

# BUSINESS ANALYTICS

## Description

There is a national growing demand for business analytics. This major will give students a greater depth in the ability to discover and manipulate data. It will also enhance a student's ability to interpret and create useful information for business decisions.

## COLLEGE REQUIREMENTS

### College Admission

The entrance requirements for the College of Business (CoB) are the same as the University of Nebraska–Lincoln General Admission Requirements.

### Honors Program

#### Nebraska Business Honors Academy

The Nebraska Business Honors Academy is a unique cohort-based program for high-ability students with demonstrated leadership potential. The goal of the Academy is to develop critical thinking, problem-solving, and communication skills to prepare graduates to be strategic decision-makers and innovators. The Academy combines a rigorous curriculum (including approximately 40 credit hours of cohort-based courses) with leadership training, co-curricular activities, and corporate involvement. Nebraska Business Honors Academy requirements differ from those listed in the catalog. Students work closely with the Academy's advisors on appropriate sequencing and enrollment in Academy-specific requirements.

### Jeffrey S. Raikes School of Computer Science and Management

The purpose of the Jeffrey S. Raikes School of Computer Science and Management is to produce unique graduates who combine business knowledge and computing fundamentals for enterprise information and software systems. Graduates will be professionals who understand the multiple levels of new information systems and who become the technology sector's innovators, product developers, entrepreneurs, chief information officers, and CEOs. Students interested in learning more about the Jeffrey S. Raikes School of Computer Science and Management program and curriculum requirements (which may differ from those listed here) are encouraged to call 402-472-6000 or visit the Jeffrey S. Raikes program website (<https://raikes.unl.edu/>). Students may also reference the Jeffrey S. Raikes School of Computer Science and Management catalog section under Other Academic Units.

## College Degree Requirements

### Overview of College Degree Requirements

The curriculum requirements for the College consist of coursework in four areas. All coursework (except electives and where otherwise noted) must be taken for a grade.

#### 1. Non-Business Requirements

- Consist primarily of College and University ACE (Achievement-Centered Education) coursework

#### 2. Business Core

- Purposeful Strategist (includes ACE 6, 8, 10)
- Data Driven Decision Maker
- Effective Communicator (includes ACE 1 and 2)
- Empowered Professional

#### 3. Business Major

#### 4. Electives

### Non-Business Requirements

(remaining ACE requirements not included in the Business Core and Business Major requirements)

Five Courses (normally 15-17 hours)

All students in the College of Business will take the following non-business courses (unless otherwise noted).

- The college requires a calculus course from the below options to complete the ACE 3 requirement.
- Most students will take coursework to fulfill these requirements during the freshman/sophomore year. However, if hours are still needed during the junior/senior year, there may also be options to 'double count' coursework for ACE 4 and/or ACE 9 toward the major or a minor. This is likely to be of most benefit to 'transfer-in students' due to the nature of the program and when ACE requirements are traditionally taken.

All ACE coursework must be taken for a grade.

### ACE 3: Mathematical, Computational, Statistical or Formal Reasoning Skills

Choose *ONE* of the following:

MATH 104 Applied Calculus

MATH 106 Calculus I

Any advanced calculus course above the 106 level

Notes regarding the selection of coursework for ACE 3:

- **Credit cannot be given for both MATH 104 and MATH 106.** Students must determine the appropriate course early in their program.
- A first-semester student's score on the Math Placement Exam will determine eligibility for MATH 104 or MATH 106. The student should select between these classes based on the following sets of circumstances:
  - Actuarial science majors **MUST** take MATH 106 (or a higher-level calculus). They will later take MATH 107 Calculus II and MATH 208 Calculus III.
  - Raikes students **MUST** take MATH 106 and MATH 107 (or a higher-level calculus).
  - MATH 106 (or higher calculus) is **strongly encouraged** for those students majoring in accounting, majoring in finance, majoring in economics, or considering graduate school.

### Math Placement Exam (MPE)

Students admitted to the College of Business are required to take a Math Placement Exam prior to enrolling in the college math requirement of MATH 104 or MATH 106 (or higher math). The results will determine where a student starts.

- Preparatory courses should be taken as soon as possible to avoid future sequencing problems.
- Additional information about the exam can be found on the Math Placement website (<http://www.math.unl.edu/resources/undergraduate/mpe/>).

