MSOM 623: Analytics Capstone

Prerequisite(s): Prerequisites: MSOM 601, MSOM 602, MSOM 603, MSOM 605, MSOM 606, MSOM 607, MSOM 610, MSOM 611, MSOM 620, MSOM 621, and MSOM 622
Credits: 3

I. Course Description

This capstone course integrates the concepts of analytical tools for management decisions; decision support systems for business; business analysis and modeling; and data mining, mapping, warehousing, and visualization. Students will complete an extensive and comprehensive project to demonstrate mastery of the analytics material covered in the preceding courses. A biblical worldview of several key management principles will also be presented and assessed.

II. Course Objectives

1. Demonstrate an understanding of how decision support systems are used in the operations of the organization.

2. Develop recommendations for using business analysis and modeling.

3. Explain how data mining is used in an organization and discuss how it relates to data mapping.

4. Analyze the use of data warehousing for future decision-making processes.

5. Explain the process of data visualization.

6. Integrate the key concepts of analytics for a final project.

7. Assess the biblical worldview of several key management principles.

III. Course Textbooks and Readings

*Students must purchase in advance texts and/or materials for this course. However, these texts were required reading in prerequisite courses.

> **Business Analytics: Data Analysis & Decision Making, 5th Edition**
> Publisher: Cengage
> ISBN: 9781133629603

Essentials of Business Analytics, 1st Edition
Publisher: Cengage
ISBN: 9781285187273

Data Mining for Business Intelligence: Concepts, Techniques and Applications in Microsoft Excel, 2nd edition
Publisher: Wiley
ISBN: 9780470526828

Management by Proverbs
Publisher: Xulon Press
ISBN: 9781607910176

Elbashir, M. Z., Collier, P. A., Sutton, S. G., Davern, M. J., & Leech, S. A. (2013). **Enhancing the Business Value of Business Intelligence: The Role of Shared Knowledge and Assimilation.** *Journal Of Information Systems, 27*(2), 87-105. (pdf provided)

Harriott, J. (2013). **7 Pillars for Successful Analytics Implementation**. *Marketing Insights, 25*(1), 34-41. (pdf provided)

IV. Weekly Information

Module One – Week 1

Introduction to Capstone Project Requirements

Objectives

At the end of this lesson, you should be able to:

    1.1 Describe the process for the capstone course.
    1.2 Understand how a company's commitment impacts the successful implementation of analytics.

Reading

Principles 15-18 in Part 4 of Management by Proverbs
Review all previous books as needed
Intro to Course Project

Deliverables

Discussion: Management by Proverbs Principles 15 - 18

Module Two – Week 2

Value of Analytics to an Organization

Objectives

At the end of this lesson, you should be able to:

2.1 Describe the use of analytics in the chosen organization.
2.2 Analyze how analytics can be used to increase value in an organization.

Reading

"Enhancing the Business Value of Business Intelligence: The Role of Shared Knowledge and Assimilation"
Review all previous books as needed

Deliverables

Discussion: Capstone Project Checkpoint

Written Assignment: Article Summary and Analysis

Part I of Course Project: Selection of course project and outline

Module Three – Week 3

Predictive Performance of Data Mining, Classification Performance, and Multiple Linear Regression

Objectives

At the end of this lesson, you should be able to:

3.1 Identify ways the predictive performance of data mining methods can be assessed.
3.2 Describe how to judge classification performance.
3.3 Outline the process of using multiple linear regression.

