University of Nevada, Reno

Online Master of Science in Business Analytics (MSBA) Program Handbook 2021-2022

Information Systems | College of Business | University of Nevada, Reno

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2.   Program Overview

On behalf of the College of Business at the University of Nevada, Reno, welcome to the Online Master of Science in Business Analytics (MSBA) Degree Program. This handbook can be used throughout the MSBA program to provide guidance for requirements and/or expectations. The UNR Graduate School has a dedicated website listed among the resources at the end of this Handbook. Specific program information is located at the [MSBA website](#).

3.   Program Description

The Master of Science in Business Analytics (MSBA) prepares students to launch a career exploring and analyzing data to identify, understand, and answer questions that are critical to organizations. The degree program integrates knowledge and skills in big data management, quantitative methods, organizational decision-making, and information communication.

The program is designed to meet the growing need for data science professionals, giving graduates the skills necessary to help organizations harness and understand the power of information. Students completing the program will develop analytical skills and the expertise to solve complex problems from multiple perspectives. These skills are in demand across both for-profit and non-profit organizations.

Business analytics professionals are critical in helping guide organizations in solving twenty-first-century business challenges. Students completing the MSBA will have exposure to innovative learning methodologies that support data-driven decision-making. Programs in business analytics focus more on the business application of analytics and less on technical aspects.

Programs are offered almost exclusively through colleges of business, though there is often an interdisciplinary emphasis in instruction. This program focuses on business applications and provides students with diverse skills in order to launch a career as a professional focusing on the business use of data analytics.

4.   Student Learning Outcomes

Students completing the MSBA will be able to:

- Collect, transform, and store large, diverse data sets within a high-data-velocity environment.
- Formulate research questions that can be addressed with analytical methods.
- Describe and identify appropriate analytical methods (descriptive, diagnostic, predictive, and prescriptive) to address research questions.
- Clearly and concisely communicate the results of analytical activities using visual methods.
- Identify, describe, and manage the activities necessary to help an organization make effective use of data-informed decision-making.
- Describe the ethical and legal issues involved with collecting, storing, and using data.
- Identify and analyze the security risks involved with collecting, storing, and using data.

5.   Degree requirements – Program of Study

All MSBA students must complete 30 credits in total, comprised of 10 x 3 credit required courses.

Course offering structure

Courses are offered together during 14-week sessions. All courses are 14 weeks long.

Fall, spring, and summer semesters:

- BAN 701 – Business Analysis Methods
- BAN 702 – Data Transformation & SQL

Fall semester only:

- BAN 703 – Information Visualization & Communication
- BAN 704 – Applied Data Science

Spring semester only:

- BAN 705 – Enterprise Processes & Analytics
- BAN 706 – Predictive Modeling & Data Mining

Summer semester only:

- BAN 707 – Big Data
- BAN 708 – Data Security, Risk Management & Ethics

Fall, spring, and summer semesters:

- BAN 709 – Leadership Strategies
- BAN 710 – Business Analytics Capstone Project

6.   Bootcamp requirement (pre-program):

All admitted MSBA Program students are required to successfully complete a no-fee, non-credit, self-paced skills bootcamp. Final assessment(s) must be successfully completed with a passing score of 80% and, prior to the student embarking upon the first 2 courses in the MSBA Program.

Depending on the semester of matriculation, students must be registered in courses each semester to meet a specific course progression. Once all requirements have been met, students need to submit a Notice of Completion form in order to graduate.

7. Course descriptions and course learning objectives

BAN 701 – Business Analysis Methods

This course prepares students for an increasingly data-driven world by helping them gain theoretical and practical skills using data to investigate and provide solutions to business problems.

The course focuses on formulating and analyzing questions in business as follows:

- Formulate measurable research questions to address business needs.
- Identify sources of data available to answer research questions.
- Create meaningful empirical measures from available data for analysis.
- Distinguish between different study designs and be able to apply them.
- Apply bivariate and multivariate statistical methods using business data.
- Use data visualization to communicate findings and drive business decision-making.

BAN 702 – Data Transformation & SQL

This course introduces how data is stored, retrieved, and transformed into information to support organizational objectives and decision-making. This is a practical, hands-on course designed to help students develop both knowledge and skills related to the management and use of data.