Whether required to enroll in preparation coursework first, as indicated on the MPE (MATH 100A Intermediate Algebra, MATH 101 College Algebra and/or MATH 103 College Algebra and Trigonometry), or in one of the required courses, it is critical to begin math the first semester on campus.

#### **ACE 4: The Study of Scientific Methods and Knowledge of the Natural and Physical World**

Choose one course from ACE 4 Certified Courses. (Course credit will vary between 3-5 credit hours.)

#### **ACE 5: Study of Humanities**

Choose one course from ACE 5 Certified Courses.

#### **ACE 7: Study of the Arts to Understand Their Context**

Choose one course from ACE 7 Certified Courses.

#### **ACE 9: Global Awareness or Knowledge of Human Diversity Through Analysis of an Issue**

Choose one course from ACE 9 Certified Courses.

In any of the above instances where double counting is an option, only 3 hours of credit are awarded; students will still need to meet the 120 hours for graduation.

### **Business Core – Four Sections (approximately 53 hours for most majors)**

- Purposeful Strategist – 33 hours
- Data Driven Decision Maker – 7 hours (17 hours for Actuarial Science)
- Effective Communicator – 9 hours (7 hours for Actuarial Science)
- Empowered Professional – 3-4 hours

The Business Core is designed to expose students to the various business disciplines. The Business Major courses are those courses identified for each of the individual majors. All coursework for the Business Core (except where noted differently) must be taken for a grade. All students in the College of Business will take the Business Core (unless otherwise noted).

#### **Purposeful Strategist - 33 hours**

- MNGT 101 Introduction to Business
- ACCT 201 Introductory Financial Accounting
- ACCT 202 Introductory Managerial Accounting
- ECON 211 Principles of Macroeconomics (ACE 6)
- ECON 212 Principles of Microeconomics (ACE 6)
- BLAW 371 Legal Environment (ACE 8)
- FINA 361 Finance
  - Actuarial Science majors take FINA 461.
- MNGT 301 Introduction to Management
- MRKT 341 Marketing
- SCMA 331 Operations and Supply Chain Management
- MNGT 475 Business Strategies (ACE 10)
  - A capstone course integrating business concepts covered throughout the program.
  - Actuarial science majors may take FINA 461 concurrently with MNGT 475.
  - Must be taken at the University of Nebraska-Lincoln and taken for a grade.

#### **Data Driven Decision Maker**

- BSAD 50 Business Computer Applications
  - Required basic-skills computer course that uses Microsoft Access, Word, PowerPoint, and Excel.
- SCMA 250 Spreadsheet Analytics
  - Actuarial science majors take ACTS 250 Actuarial Technical Skills.
- ECON 215 Statistics (ACE 3)
  - Must take ECON 215 (not STAT 218 Introduction to Statistics nor EDPS 459 Statistical Methods nor CRIM 300 Applied Statistics and Data Processing in the Public Sector nor SOCI 206 Introduction to Social Statistics).
  - Actuarial science majors **MUST** take ACTS 445 Introduction to Actuarial Models instead of ECON 215; (actuarial science majors will also take STAT 462 Introduction to Mathematical Statistics I: Distribution Theory and STAT 463 Introduction to Mathematical Statistics II: Statistical Inference).
  - Economics majors or minors can take STAT 380 instead of ECON 215.
- SCMA 350 Business Analytics/Information Analysis
  - Marketing and agribusiness majors may choose to take MRKT 350.
  - Actuarial science majors will take SCMA 451 Introduction to Predictive Analytics.

#### **Effective Communicator**

- BSAD 220 Business Writing (ACE 1)
- MRKT 257 Sales Communication (ACE 2)
  - Or, COMM 286 Business and Professional Communication (ACE 2)
- BSAD 261 Applied Improv for the Successful Business Leader
- BSAD 340 Navigating Emerging Technologies in Business
  - ACTS 475 meets the knowledge requirement for BSAD 340 for Actuarial Science majors; BSAD 340 is waived for Actuarial Science majors.

#### **Empowered Professional (PrEP) (3-4 hours)**

Designed to develop confident and professional business students positioned for lifelong career success, the Professional Enhancement Program (PrEP) consists of four required 1-hour courses.

- BSAD 111 PrEP I, Investing in Strengths or BSAD 111S PrEP I, Investing in Strengths for Transfer Students
- BSAD 222 PrEP II, Career Development and Planning
- BSAD 333 PrEP III, Internship and Job Search Strategies
- BSAD 444 PrEP IV, Professional and Life Skills
  - Taken the semester of graduation.

