

Course Handbook

**BUSINESS ANALYTICS FOR
MANAGEMENT DECISIONS**

BUA 345

Spring 2024



*Martin J. Whitman School of Management
Syracuse University
Professor Padmal Vitharana*

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INFORMATION ABOUT YOUR PROFESSOR

Instructor: Dr. Padmal Vitharana

Email: padmal@syr.edu

Office Hours: To be announce later and will be posted on Blackboard

A Short Biographical Sketch of your Professor

Padmal Vitharana is a professor of information systems and Business Analytics in the Martin J. Whitman School of Management at Syracuse University. He received his Bachelor of Science, Master of Business Administration and Doctor of Philosophy degrees from the University of Wisconsin system. His research expertise lie in system analysis and design. His research has been published or forthcoming in leading journals such as the *IEEE Transactions on Software Engineering*, *IEEE Transactions on Systems, Man, and Cybernetics*, *Journal of MIS*, *Marketing Science*, *Journal of AIS*, *Communications of the ACM*, *Database for Advances in Information Systems*, *Communications of the AIS*, *Information Resource Management Journal*, *Marketing Science*, and *Information & Management*. He also has presented papers at the International Conference on Information Systems (ICIS), Americas Conference on Information Systems (AMCIS), Marketing Science Conference, INFORMS, and Workshop on Information Technology and Systems (WITS). He has served as an associate editor in *Communications of the AIS* and *IEEE Transactions on Services Computing*. Prof. Vitharana has extensive industry experience in the development and management of information systems. His teaching interests lie in information systems in general and, systems analysis and design, database management, e-commerce, and software (application) development in particular.

More information about Prof. Vitharana can be found at
<https://whitman.syracuse.edu/faculty-and-research/faculty-staff-directory/details/padmal>

TENTATIVE SEMESTER SCHEDULE

Week	Topic
#1	Introduction to BUA 345 Introduction to Business Analytics Review Syllabus
#2	Introduction to Business Analytics What is Business Analytics? How can it be applied? Who uses it? Enterprise BA tools, function-specific analytics (CRM, SCM, etc.), analyzing simple social networks.
#3	Introduction to Data Management Sources of data (enterprise systems, corp. databases, web, etc.), Importing & cleaning data (removing duplicates, data formats, data validation), parsing data ('text to columns', text functions). Data types (e.g., cross-sectional and time-series). Data tables, sorting & filtering data, linking tables, queries, Pivot tables and Pivot charts. Data Visualization: Conditional formatting, Graphs.
#4	Topics Continued...
#5	Developing Deductive Models Conceptualization & influence diagrams; formulation, spreadsheet design, model auditing and testing, generating solutions, sensitivity analysis.
#6	Topics Continued...
#7	Analytics Methods & Inductive Modeling Statistical Regression, Diagnostics, Exploring relationships between one or more variables, validation methods.

#8	Topics continued...
#9	*** Spring Break – NO CLASSES ***
#10	Predictive: Time Series methods, developing parsimonious models, relating two times series.
#11	Statistical Analysis
#12	Optimization Models
#13	Model evaluation and Model communication Advanced graphing and charting tools. Visualization with dashboards, slicers, interactive controls.
#14	Topics Continued...
#15	*** Project ***

Course Information

Course Description

BUA 345 Introduction to business analytics and statistical techniques used by managers to make decisions. Topics include defining business problems, identifying data needs to solve defined problems, and using information technologies to collect, analyze, and communicate findings.

BUA 345 also augments Syracuse University's Shared Competencies for **Information Literacy and Technological Agility (ILTA)**. One of six shared competencies (a comprehensive review can be found at <https://effectiveness.syr.edu/shared-competencies/>), ILTA focuses on **identification, collection, evaluation, and responsible use of information as well as effective, ethical, and critical application of various technologies and media in academic, creative, personal, and professional endeavors**. ILTA along with other shared competencies aims to enhance Syracuse University students' education through an integrated learning approach.

Course Learning Objectives

The following BUA 345 course objectives are aligned with **Information Literacy and Technological Agility (ILTA)** competencies:

- 1) Describe the role of business analytics in effective decision making.
- 2) Demonstrate the use of analytics in executing key steps in addressing – modelling and solving (conceptualizing, formulating, generating solutions, conducting sensitivity analysis, etc.) – open-ended business decision problems.
- 3) Describe how to explore, visualize, and summarize data to better understand the patterns in the data and the opportunities that data presents in addressing a business problem.
- 4) Collect, clean, prepare, and understand data prior to its use with analytics methods.
- 5) Apply a range of analytics methods including regression, prediction, and optimization.
- 6) Communicate analyses results and insights using visualization charts, graphs, and dashboards.

