IR-book/pdf/irbookonlinereading.pdf}</code>.</p> <p style="padding-left: 40px;">Sanjiv Ranjan Das (2014) Text and Context: Language Analytics in Finance, Now Publishers. E-book available at <code>http://srdas.github.io/Papers/Das_TextAnalyticsInFinance.pdf</code></p> <p style="padding-left: 40px;">Ronen Feldman and James Sanger (2007), <code>\textbf{The Text Mining Handbook: Advanced Approaches in Analyzing Unstructured Data}</code>, Cambridge University Press. E-book available at <code>http://srdas.github.io/Papers/Das_TextAnalyticsInFinance.pdf</code></p> <p><code>\item</code> Michael W. Berry and Jacob Kogan, <code>\textbf{Text Mining Applications and Theory}</code>, John Wiley 2010.</p> <p><code>\item</code> Jiawei Han, Micheline Kamber, and Jian Pei, <code>\textbf{Data Mining: Concepts and Techniques}</code>, 3rd edition, Morgan Kaufmann Publishers, , 2012.</p>									
課程教材網址 (教師個人網址請列在本校內之網址) Teaching Aids & Teacher's Website (Personal website can be listed here.)									
其他補充說明 (Supplemental instructions)									