Students will:

- Categorize the different types of data used in organizations and identify how best to store that data.
- Describe the governance and ethical issues that must be addressed when data is collected, organized, stored, and accessed to help support human decision-making.
- Design a small relational database using an entity-relationship diagram (ERD) that is stable and explain why the design is stable.
- Implement a database using Microsoft's SQL Server DBMS with structured query language (SQL) to create, update, and access data in a database.
- Import data from a variety of sources into a relational database. Use techniques to "clean" the data so that it is reliable and consistent.
- Create queries in SQL to produce datasets capable of being processed in other analytical software such as Excel, Tableau, SAS, Mini-tab, and/or SPS.

BAN 703 – Information Visualization & Communication

This course explores how information is created using data-visualization methods. The course focuses on how visualizations are used to analyze data, discover patterns, tell a story, and provide persuasive evidence for business decision-making.

Students will:

- Recognize basic visualization and communication capabilities organizations need to make better decisions.

- Apply the concepts and processes involved in designing, developing, and managing visualization and communications capabilities used for data-driven decision-making.
- Present information in non-textual formats for visual storytelling.
- Design and build reports and dashboards using Tableau to support data-driven decision-making through storytelling.

BAN 704 – Applied Data Science

This course introduces several important modeling approaches for solving decision-making problems. The first part of the course focuses on statistical learning. The second part of the course introduces machine learning and decision-making under uncertainty.

Students will:

- Describe the importance of inference and prediction and distinguish them. Describe supervised and unsupervised learning methods and distinguish them. Interpret the model findings.
- Contrast different statistical and machine learning methods.
- Identify and describe the challenges in real-world data analytics projects.
- Identify and describe "good" vs. "bad" models by virtue of evaluation metrics.
- Identify a challenge or shortcoming in each of the statistical methods discussed in this course and find and describe a solution from the current research to address or alleviate the problem.

BAN 705 – Enterprise Processes & Analytics

Students learn about enterprise processes, in the context of business analytics, in order to apply advanced analytics techniques using big data. This enables students to understand the current state of the organization and track evolving aspects such as customer behavior.

Students will:

- Identify, describe, and model enterprise processes.
- Describe how enterprise processes can be changed through the use of analytics.
- Describe the processes needed to develop, report, and analyze business data.
- Use analytic methods to formulate and solve business problems and to support managerial decision-making.
- Interpret the results of business analytics and their implications to enterprise processes.
- Implement analytical models using a variety of software tools.

BAN 706 – Predictive Modeling & Data Mining

This course focuses on predictive analytics, which predicts outcomes and future trends from existing data to help discover new relationships. Prediction helps decision makers evaluate possible future outcomes and define new predictors.

Students will:

- Apply specific statistical and regression analysis methods applicable to predictive analytics to identify new trends and patterns, uncover relationships, create forecasts, predict likelihoods, and test predictive hypotheses.
- Use quantitative and classification predictive models.
- Use popular tools and industry software for predictive analytics, especially R, R Studio, and R Markdown.
- Formulate predictive analytics questions.
- Select the appropriate method for predictive analysis and how to build effective predictive models.
- Search, identify, gather, and pre-process data for analysis.
- Evaluate the soundness, appropriateness, and validity of student-created models and practice how to interpret and report results for a management audience.

BAN 707 – Big Data

The course emphasizes big data concepts and how that data must be stored to support business decision-making. This course introduces locational data concepts and helps students learn how to develop non-relational databases and apply them to business problems.

Students will:

- Describe the differences among data stored to help solve business problems.
- Identify the value of locational data and its applications in business.
- Set up a non-relational database using MongoDB and demonstrate creating, modifying, and deleting documents within the database.
- Write queries to interact with a non-relational database.
- Use geospatial Application Programming Interfaces (APIs) in the MongoDB environment to store and interact with locational data within a non-relational database.
- Perform analysis on data stored within a non-relational database in order to solve business problems.
- Write and present their locational data findings to a wide audience.

BAN 708 – Data Security, Risk Management, & Ethics

This course examines the role and impact of data analytics in business and society, with emphasis on legal, professional, and public policy issues. The course emphasizes data security and risk management issues for organizations using data analytics techniques.