#### **Business Major – (21-31 hours)**

- Coursework for the major requires completion of specific, required courses of the department (see individual major page), along with other guidelines.
- Business majors and minors cannot double count with Business Core (for example, MNGT 301 and MNGT 475 do not count towards the management majors).

- Business students cannot earn a major and a minor in the same area (for example, an Economics major cannot get an Economics minor; an International Business major cannot earn a Global Leadership minor). Similarly, International Business majors cannot earn a major or minor in the same option or subplan as their International Business major. (For example, an International Business-Finance major cannot earn a major or minor in Finance but could earn a major or minor in any other business area.)
- Business Administration majors cannot double count courses with any College of Business major or minor.
- Careful and advanced planning is necessary, as some courses for the major may not necessarily be available every semester, and classes for the major are limited in the summer sessions.
- ALL coursework for the major must be taken for a grade (students may not take classes Pass/No Pass).
- Sequencing of classes is critical; plan the major courses well in advance of enrollment. Visit with an academic advisor for assistance in planning critical class sequencing.
- A maximum of 3 hours of coursework may transfer if the 18-hour limitation has not been exceeded. Further restrictions may apply.

## Electives – Hours vary to meet 120 hour minimum to graduate

Electives round out the rest of the 120 hour curriculum. Students have the option to choose courses toward a second major, a dual degree, a minor (or two); or students can simply select courses of personal interest.

- Some hours may need to be additional business coursework (to meet the requirement that 60 hours of coursework be in business). This requirement will vary by major.
- In a 21-hour Business Major, students will average 28 hours of elective credit; second major options and/or minors may be appropriate to consider for elective hours.

## Other Requirements

### Business Course/Business Elective Hours

At a minimum, 60 hours of business courses are required for the BSBA degree.

The required hours WILL VARY BY MAJOR, dependent on how requirements have been accepted and/or completed throughout the previous components of the program. While **GENERAL MINIMUM** guidelines by major are noted below, the Degree Audit will specify *minimum business* credit hour expectations for each student. Students will generally see this addressed under the ELECTIVE section (BUSINESS ELECTIVES) on the Degree Audit.

- Economics, marketing, and management (Entrepreneurship, General, and Leadership options) majors – 3 hours of business electives.
- Accounting, business administration, and management (Human Resources and Clifton Builders options) majors – no additional business coursework, as the major consists of 24 hours of business coursework.
- Actuarial science majors – no additional business coursework, as the major consists of more than 24 hours of business coursework.
- Finance majors – no additional business coursework, as the major consists of 24-27 hours of business coursework.

- Supply chain management and business analytics majors – no additional business coursework, as the major consists of 27 hours of business coursework.
- Agribusiness, Business & Law, and Raikes majors – no additional business coursework required due to intent of major as being 'business-related' coursework.
- Additional hours may be required if there is a variation in hours for Non-Business Requirement, Business Core, Business Major, or if there is a violation of transfer limits, etc.

## Experiential Learning Requirement

All undergraduates in the College of Business must complete an Experiential Learning designated course or experience (which may include 0-credit courses designated to document co-curricular activities recognized as experiential learning).

## Grade Rules C- and D Grades

While students may earn grades of C- or D, there are restrictions and recommendations for such grades and further enrollment options:

- A grade of C or higher is expected in prerequisite courses to enroll in ACCT courses.
- A grade of C or higher is required in FINA 361 in order to take most upper-level FINA courses.
- A grade of C or higher is required in other departmental higher-level sequencing courses (i.e., MATH 101 to take MATH 104, etc.). See course descriptions to determine enrollment restrictions.
- Grades of C- or lower may be replaced in the calculation of GPA by retaking the course at the University of Nebraska–Lincoln or within the University system (UNK, UNO).
- Grades of C or better are required to transfer courses from outside of the University of Nebraska system.
- Academic bankruptcy options may be considered for students who have one or two semesters of poor performance.