Reading

Principles 19-22 in Part 5 of Management by Proverbs book
Review all previous books as needed

Deliverables

Discussion: Management by Proverbs Principles 19 - 22

Module Four – Week 4

Capstone Project Work

Objectives

At the end of this lesson, you should be able to:

    4.1 Describe the problem associated with your chosen organization.

    4.2 Analyze the analytics necessary to solve the problem(s) identified.

Reading

Review all previous books as needed

Deliverables

Discussion: Capstone Project Checkpoint
Assignment: Part II of Course Project

Module Five – Week 5

Analytics and Employee Performance Measurement

Objectives

At the end of this lesson, you should be able to:

    5.1 Describe how employees are measured in an organization based on the principles.

    5.2 Analyze how rewards can be tied to the analytical process.

Reading

Principles 23-25 in Part 6 of Management by Proverbs book
Review all previous books as needed

Deliverables

Discussion: Management by Proverbs Case Study

Module Six – Week 6

Analytics Implementation

Objectives

At the end of this lesson, you should be able to:

    6.1 Describe the 7 pillars for successful implementation of analytics.

    6.2 Analyze successful implementation strategies.

Reading

Article "7 Pillars for Successful Analytics Implementation"
Review all previous books as needed

Deliverables

Discussion: Business Challenges
Written Assignment: Journal Article Summary and Analysis

<u>**Module Seven – Week 7**</u>

Capstone Project Final

Objectives

At the end of this lesson, you should be able to:

> 7.1 Integrate all concepts from the analytics course into the final project.

Reading

Review all previous books as needed

Deliverables

Discussion: Integrating of Business Analytics
Final capstone project: Part 3

<u>**V. Capstone Project**</u>

Overview

This capstone supports all the course objectives and requires the student to apply all of the critical thinking principles and methodologies learned throughout the analytics courses.

- Each of the three parts will be added to each other to make one large, complete paper.
- Part I (Lessons 1-2; due in Week 2) – Includes outline of the project and identification of organization that will be used.
- Part II, with Part I corrections (Lessons 3-4; due in Week 4) – Includes 10 pages of capstone project.
- The final paper will be submitted the final week of class and includes Part I, Part II, and Part III. (Lessons 5-7; due in Week 7) – Includes complete course project with 15-20 pages (not including title page and reference page)
- The professor will grade each part independently and it will be up to the student to correct prior parts with the feedback from the professor. For example, when the student submits Part II, they will also include the corrected Part I based on the professor's comments.
- The final paper will have Part III and the corrected versions of Part I and Part II.

Submission Requirements

- The paper must follow APA 6th edition formatting with a cover page and reference page
- The paper is to be written in Time New Roman, 12-point font and double spaced
- Submit your paper by the end of the indicated lesson
- A minimum of three peer-reviewed sources must be used per lesson. Appropriate research materials can be found at the CSU Online Library.
- Please submit your paper using this file name format – LastnameFirstinitialPart #.docx_For example: **DoeJPartI.docx** would be the proper format for John **Doe's** file submission for **Part I**

The capstone course will consist of a comprehensive project based on the content that you have learned in MSOM 606, MSOM 620, MSOM 621, and MSOM 622. The purpose of this capstone course is to apply the different concepts that you have learned in these four courses. In MSOM 606, the focus was on analytical tools for decision making. In MSOM 620, the major focus was on data-drive analytics. In MSOM 621, the major focus was on business analysis and the tools necessary to complete business analysis. Finally, in MSOM 622, the focus was on data mining and data technology.

For this capstone project, you will be required to meet with a member of a client organization. An example would be a particular department at a large company or a non-profit company. After you choose the client, you will gather relevant data from the client, and develop a project document that will include the following elements:

1. A set of organizational problems discussed by the client that could be solved through business intelligence. An example of such a problem would be an online retailer who wanted to determine how to save money with marketing. Data mining could be used to cluster the online customers together in order to save significant money in advertising.

2. A detailed description of the business intelligence solution to solve the problem or problems identified in part 1.

3. A detailed description of the costs and potential benefits that the organization would experience with the use of business intelligence.

4. A complete proposal to the organization including the following:
   a. Business intelligence solution to be used
   b. Research and past successes using this type of business intelligence solution by other companies in the same industry
   c. Example of the solution and how it would be implemented
   d. Cost versus benefit of the solution
   e. Summary of the problem and the solution

The capstone project should be complete and comprehensive. The total project should be approximately 15 to 20 pages in length. You should have a minimum of 10 peer-reviewed

sources for the project.