Students will:

- Recognize and analyze primary threat scenarios of potential vulnerabilities for select settings.
- Identify and describe typical safeguards for computer-based information assets.
- Explain organizational policies for information security and privacy.
- Conduct risk analyses and define potential organizational responses.
- Explain how to use a data-oriented approach to manage security.

BAN 709 – Leadership Strategies

This course introduces leadership strategies and change management in relation to data-supported decision-making in organizations. Students learn how to define and analyze key performance indicators that are effective for a given organization.

Students will:

- Describe the value of data-driven decision-making for organizations.
- Assess the importance and roles of different types of data (financial, economic, accounting, and similar types)
- Identify and select key performance indicators.
- Perform a cost-benefit analysis of data analysis tools practices.
- Select and utilize appropriate format for presentation and/or analysis of data.
- Describe the issues involved in managing a data implementation project.

BAN 710 – Analytics Applied Capstone Project

Students will learn how to implement all steps in an Analytics applied project, including the following: structure an ambiguous problem; define the question; identify, gather, and transform data; identify the appropriate analytics model; perform the evaluation and, effectively communicate (ie. present) the results.

Students will:

- Develop and complete an applied capstone project under faculty supervision.

8.   Contact Information

For any questions about the Online MSBA Degree Program, contact Student Services. You can also contact the Program Director, Kal N. Joshi: knj@unr.edu

9.   New student information – Student Resource Center

New students are enrolled in the online Student Resource Center (SRC) after admission into the MSBA program. The SRC provides students with important information about the program and introduces students to the online learning environment.

10. University of Nevada student ID and communication

- After admission to UNR, students need to obtain and set up an account with My Nevada.
  - Under "For Current Students" "Create My Profile," students can set up their university account, including providing an email address that will be used for all university and program

communication. Online students should use their UNR email account when communicating with instructors and the program director.
- Set up NetID and password at Net ID Activation.
  - This site assists students in activating their NetID and user password, which will be used to access MyNevada, WebCampus, and other university resources.
- Students must log into WebCampus with their UNR NetID to view course content and announcements.

11. Class registration

After admission into the MSBA program, students will be registered into classes by the UNR Admissions and Records Office. **Students are not responsible for registering for courses**. Students with questions about course schedules should discuss them with the program director.

After students are registered, they must log into the course during the first week of class to participate in it. Students who do not log in and participate by the end of the 5th day, which is the 100% tuition refund date, are at risk of being dropped from the course.

12. Admissions requirements

- Bachelor's degree from an accredited institution
- UNR Graduate School prescribed minimum undergraduate average GPA of 2.75 or, an average undergraduate GPA of 2.75 in the last 60 credits of study
- English language proficiency
- A one-page Personal Statement
- Two letters of Recommendation
- Curriculum vitae or Resume
- Prerequisite courses:
  - Undergraduate course in Statistics
  - Introduction to Information Systems (which includes MS Office and Excel) course

13. Bootcamp requirement

The required skills Bootcamp is located within the Student Resource Center (SRC). Students should view the MSBA Program Director's Bootcamp Welcome Video once they gain access to the SRC. The Bootcamp is monitored to ensure that students complete the final assessment(s) with a minimum score of 80%, in a timely manner and prior to starting their first course(s) in the MSBA Program.

14. Admissions deadline

The Online MSBA Program admits students for spring, summer, and fall semesters. Applicants are encouraged to submit their application through the online application link as early as possible for the semester in which they wish to begin.

15. Graduate school academic requirements

All graduate students must maintain a cumulative graduate GPA of 3.0. If their GPA drops below 3.0 they are either placed on probation or dismissed. Undergraduate courses will not count towards graduate GPA.

Probation: Students whose cumulative graduate GPA is between 2.99 and 2.31 are put on probation. Students are placed on academic probation for one semester. If they fail to raise their cumulative GPA to 3.0 by the end of one semester, they are dismissed from the graduate program. Thesis, dissertation, S/U graded credits, and transfer credits have NO impact on a student's GPA.

Dismissal: Students whose cumulative graduate GPA is 2.30 or lower are dismissed from graduate standing. Dismissed students are no longer in a graduate program but may take graduate-level courses as a Grad Special. Students wishing to complete their degree must obtain approval to take graduate-level courses, raise their graduate GPA to at least 3.0, and then re-apply to a graduate program. Any courses taken to raise their GPA will be included in the graduate special/ transfer credit limitation (9 credits for master's degrees).