## Pass/No Pass

Several restrictions apply when considering the Pass/No Pass option:

- BSAD 111, BSAD 222, BSAD 333, BSAD 444, and BSAD 50 are offered only as Pass/No Pass. All are required.
- Students may apply no more than 6 hours of elective credit using the Pass/No Pass option (excludes ACCT 395A, BSAD 111, BSAD 222, BSAD 333, BSAD 444, BSAD 395 (and cross-listings), MRKT 395).
- **No** student enrolled in **any** college at the University of Nebraska–Lincoln may take business courses in the College of Business using the Pass/No Pass option.
- College of Business students may **NOT** take coursework to satisfy ACE requirements, nor any required business coursework, including in the major and minor, using the Pass/No Pass option.
- Students majoring in actuarial science through the College of Business may **NOT** take any math, actuarial science, or required courses using the Pass/No Pass option.
- Students taking courses to fulfill the requirements of a minor in an area of study outside the College of Business are subject to College rules restricting use of the Pass/No Pass option

if courses in the minor are used to meet ACE or any college-specific requirements.

- Students seeking any minor outside the College should verify rules applying to minimum grade expectations and Pass/No Pass options with the advisor for their minor, as additional restrictions may apply and often vary.
- Students from UNO/UNK/UNMC and from other institutions are subject to the same restrictions listed here for University of Nebraska–Lincoln students.

**Exceptions to the above rules are limited to the following and no other exceptions will be made.**

- An independent study or an internship course (391, 395, 396) may be taken in the College of Business using the Pass/No Pass option with the permission of the instructor and the department chair, but College of Business students who qualify for this exception may use the independent study or an internship course (391, 395, 396) **only** as elective credit.
- ACCT 395A, BSAD 395 (and cross-listings) and MRKT 395 taken in the Pass/No Pass format will not count against the six hour Pass/No Pass maximum in open electives.
- Advanced Placement grades of Pass and Credit By Exam grades of Pass will be accepted to fulfill degree requirements. These hours will not count against the 6-hour-maximum hours permitted.
- Students who travel abroad and return with “credit” rather than grades from the institution where they studied may use Pass grades to fulfill degree requirements. These hours will not count against the 6-hour maximum number of hours permitted.

## Transfer Credit Rules

For detailed information on transfer credit rules, see Transfer Credit Restrictions (<https://catalog.unl.edu/undergraduate/business/>) under Course Exclusions and Restrictions (<https://catalog.unl.edu/undergraduate/business/>).

## Residency

At least 30 of the last 36 hours of credit must be registered for and completed in residence at the University of Nebraska–Lincoln.

Students electing to study abroad during part of this time are exempted for the hours earned abroad, but no additional hours may be transferred in the last 36 hours. This exemption requires filing a written appeal in the Business Advising and Student Engagement Office (Hawks Hall 125).

## ACE Requirements

All students must fulfill the Achievement-Centered Education (ACE) requirements. Information about the ACE program may be viewed at the Achievement-Centered Education website (<https://ace.unl.edu/>). MyRED may also be used to search for currently offered ACE classes.

### ACE Achievement-Centered Education—Ten Courses (normally 30 hours)

This is the university’s innovative, outcomes-focused general education component designed to enhance the undergraduate experience by providing broad exposure to multiple disciplines, complementing the major, and helping students develop important reasoning, inquiry, and civic capacities.

Important rules to remember when selecting coursework to meet this requirement:

- There are 10 ACE Student Learning Outcomes (SLOs). At least one course, equivalent to 3 credit hours, must be taken for each of the 10 SLOs.
- Up to three ACE SLOs from ACE 4–10 may be satisfied by work in one subject area.
- ACE SLOs must be satisfied by work in at least three subject areas.
- No ACE course may satisfy more than one ACE SLO in a student’s program.
- If an ACE course addresses two ACE SLOs, the student decides which one of the two outcomes the course will satisfy in that student’s program. (The Degree Audit will make an automatic decision based on first course taken, first SLO needed.)
- As part of the College requirements of non-business and business courses, many courses will also work for ACE. Students should carefully review required coursework with ACE options to make the best use of courses to fulfill both degree requirements as well as University of Nebraska–Lincoln ACE requirements.

## Catalog Rule

Students (including transfer students) must follow the Undergraduate Catalog in effect when they are admitted into the College of Business. Students who leave the College and return, or those applying for ‘readmission’ to the College, are subject to requirements in place at the time of their readmission to the College.

