MBAD 531 - Forecasting and Business Analytics in Hospitality

Instructor: Bing Pan, Ph.D.
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Office Hours: Monday, Wednesday and Friday 3-5PM or by appointment

Course Prerequisites: MBA 530: Principles of Revenue Management in Hospitality

Required Text:

Course Description:
This course provides knowledge and hands-on skills on forecasting and business analytics used in revenue management. The students will learn to use extensive data, statistical and quantitative analysis, exploratory methods, predictive models, time series and forecasting, to make fact-based decisions and drive actions in order to maximize revenues and profits. With an extensive hands-on and case-based approach, the course will introduce the students from producing ad-hoc reporting, query and drill down, statistical analysis, time series and forecasting, to predictive modeling and optimization.

Course Objectives:
• Understand the importance of data-driven decision making in hospitality industry
• Gain hands-on skills on data cleaning, data analysis and data modeling
• Gain a basic understanding of data mining, data warehousing, statistical, simulation, and optimization methods in revenue management
• Know how to collect, analyze, and model data and interpret the results and support decision making in the hospitality industry
• Understand various time series models and forecasting methods
• Survey recent tools and technologies on business analytics and forecasting

School of Business Learning Goals:
The School of Business learning goals are:
• Effective Communications: Students will write professional documents that are technically correct and concise and make effective presentations utilizing technological tools and ability utilizing relevant discipline specific knowledge.
• Ethical Awareness: Students will recognize and be able to appraise ethical dilemmas involved in business decisions and competently engage in discourse aimed at resolution of these dilemmas utilizing relevant discipline specific knowledge.
• Global Awareness: Students will recognize and examine the global implications of business decisions while evaluating and integrating innovative applications of these implications utilizing relevant discipline specific knowledge.
• Problem Solving Ability: Students will demonstrate critical thinking skills in identifying and evaluating problems and opportunities in the business environment and apply analytical techniques to formulate creative solutions utilizing relevant discipline specific knowledge.
**Honor Code and Academic Integrity**

Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each instance is examined to determine the degree of deception involved. Incidents where the professor believes the student’s actions are clearly related more to ignorance, miscommunication, or uncertainty, can be addressed by consultation with the student. We will craft a written resolution designed to help prevent the student from repeating the error in the future. The resolution, submitted by form and signed by both the professor and the student, is forwarded to the Dean of Students and remains on file. Cases of suspected academic dishonesty will be reported directly to the Dean of Students. A student found responsible for academic dishonesty will receive a XF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student’s transcript for two years after which the student may petition for the X to be expunged. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board. It is important for students to remember that unauthorized collaboration—working together without permission—is a form of cheating. Unless a professor specifies that students can work together on an assignment and/or test, no collaboration is permitted. Other forms of cheating include possessing or using an unauthorized study aid (such as a PDA), copying from another’s exam, fabricating data, and giving unauthorized assistance. Remember, research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the professor. Students can find a complete version of the Honor Code and all related processes in the *Student Handbook* at [http://www.cofc.edu/studentaffairs/general_info/studenthandbook.html](http://www.cofc.edu/studentaffairs/general_info/studenthandbook.html).

**Disability Statement**

This College abides by section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act that stipulates no student shall be denied access to an education “solely by reason of a handicap.” Disabilities covered by law include, but are not limited to, learning disabilities and hearing, sight or mobility impairments. If you have a documented disability that may have some impact on your work in this class and for which you may require accommodations, please see an administrator at the Center of Disability Services, (843) 953-1431 or me so that such accommodation may be arranged.

**Grading Grades**

Case Assignments 50  
Quizzes 10  
Project & Presentation 40  
TOTAL 100

**Grading**

A 90 - 100  
B+ 85 – 89  
B 80 – 84  
C+ 75 – 79  
C 70 – 74  
F 0 – 69  
Incomplete I  
Withdrawal W  
Academic Dishonesty XF
**Class Assignments (50%)**
At certain periods during the case study assignments will be distributed. These assignments will correspond to the lecture materials and provides a hands-on learning experience critical to engaging the course materials. If you miss an assignment for a legitimate reason (illness, serious family matters etc.), you must come see the instructor during office hours to discuss the possibility of making up the grade. *You may only make up one missed in class assignment per term with the exception of extreme circumstances as judged by the professor.*

**Quizzes (10%)**
There are will be a number of quizzes throughout the class period on the knowledge and information you learned from previous class periods.

**Project & Presentation (40%)**
You will work in a group of up to four students, analyze data from a hospitality business, conduct statistical modeling and forecasting, and derive revenue strategies. you will deliver a 20 minute presentation to the professor & industry partners outlining your recommendations.

**CLASS SCHEDULE**
(Subject to Change upon Instructor’s Discretion)
Topic 1: Introduction to data analysis skills in hospitality revenue management
- Data manipulation
- Data mining techniques on customer historic data
- Text mining and web mining
- Understanding the effects of internal and external environmental factors
Topic 2: Market segmentation
- Calculating key business indicators
- Benchmarking performance measurements
- Predictive models
Topic 4: Web analytics to drive performance
- Web log analytics
- Social media analytics
Topic 5: Time series analysis and forecasting in revenue Management
- AR, MA, and ARIMA models
- Monte Carlo Simulation
- Dynamic Pricing with optimization methods
Topic 6: Project Presentation and Evaluation