Master's degrees: All course work must be completed within six years preceding the awarding of the degree. Credits transferred into doctoral degree programs from a completed master's degree are exempt from this six-year limit.

MSBA Grade Requirements

To be counted toward the degree, each graduate course must be completed with a grade of C or better. To remain in good standing in the program, students are required to maintain a 3.0, or B, grade point average.

Transfer credits

Transfer credits are those transferred from another institution. Credits completed at UNR in another program do not need to be transferred. Transfer credit is requested by using the Graduate Credit Transfer Evaluation Request form available on the Graduate School website and must be signed by the student, program director, and graduate school director. Transfer credit approvals are rare.

Graduate Courses and Course Load

Only graduate courses (numbered 600 or higher at UNR) are applicable toward the MSBA degree and can include web-based courses. Graduate credit may not be obtained through professional development, extension, or correspondence courses. Transfer graduate credits are permitted—with the approval of the faculty advisor and the graduate program director. Under special circumstances, a student can petition the Graduate School to accept transfer credits. Please contact the MSBA program director, and the Graduate School for further details should graduate transfer credit be sought.

16. MSBA Forms – A non-thesis program of study: Forms required by the graduate school

The Graduate School requires the following forms for all graduate students in a non-thesis program.

- Declaration of Advisor is required for all students by the end of the second semester.
- Program of Study form is required for all students and is due two semesters before graduation.
- Notice of Completion form is due during the student's last semester. The committee must match Program of Study form.

17. Graduation Application

- Graduation Application
  - o Graduate School requires three to eight weeks for review of application; please plan accordingly.

18. Exit Survey

- Exit Survey

19. Leave of Absence

Continuous Enrollment

To maintain in good standing all online graduate students are required to enroll in a minimum of three (3) graduate credits each semester until they graduate.

Leave of Absence

Students in good standing may request a leave of absence by completing a leave of absence form available on the Graduate School website during which time they are not required to maintain continuous registration. The completed form should be sent to the Online Program Director, who will secure the necessary signatures and forward to the Graduate School.

Usually, a leave of absence is approved for one or two semesters. The leave of absence request may be extended by the student filing an additional leave of absence form. Students applying for a leave of absence should not have any incomplete grades, which could be changed to "F" and have a detrimental impact on their cumulative GPA. Requests for leave of absences must be received by the Graduate School no later than the last day of enrollment for the semester the leave is to begin. Students who have not extended their leave of absence will be automatically registered for classes in the semester they plan to return.

Reinstatement

When students have been absent for one semester or more without an approved leave of absence, they may request reinstatement via the [Reinstatement form](#) available on the Graduate School website. This form allows the program the option to recommend students be re-admitted to their graduate program based on their previous admission OR require students to re-apply for admission which would require them to submit a new application for admission and pay the application fee. The Notice of Reinstatement to Graduate Standing must be received by the Graduate School no later than the last day of enrollment for the semester the reinstatement is to begin.

20. International Students

In addition to the academic criteria required by all students for admission to an advanced degree program, international applicants must have one of the following to be admitted into an advanced degree program.

- A Test of English as a Foreign Language (TOEFL) score of at least 550 (paper version), 213 (computer version), or 79 (Internet version)
  - Students who have achieved a TOEFL score of at least 600 (paper version), 250 (computer version), or 100 (internet-based version) are exempt from Intensive English Language Center evaluation.
  - Students with a TOEFL score of 550 but less than 600 (paper version), 213 but less than 250 (computer version), or 79 but less than 100 (internet-based version) must report to the Intensive English Language Center for evaluation and appropriate placement in English language courses.
- The International Language Testing System (IELTS) (academic version only) score of a 6.5
- Duolingo Exam minimum score of 105

International students who have received a baccalaureate or advanced degree from a regionally accredited United States university or college, or, from an accredited college or university from a country in which English is the native language (United Kingdom, Canada, Australia) are exempt from the TOEFL score requirement.