Students who have transferred from a community college may be eligible to fulfill the requirements as stated in the catalog for an academic year in which they were enrolled at the community college prior to attending the University of Nebraska–Lincoln. The College will determine eligibility in consultation with academic advisors, provided the student a) was enrolled in a community college during the catalog year they are utilizing, b) maintained continuous enrollment at the previous institution for 1 academic year or more, and c) continued enrollment at the University of Nebraska–Lincoln within 1 calendar year from their last term at the previous institution. Students must complete all degree requirements from a single catalog year and within the timeframe allowable for that catalog year.

## Learning Outcomes

1. Understand the variety of quantitative methods used in business analytics and the types of business problems for which each method is most appropriate.
2. Learn software tools and systems that are relevant for data analysis and decision-making in a business context.
3. Understand the importance of data, information, and quantitative models in supporting business decision making.
4. Develop the ability to effectively communicate about data and quantitative analysis, with an emphasis on providing insights and recommendations that support business decision-making.

## Major Requirements

In addition to the College Degree Requirements, students will complete 27 hours of coursework for the Business Major.



All students, regardless of their major or interests in the College, will take SCMA 250 (https://catalog.unl.edu/search/?P=SCMA%20250) Spreadsheet Analytics, SCMA 331 (https://catalog.unl.edu/search/?P=SCMA%20331) Operations and Supply Chain Management, and SCMA 350 (https://catalog.unl.edu/search/?P=SCMA%20350) Business Analytics/Information Analysis as part of the Business Core requirements.

NONE of these courses may be used to count toward the Business Major.

Business analytics majors are expected to enroll in SCMA 454 Business Analytics Applications in Practice in the fall/spring semester prior to graduation. Supply chain management and business analytics double majors will only take one of SCMA 454 or SCMA 474 (students must take one but may not take both, see advisor to discuss). The Department allows business analytics majors to double count with all other business majors except for business administration.

**Business Analytics Core Requirements**

SCMA 335	Decision Making Models	3
SCMA 437	Risk and Decision Analysis	3
SCMA 450	Communication for Business Analytics	3
SCMA 451	Introduction to Predictive Analytics	3
SCMA 452	Database Organization and Management	3
SCMA 453	Machine Learning Applications for Business Analytics	3
SCMA 454	Business Analytics Applications in Practice	3
Credit Hours Subtotal:		21

**Directed Major Electives**

Select two courses from the following:		6
ACCT 308	Intermediate Managerial Accounting	
ACCT 309	Accounting Systems and Analytics	
ACTS 430	Actuarial Applications of Applied Statistics	
ACTS 431	Actuarial Applications of Time Series and Machine Learning	
ECON 315	Economic Data Visualization and Analysis	
ECON 417	Introductory Econometrics	
FINA 401	Quantitative Financial Analysis	
MNGT 430	Human Resource Analytics	
MRKT 345	Market Research	
MRKT 350	Marketing Analytics	
SCMA 436	Project Management	
Credit Hours Subtotal:		6

**Total Credit Hours** 27

**Grade Rules**

**C- and D Grades**

A grade of D- or above is required for all courses in the major. Grades of C or better are required in transfer courses from outside of the University of Nebraska system.

**Pass/No Pass**

As noted in the College Degree Requirements section, all coursework for the major must be taken for a grade.

**Requirements for Minor Offered by Department**

The business analytics minor is available to College of Business students only. No more than one course/requirement may be transferred into the minor. Coursework used for this minor cannot double count with the Business Core or the Business Administration major.

The twelve (12) hour minor includes:

**Required**

SCMA 335	Decision Making Models	3
SCMA 451	Introduction to Predictive Analytics	3
SCMA 452	Database Organization and Management	3
Credit Hours Subtotal:		9

**Directed Electives**

Select one of the following:		3
ACCT 308	Intermediate Managerial Accounting	
ACCT 309	Accounting Systems and Analytics	
ECON 417	Introductory Econometrics	
MRKT 345	Market Research	
MRKT 355	Marketing Metrics	
SCMA 437	Risk and Decision Analysis	
SCMA 450	Communication for Business Analytics	
SCMA 453	Machine Learning Applications for Business Analytics	
Credit Hours Subtotal:		3

**Total Credit Hours** 12

**Grade Rules**

**C- and D Grades**

A grade of D- or above is required for all courses in the minor. Grades of C or better are required in transfer courses from outside of the University of Nebraska system. Course prerequisites still apply.

**Pass/No Pass**

No course may be taken pass/no pass.