VI. Course Information and Grading

Course Requirements (Weekly)

Each lesson will be based on the inclusion and grading of the following segments. The overall program outcomes will be measured based on the following standardized grading scale percentages.

55% Capstone Project
15% Journal Article Summaries
<u>30% Discussion Boards</u>
100 %

Class Discussions

Successful online learning requires active and meaningful participation in the Discussion Board Forum. Critical thinking, appropriate use of judgment and professional comments are required for all responses. Simple agreement or disagreement with a fellow student does not constitute a quality response. Student opinions are important but must be supported by relevant data obtained in the literature or text.

1. One initial discussion board post is due by the fourth day (Thursday @ 11:59 pm) of each weekly module and two response posts are due by the last day (Sunday @ 11:59 pm) of each weekly module.
   a. Undergraduate Word Count Requirements:
      i. Initial post must be >200 words
      ii. Responses must be >150 words
   b. Graduate Word Count Requirements:
      i. Initial post must be >250 words
      ii. Responses must be >200 words

2. Participation – <u>Students must meet initial and response post deadlines to be eligible for full points</u>. Late initial posts may be accepted with a 33% reduction in the overall score assessed for each day late. Two response posts are required. If only one is received, then the overall score will be reduced by 25%. If no response posts are received, then the overall score will be reduced by 50%.

3. Students should be respectful and write in a proper and professional manner.

Please refer to the Discussion Board Rubric located within course syllabus for specific requirements and guidance on delivering a substantial discussion.

Late and Make-up Assignments

All deliverables are due by 11:59 PM on the due dates indicated. When substantive emergencies occur, acceptance of late submissions is left to the discretion of the course instructor.

Assignments that are submitted after the due date <u>with prior written approval</u> (text or email) from the instructor may receive the following deductions:

1. Late assignments are subject to a deduction of 10% of the available points for each day late.

2. Assignments submitted later than one week after due date will not be accepted and will receive a zero (0).

3. No work may be submitted after the last day of the course.

4. See Class Discussions for late discussion post policy.

Written Work

- All graded assignments must be typewritten, as designated by the professor of record for the course.
- All referenced materials must be presented according to the Publication Manual of the American Psychological Association (APA), based on the most current published edition. (current, 7th edition) (Except for English courses that specify use of MLA format.)
- All required written assignments are due on the last night of each lesson week at 11:59pm EST. This information is included in the course scheduler and calendar of every course.
- All written and graded assignments are considered the property of the College of Adult and Professional Studies and should be returned to the appropriate professor of record for the related course.
- SafeAssign may be used to check for plagiarism.

Grading Scale and Assigned Letter Grades

The College of Adult and Professional Studies follows the following numerical and letter grading scale. Grades will be posted by the Sunday night following the closing of the lesson. No grades will be given to students over the phone.

A: 930 - 1,000 points
B+: 900 - 929 points
B: 830 - 899 points
C: 750 - 829 points
F: 0 - 749 points

Discussion Board Rubric – Introduction (First week only)

Criteria	Minimal	Effective
Percent Possible: 0 or 50 Initial Post Introduction.	Percent Possible: 0 No post or did not follow instructions at all.	Percent Possible: 50 Posted following instructions.
Percent Possible: 0 or 50 **Response Posts** Welcome.	Percent Possible: 0 No post or did not follow instructions at all.	Percent Possible: 50 Posted following instructions.