BlackBoard Course Information System

Your instructor will use the BlackBoard course information system to communicate with you (e.g., make announcements, post course documents, etc.).

Course Format

Classes will include a mixture of lectures, hands-on skill development, homework, and exams. I assume that you have already developed PC skills and will not address that in this course. If you don't feel comfortable with your general knowledge of computing concepts and terminology, see me for suggestions on additional background reading.

Prerequisites

MAS 261

Audience

This is a required course for Whitman students.

Credits

Three credits.

Grading / Evaluation

Grading consists of assignments, exams, and project. Course grade will be evaluated based on your performance in the following:

Assignments	40%
Exams	30
Project	20
Attendance	5
Participation	5

<i>Total</i>	100%

Grading Distribution

The grades for the course will be distributed based on a curve. In other words, the grade you will receive is based on how well you do in the course as well as how well your classmates do in the course. For each exam, I will inform you of your score (e.g., 94%, 87%), class average, as well as minimum and maximum scores. If you need to know how well you are doing in the course (relative to others) at any time during the semester, please come see me in my office to discuss this. I will not provide this information over email or phone. All your individual scores for exams, assignments, etc., will be posted on BlackBoard.

Teaching/Learning Philosophy

I believe that we all learn from our mistakes. My philosophy is that assignments are for learning and exams are for assessment. I am lenient in grading assignments because if you make a mistake, I want you to learn from it. First, I want you to figure out the mistake by yourself. If you are not able to figure out the mistake, then talk to the professor or the teaching assistant. I do not give answer keys for assignments.

Assignments

- You are required to complete all the assignments **individually**.
- Students should not seek help from other students or exchange files/answers from other students. Any questions about the assignment should be posted on Discussion Board on BlackBoard.
- **Unless otherwise instructed, ALL assignments must be completed or placed on BlackBoard.**
- For each day (or 24 hours) the assignment is late, I will deduct 10%. Assignments that are more than one week late will not be accepted. **For example, if the assignment is due Wednesday at 11pm and you hand in the assignment at 8am the next day, then the maximum points you could receive is 90% (10% deduction).**

Exams

- Exams include problems or questions from any of the material covered in assignments, lecture, textbook, guest speaker presentation, etc.
- **No make-up exams will be given (UNDER ANY CIRCUMSTANCES).**

- Exams will be open notes, open book.

Project

- Students will complete a semester long project. Information will be provided separately.

*** IMPORTANT NOTES***

Missed Classes

I expect students to take notes during class period. If you miss a class, it is your responsibility to get notes from a classmate. Unfortunately, it is not possible to go over 1 hour 20 minutes of missed class material during 1 office hour.

Exam Preparation

Students need to use class notes, assignments, and other material to prepare for exams. I do not give a study guide prior to an exam. I will inform you which assignments will be in the exam.

Lecture

- You are required to come to each lecture.
- Attendance counts towards your grade. Attendance means coming to class on time and leaving class once the instructor has indicated that the class period has come to a conclusion. **If you come to class on time, then you will receive TWO attendance points; if you come to class FEW MINUTES late or leave early without instructor's prior approval, then you will receive only ONE attendance point.** Please note that I may decide not to take attendance for a particular class session.
- Do not write your friend's name in the attendance sheet when he/she is not in class. During the class period, I will call on students to participate in the class discussion. **If you are not in the class when I read your name but your name appears in the attendance sheet, I will decrease your course grade by one letter grade (so, do not ask your friends to write your name in the attendance sheet on your behalf).**

Participation

- Students are offered multiple avenues for participation (see below).
- One way to participate is to **come prepared to class and actively participate** in the class. You do not receive participation points for simply asking clarification questions, agreeing with the instructor or another student's comment/question. Participation means coming to class prepared (e.g., read chapter), actively participating in the class discussion, critically expressing views for and against issues discussed in class, etc.

NO USE OF ELECTRONIC DEVICES IN THE LECTURE

If a student uses an electronic device such as laptop and phone for texting, I will tell you to **LEAVE THE CLASSROOM** and your **NAME WILL BE CROSSED OUT FROM THE ATTENDANCE LIST**. When the class is in session, electronic devices should **NOT** be placed on the **TABLE** or your **LAP**. They should be placed **INSIDE YOUR BOOK BAG** or on the floor (out of reach; out of sight).

Your actions that enhance (increase) your participation grade:

- Coming to class on time and leaving the class after the class is dismissed.
- Read the material for that day before coming to class.
- Critically constructing and articulating arguments for and against topics covered in class.

