MBAN 5120 A 1.5: Data Management and Programming I

Course Outline
Fall 2015

Mondays, 2:30-5:30pm, beginning September 14, 2015
S126 SSB

Instructor
Stephen Keelan
S337 Seymour Schulich Building (SSB)
Email: skeelan@schulich.yorku.ca
Office hours: TBA

Assistant
Paula Gowdie Rose
S337 Seymour Schulich Building
416-736-5074
pgowdierose@schulich.yorku.ca

Program Support will be provided by:
Mark Morreale, Academic Program Manager, SAS Canada, Inc.

Stephen Keelan is the Director of Education at SAS Canada, and has been an instructor with SAS since 1997. He has taught SAS Data Management courses for SAS during his tenure with SAS and prior to that worked with SAS in Analyzing Agriculture Canada research data in a joint study with the University of Guelph.

Mark Morreale is an Epidemiologist with over 20 years of experience in the Canadian healthcare system. Mark is also a professor of Epidemiology and Biostatistics at McMaster University, where he lectures on Clinical Decision Support, Health Care Performance, Quality and Health Research Methodologies. Examples of his research include: Evaluation of Care Maps, ER wait times, Patient Safety and Quality of Care. Before joining SAS, Mark worked in several information management positions in the Pharma sector, Hospitals, Ontario Ministry of Health and Health Canada. In 2007-2009 Mark served as Co-Chair for the Hamilton Niagara Haldimand Brant Integrated Decision Support System-A Data Warehouse and BI resource that provides consolidated reporting and analysis for Hospitals, CCACs, and CHCs across two LHINs.

Brief Description

The Data Management and Programming I course introduces students to the key techniques required for managing data. The course emphasizes the SAS environment but also incorporates other tools, such as Excel. Major areas for discussion include reading and validating data, manipulating and combining data sets, and displaying data in reports.

Co-requisite: MSBA 5110 3.00

Contents

Course Learning Outcomes

The effective practice of data analytics requires more than an understanding of statistical techniques; it also requires the ability to manage and manipulate data. This course introduces students to core data management techniques using SAS, a commercial analytics platform. The course emphasizes practice over theory, and allows students to experiment with each of the key data management procedures. Upon the completion of the course, students will have the ability to manage large data sets. The course is also a requirement for the SAS Business Analyst certification.

Organization of the Course

Pedagogy

Each session of the course focuses on a chapter of the SAS Data Management and Mining manual. Students are expected to complete required readings prior to the lecture and come prepared to follow along at their workstations. Part of each class session is devoted to completing in-class exercises.

Students complete a group project, due in the final session. The project provides students the opportunity to manage and manipulate a data set, provided by the instructor, using the techniques learned in class. Students prepare a short presentation for the final class session in which they discuss their key findings.

Deliverables at a Glance

Course work includes assignments, a group project and a final exam.

Assignment/Task	Quantity	% Weight	Total %	Author
Assignments	3	10%	30%	Individual
Group Project	1	30%	30%	Group
Final exam	1	40%	40%	Individual
			100%	

For details, see “Written Assignments/Projects and Exam[s]: Descriptions” (p. 4).

Course Material

Students use the SAS Data Management and Mining manual as their textbook for the course. This course manual will be provided by the instructor.

The *Course Materials Database (CMD)* has been created within Schulich’s Lotus Notes. It contains general information for Schulich students and information and materials specific to this course. Check it frequently.

Class-by-Class Syllabus

Topics, readings, and other preparations for every class are listed below

Note: If any changes in this schedule become necessary, notifications will be posted on the course CMD, and when changes need to be announced between classes, an email will be sent to students' Lotus Notes email accounts, notifying them of the change.