21. Grievances

UNR honors differences and diversity of opinion and will create opportunities for fair and equitable resolution. If there is any student grievance, whether it be regarding a grade, advisor, policy, or another issue, the grievance process should begin with the program director, then the CSE Graduate Director, CSE Chairperson, followed by the Dean of the College.

22. Academic Integrity

Expectations regarding Academic Standards are discussed in the [University Administrative Manual](#).

"Specific to the academic pursuits of students, the University of Nevada, Reno, believes the maintenance of academic standards is a joint responsibility of the students and faculty of the University. Freedom to teach and to learn is dependent upon individual and collective conduct to permit the pursuit and exchange of knowledge and opinion. Faculty have the responsibility to create an atmosphere in which students may display their knowledge. This atmosphere includes an orderly testing room and sufficient safeguards to inhibit dishonesty. Students have the responsibility to rely on their knowledge and resources in the evaluation process. The trust developed in the maintenance of academic standards is necessary to the fair evaluation of all students.

"Academic Dishonesty: A student may receive academic and disciplinary sanctions for cheating, plagiarism or other attempts to obtain or earn grades under false pretenses.

"*Plagiarism:* defined as (1) the appropriation of another person's ideas, processes, results or words without giving appropriate credit; (2) the submission of ideas, processes, results or words not originating with the author and developed specifically for the work at hand without the appropriate credit being given; or (3) assisting in the act of plagiarism by allowing one's work to be used as described above. Any ideas, processes, results, or words not originating with the author and developed specifically for the work at hand should be credited appropriately.

"*Cheating:* For purposes of this policy, cheating is defined as: (1) obtaining or providing unauthorized information while executing, completing or in relation to coursework, through verbal, visual or unauthorized use of books, notes, text and other materials; (2) turning in the same work in more than one class (or when repeating a class), unless permission is received in advance from the instructor; (3) taking an examination for another student, or arranging for another person to take an exam in one's place; (4) altering or changing test answers after submittal for grading; (5) altering or changing grades after grades have been awarded; (6) altering or changing other academic records once these are official; and/or (7) facilitating or permitting any of the above-listed items.

"For purposes of this definition of cheating, the term 'unauthorized' is defined as not obtaining direct or explicit approval of the course instructor. For purposes of this definition of cheating, the term 'coursework' is defined as an examination, laboratory experience or report, papers, homework or quizzes or any other class assignment or class activity."

According to University policy, a graduate student who violates this policy may not withdraw from the course in question and may not utilize "grade replacement or grade appeals policies" for that course. Sanctions may include filing a final grade of "F"; reducing the student's final course grade one or two full grade points; awarding a failing mark on the coursework; or requiring the student to retake or resubmit the coursework. The faculty member may also drop the student from the class, upon approval by the Dean.

The University has formal proceedings for charging a student with plagiarism, and the student's response and appeal to a charge. These may be found in the University Administrative Manual.

23. Grade Appeals

The UNR Grade Appeal Policy and Procedures may be found in the Administrative Manual. According to the policy, "a grade assigned by an instructor is only subject to the appeals procedure if (1) there was an administrative error in the calculation and/or assignment of the grade; (2) the grade assignment was based on factors other than the student's performance in the course and/or completion of course requirements; or (3)

the grade assignment meant that the student was held to more demanding standards than other students in the same section of the course."

The steps to be followed are detailed in Grade Appeal Policy and Procedures. Student should first consult with the instructor before starting the appeal process.

24. Graduate Student Association and Government

The Graduate Student Association (GSA) represents all graduate students and promotes the welfare and interests of the graduate students at the University of Nevada, Reno. The GSA works closely with appropriate university administrative offices, including the Graduate School and Student Services and reports to the President of the University. The GSA government functions through the Council of Representatives, Executive Council and established committees.

25. Commencement

Commencement exercises are held each December and May. Commencement is a combined graduate/undergraduate ceremony.

26. Forms and Links

View an up-to-date list of forms and requirements.

- Graduate School catalog
- Leave of absence form
- Reinstatement form
- MyNevada
- NetID and password set up
- WebCampus
- Information on the WolfCard student ID
- Graduate School Deadlines
- Graduate Credit Transfer Evaluation Request form
- Grade Appeals
- Graduate Student Association
- General financial aid information

Note: This Program Handbook is subject to amendment.