Your actions that degrade (decrease) your participation grade:

- Coming to class late and leaving the class early.
- Coming to class unprepared (not reading the assigned material before class).
- Not contributing for the classroom discussion.
- Talking in class (whether it is lecture related or not; if you have a lecture related question, please ask the instructor).
- Leaving cellular phones turned on during the class period (causing them to go off during the class period distracting instructor/students). **Checking or browsing of the cellular phones in class is not allowed.**
- **Using electronic devices such as iPods or listening to music with earphones.**

- Another way to participate is to **contribute to the class discussion board for assignments**. Professor uses a discussion board to facilitate learning. You can contribute to this discussion board on regular basis to accrue participation points. You should NOT wait until the end of the semester to contribute; you should contribute to the discussion board throughout the semester.

IMPORTANT NOTICE

Although I plan to strictly adhere to the listed schedule (e.g., when the exams are held, when assignments are due, etc.), I reserve the right to change it as necessary.

POLICIES AND STATEMENTS

Syracuse University Policies:

Syracuse University has a variety of other policies designed to guarantee that students live and study in a community respectful of their needs and those of fellow students.

University Attendance Policy

Attendance in classes is expected in all courses at Syracuse University. Students are expected to arrive on campus in time to attend the first meeting of all classes for which they are registered. Students who do not attend classes starting with the first scheduled meeting may be academically withdrawn as not making progress toward degree by failure to attend. Instructors set course-specific policies for absences from scheduled class meetings in their syllabi.

It is a federal requirement that students who do not attend or cease to attend a class to be reported at the time of determination by the faculty. Faculty should use “ESPR” and “MSPR” in Orange Success to alert the Office of the Registrar and the Office of Financial Aid. A grade of NA is posted to any student for whom the Never Attended flag is raised in Orange SUccess. More information regarding Orange SUccess can be found at <http://orangesuccess.syr.edu/getting-started-2/>.

Accessibility and Disability-Related Accommodations

Syracuse University values diversity and inclusion; we are committed to a climate of mutual respect and full participation. There may be aspects of the instruction or design of this course that result in barriers to your inclusion and full participation in this course. I invite any student to contact me to discuss strategies and/or accommodations (academic adjustments) that may be essential to your success and to collaborate with the Center for Disability Resources (CDR) in this process.

If you would like to discuss disability-accommodations or register with CDR, please visit Center for Disability Resources. Please call (315) 443-4498 or email disabilityresources@syr.edu for more detailed information.

The CDR is responsible for coordinating disability-related academic accommodations and will work with the student to develop an access plan. Since academic accommodations may require early planning and generally are not provided retroactively, please contact CDR as soon as possible to begin this process. <https://disabilityresources.syr.edu/>

Discrimination or Harassment

Federal and state law, and University policy prohibit discrimination and harassment based on sex or gender (including sexual harassment, sexual assault, domestic/dating violence, stalking, sexual exploitation, and retaliation). If a student has been harassed or assaulted, they can obtain confidential counseling support, 24-hours a day, 7 days a week, from the Sexual and Relationship Violence Response Team at the Counseling Center (315-443-8000, Barnes Center at The Arch, 150 Sims Drive, Syracuse, New York 13244). Incidents of sexual violence or harassment can be reported non-confidentially to the University’s Title IX Officer (Sheila

Johnson Willis, 315-443-0211, titleix@syr.edu, 005 Steele Hall). Reports to law enforcement can be made to the University's Department of Public Safety (315-443-2224, 005 Sims Hall), the Syracuse Police Department (511 South State Street, Syracuse, New York, 911 in case of emergency or 315-435-3016 to speak with the Abused Persons Unit), or the State Police (844-845-7269). I will seek to keep information you share with me private to the greatest extent possible, but as a professor I have mandatory reporting responsibilities to share information regarding sexual misconduct, harassment, and crimes I learn about with the University's Title IX Officer to help make our campus a safer place for all.

Faith Tradition Observances

Syracuse University's Religious Observances Policy recognizes the diversity of faiths represented in the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their traditions. Under the policy, students should have an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors no later than the end of the second week of classes for regular session classes and by the submission deadline for flexibility formatted classes. Student deadlines are posted in MySlice under Student Services/Enrollment/My Religious Observances/Add a Notification.

Policy on Faculty Use of Student Academic Work

Academic work completed during a semester may be used by professors for educational purposes in courses during the semester. Students' registration and continued enrollment constitute consent for this purpose. Before using students' work for educational purposes in subsequent semesters, professors will either request students' permission in writing and render the work anonymous by removing all personal identification.

Academic Integrity Policy

Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. You can read what students need to know here: <https://class.syr.edu/academic-integrity/policy/>

The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. SU students are required to read an online summary of the University's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice.