Discussion Board Rubric - Initial Post

Initial Post Rubric	Minimal	Competent	Effective	Mastery
Grade	**0-74%**	**75-82%**	**83-92%**	**93-100%**
Content	• Provides weak contribution to the discussion board • Does not convey concept understanding • Shows evidence of critical thought but is not concise or complete	• Makes mostly complete response to the questions • Mostly restatement of materials • Conveys thoughts adequately; however, need to further develop critical aspects	• Advances the discussion and body of knowledge providing relevant, original thoughts to the question • Conveys thoughts in a well-rounded manner that show understanding, critical thought, and application of concepts	• Relevant and thought-provoking viewpoints • Innovative and indicates a high level of thought • High level of critical thought, analysis, and application of concepts and ideas
Support & References	• Does not cite any peer-reviewed sources • Addresses questions in a manner that is unclear • Not appropriate APA format	• Student cites 1 peer-reviewed source • Not in appropriate APA format	• Student cites 2 peer-reviewed sources in the body of the post • Not in appropriate APA format	• Student cites 2 peer-reviewed sources in the body of the posts • Proper APA format
Mechanics/ Length	• Post is less than 196 • Poorly written • 0 points for posts submitted after 11:59 PM EST on Thursday	• Post is 197-221 words • A few writing errors	• Post 222-250 words • Well written	• Post exceeds 250 words • Very well written

Discussion Board Rubric - Peer Response

Peer Response Rubric	Minimal	Competent	Effective	Mastery
Grade	**0-74%**	**75-82%**	**83-92%**	**93-100%**
Content	• Shows minor comprehension of concepts and viewpoints from peers • Responses are vague and do not show understanding or comprehension	• Shows adequate understanding of the knowledge and concepts posted by peers • Responses are mostly, "I agree…" • Source is somewhat relevant and published in last 5 years	• Advances discussion providing additional commentary and critique • Responses are correct but mostly restate the peers' viewpoints without development of critical thought • Source is relevant and published in last 3 years	• Advances discussion providing additional commentary that is relevant or offers an alternative • Critical thought development is evidenced by thoughtful and meaningful responses • Source is relevant and published in last 3 years
Support & References	• Does not cite any peer-reviewed sources • Not appropriate APA format	• Student cites 1 peer-reviewed source • Not in appropriate APA format	• Student cites 2 peer-reviewed sources • Not in appropriate APA format	• Student cites 2 peer-reviewed sources in the body of the posts • Proper APA format
Mechanics/ Length	• Post is less than 158 words • Poorly written • 0 points for posts submitted after 11:59 PM EST on Sunday	• Post is 158-178 words • A few writing errors	• Post 178-200 words • Well written	• Post exceeds 200 words. • Very well written

Journal Article Summaries and Capstone Project Rubrics (100 Points)

Assignment Rubric	Minimal	Competent	Effective	Mastery
Grade	**0-74%**	**75-82%**	**83-92%**	**93-100%**
Critical Thinking	• Consistently below expectations • Lacks significant details of the assignment • Lacks critical thought, analysis, and application • Partially addresses the topic	• Inconsistent comprehension • Marginal responses • Content, concepts, ideas/responses are not fully developed	• Demonstrates satisfactory understanding • Lacks answer to all questions/full scenario • Demonstrates some knowledge of content and professional vocabulary • Content needs additional focus for innovative responses other than restatement of text	• Relevant use of vocabulary throughout • Demonstrates superior knowledge of concepts and theories • Addresses problem/issue directly • Demonstrates active critical thinking relevant to problem identification and effective solutions
References & Organization	• Does not cite any peer-reviewed sources • Not appropriate APA format • Does not meet page number or word count requirement as specified in instructions • Poorly written • 0 points for late assignments	• Sources are outdated or ineffective • Lacks focus on content • Unorganized • Some writing errors • Not in appropriate APA format • Does not meet page number or word count requirement as specified in instructions	• Student cites some relevant, current peer-reviewed sources • Follows directions • APA formatting demonstrated but not extensive • Meets page number or word count requirement as specified in instructions	• Professional writing structure • Well-organized response • Student cites appropriate, current peer-reviewed sources • Proper APA format • Exceeds page number or word count requirement as specified in instructions