DATE/WEEK	TOPIC(S)/ASSIGNED READING(S)/ASSIGNED WORK DUE
September 14 (1)	Accessing SAS Data Sets • Examining descriptor and data portions • Accessing relational databases • Browsing SAS data libraries in Windows • Browsing SAS data libraries in UNIX Read: 1. Chapter 1-2 from the course manual
September 21 (2)	Reading SAS Data Sets • Reading data in SAS • Using SAS data as an input • Creating subsets of observations and variables • Adding permanent attributes Read: 1. Work on Assignment 1 Assignment #1 handed out
September 28 (3)	Reading Excel Worksheets and Manipulating Data Reading Excel Worksheets • Using Excel data as an input • Additional Excel techniques Manipulating Data • Creating variables • Creating variables conditionally • Sub-setting observations Read: 1. Chapters III and IV from the Course Manual **Assignment Due:** ▪ Assignment #1

DATE/WEEK	TOPIC(S)/ASSIGNED READING(S)/ASSIGNED WORK DUE
	Assignment #2 handed out
October 5 (4)	Combining SAS Data Sets • General introduction to combining SAS data sets • Appending a data set • Concatenating data sets • Merging data sets one-to-one • Merging data sets many-to-one • Merging data sets with Read: 1. Chapter V from the Course Manual
October 12	***No Class - Thanksgiving – (University Closed)***
October 19 (5)	Producing Summary Reports • Using the FREQ procedure • Using the MEANS procedure • Using the TABULATE procedure Read: 1. Chapter VI from the Course Kit **Assignment Due:** Assignment #2 Assignment #3 handed out
October 26 (6)	Group Presentations **Assignment Due:** ▪ Assignment #3
Please refer to the Exam Schedule	**Final Exam**

Written Assignments/Projects and Exam[s]: Descriptions

Due Date	
September 28 October 19 October 26	Assignments Students complete three assignments over the duration of the course. The

Due Date	
	assignments generally require students to manipulate data into a form best suited for making a particular business decision, using the toolkit learned in the course. Students must submit assignments at the beginning of class, in the form of computer printouts. Each assignment is worth 10%. *Late Delivery of assignments* *The students will lose 5% of their assignment grade for every day the assignment is delayed.* *Value: 3 x 10% for a total of 30%*
October 26	Group Project Students complete a group project as part of the course. The instructor provides a data set and a problem statement, and each student group must decide on its own how best to manipulate the data to solve the business problem. Students present their solution and report outputs in a presentation in the final class. Since the problem has no one best solution, effective communication and advocacy for the group's own approach plays as important a role in the group's grade as the choice of manipulation techniques itself. *Value: 30%*
Please refer to the Exam Schedule	Final Exam The material for the final exam incorporates all the techniques discussed in the course. It includes problem-solving questions and short-answer questions. The three-hour exam will take place at a time and place to be announced. Please refer to the exam schedule. *Value: 40%*

General Academic Policies: Grading, Academic Honesty, Accommodations and Exams

Grades at Schulich are based on a 9-value index system. The top grade is A+ (9) and the minimum passing grade is C- (1). To keep final grades comparable across courses, sections of required core courses are normally expected to have a mean grade between 4.7 and 6.1.

The Schulich School does not use a percentage scale or prescribe a standard conversion formula from percentages to letter grades. Conversions within a course are at the discretion of the instructor.

For more details on the index, grading policy, and grade point average (GPA) requirements, see the Student Handbook or the Student Services & International Relations website:

http://www.schulich.yorku.ca/client/schulich/schulich_lp4w_lnd_webstation.nsf/page/Enrolment+Grades+and+Convocation!OpenDocument#tabs-2

Academic honesty is fundamental to the integrity of university education and degree programs, and applies in every course offered at Schulich. Students should familiarize themselves with York University's policy on academic honesty, which may be found in the Student Handbook and on the Student Services & International Relations website:

http://www.schulich.yorku.ca/client/schulich/schulich_lp4w_lnd_webstation.nsf/page/Academic+Honesty!OpenDocument

Accommodations. For accommodations sought due to exam conflicts, religious reasons, unavoidable absences or disabilities, please refer to the Student Handbook or contact Student Services.
For counseling & disability services, contact Student Services or see http://www.yorku.ca/cds/.

Exams (Absence from)

Final. Within 24 hours of missing a final examination, students must contact the Director of Student Services at (416) 736-5060 and must also contact their course instructor. Formal, original documentation regarding the reason for missing the exam must be submitted to the Director of Student Services (SSB Room W262) within 48 hours of missing the final exam. Students who miss a final exam due to illness must have their doctor complete an "Attending Physician's Statement." For more details, see:

http://schulich.yorku.ca/client/schulich/schulich_lp4w_lnd_webstation.nsf/page/Enrolment+-+MBA+Exam+Schedule?OpenDocument