The Violation and Sanction Classification Rubric establishes recommended guidelines for the determination of grade penalties by faculty and instructors, while also giving them discretion to select the grade penalty they believe most suitable, including course failure, regardless of violation level. Any established violation in this course may result in course failure regardless of violation level.

All academic integrity expectations that apply to in-person quizzes and exams also apply to online quizzes and exams. In this course, all work submitted for quizzes and exams must be yours alone. Discussing quiz or exam questions with anyone during the quiz or exam period violates academic integrity expectations for this course.

Using websites that charge fees or require uploading of course material (e.g., Chegg, Course Hero) to obtain exam solutions or assignments completed by others and present the work as your own violates academic integrity expectations in this course.

Turnitin

This class will use the plagiarism detection and prevention system Turnitin. You will have the option to submit your papers to Turnitin to check that all sources you use have been properly acknowledged and cited before you submit the paper to me. I will also submit all papers you write for this class to Turnitin, which compares submitted documents against documents on the Internet and against student papers submitted to Turnitin at Syracuse University and at other colleges and universities. I will take your knowledge of the subject matter of this course and your writing level and style into account in interpreting the originality report. Keep in mind that all papers you submit for this class will become part of the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers.

Use of Class Materials and Recordings

Original class materials (handouts, assignments, tests, etc.) and recordings of class sessions are the intellectual property of the course instructor. You may download these materials for your use in this class. However, you may not provide these materials to other parties (e.g., web sites, social media, other students) without permission. Doing so is a violation of intellectual property law and of the student code of conduct.

Family Educational Rights and Privacy Act (FERPA)

Work produced by students as part of this course will be used for educational purposes. It is understood that registration for and continued enrolment in this course constitute permission by the student to use his or her works for educational purposes. In compliance with the federal Family Educational Rights and Privacy Act, works in all media produced by students as part of their course participation at Syracuse University may be used for educational purposes, provided that the course syllabus makes clear that such use may occur.

Other Important Classroom Policies

1. Electronic recording of lectures is prohibited unless prior approval is received from the instructor.
2. Since it distracts both the instructor and students, no cellular phone use is allowed in class; if you carry a cellular phone, please make certain that it is turned off during lecture.

Syracuse University Martin J. Whitman School of Management Student Values

The Martin J. Whitman School of Management recommends to its students the following values. When lived up to, these values will help students to fulfill their responsibilities and obligations to themselves, their families, their communities, and their professional careers.

LEARNING - The mission of Syracuse University and the Martin J. Whitman School of Management is learning. We are a learning community, and students, at the center of that community, should focus their efforts on learning. Students should not only learn the content of their curriculum, but should also develop an appreciation for the importance of learning and a desire to continue to learn throughout their lives.

HONESTY - Honesty is the cornerstone of trust. An organization will be most effective in fulfilling its purpose when trust exists among its members. In an academic community honesty is absolutely essential to the attainment of the mission of learning. An environment of honesty and trust also encourages effort, teamwork, and service. Students should strive to be honest in both their academic and personal lives.

EFFORT - Learning requires effort. Academic effort includes preparation of all assignments and attendance at all classes. It also includes being engaged in one's courses, i.e., involving oneself in courses by paying attention to what's going on and contributing to the learning process whenever possible. All students, regardless of academic ability, are capable of expending the necessary effort to learn.

TEAMWORK - In any organization, teamwork is an essential ingredient of success. When people work together in teams an organization can take advantage of the diverse mental, emotional, and psychological resources possessed by individuals. In an effective team the synergistic effect is apparent, leading to superior results, innovation, and continuous improvement. Students should prepare for their future by engaging in collaborative learning and learning fundamental skills of teamwork.

SERVICE - Students should learn how, in their management and business careers, they can perform service that will contribute to social well-being. To do this, students need to develop self-awareness and an understanding of the interdependence of business and society, and learn ways in which business people can use their business skills to improve society.

The Syracuse University Compact

We the students, faculty, staff, and administrators of Syracuse University will:

- support scholarly learning as the central mission of the University,
- promote a culturally and socially diverse climate that supports the development of each member of our community,
- uphold the highest ideals of personal and academic honesty, and
- maintain a safe and healthy environment for each member of our community.

In all aspects of university life, we will work together to reach these goals.

Syracuse University Martin J. Whitman School of Management Mission Statement

The Syracuse University Martin J. Whitman School of Management is a center for learning focused on entrepreneurial management, integrating global competition, leadership, and technology management, and committed to discovering and disseminating knowledge and providing select educational experiences of the highest caliber to advance the theory and practice of management.