

# Business Administration (BS): Business Analytics Concentration

Introducing the newest concentration at Poole College of Management: Business Analytics. In this dynamic field, students explore cutting-edge techniques to harness data for business success. From traditional statistics to advanced artificial intelligence (AI) methods, you will learn to collect, analyze and present data effectively to inform business decisions. Choosing the business analytics concentration will help you tap into the surging demand for career-ready graduates in corporate environments.

## Why Business Analytics at NC State?

Poole College of Management stands out for its business analytics education and research excellence, consistently earning top rankings from U.S. News & World Report most recently as No. 1 in NC, No. 10 among U.S. public universities, and No. 22 among all national universities for undergraduate business analytics program. Developed by industry experts for maximum industry impact, our curriculum equips students with the skills, background and practical knowledge required to add value to the workforce from day one. Building upon this foundation of excellence, we've launched the Business Analytics Initiative, propelling the college even further as a hub for data analysis in business through education, research and thought leadership.

## Contact

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Website (<https://poole.ncsu.edu/faculty-and-research/it-analytics-operations-department/>)

Sebastian Heese  
Department Head  
Owens Distinguished Professor of Supply Chain Management

## Plan Requirements

Code	Title	Hours
<b>Humanities and Social Sciences</b>		
Acad Writing Research (p. 2)	<sup>1</sup>	4
Select one of the following:		3
COM 110	Public Speaking	
COM 112	Interpersonal Communication	
COM 211	Argumentation and Advocacy	
PSY 200	Introduction to Psychology	3
Select one of the following:	<sup>1</sup>	3
ARE 201	Introduction to Agricultural & Resource Economics	
ARE 201A	Introduction to Agricultural & Resource Economics	
EC 201	Principles of Microeconomics	
EC 202	Principles of Macroeconomics	3
Select one of the following:		3
ENG 331	Communication for Engineering and Technology	

ENG 332	Communication for Business and Management	
ENG 333	Communication for Science and Research	
GEP Humanities ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/</a> )		6
GEP Elective ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/</a> )		3
Select one of the following: (verify requirement)		
MIE 306	Managing Ethics in Organizations	
PHI 214	Issues in Business Ethics	
PHI 221	Contemporary Moral Issues	
PHI 313	Ethical Problems in the Law	
PHI 375	Ethics	
World Language Proficiency ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/world-language-proficiency/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/world-language-proficiency/</a> ) (verify requirement)		
GEP Foundations of American Democracy ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-fad/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-fad/</a> ) (verify requirement)		
<b>Mathematical and Natural Sciences</b>		
GEP Natural Sciences ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-natural-sciences/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-natural-sciences/</a> )		7
Select one of the following:	<sup>1</sup>	3
MA 121	Elements of Calculus	
MA 131	Calculus for Life and Management Sciences A	
MA 141	Calculus I	
MA 114	Introduction to Finite Mathematics with Applications	3
or MA 242	Calculus III	
Select one of the following:	<sup>1</sup>	3
BUS 350	Economics and Business Statistics	
ST 350	Economics and Business Statistics	
ST 312	Introduction to Statistics II	
ST 370	Probability and Statistics for Engineers	
ST 372	Introduction to Statistical Inference and Regression	
BUS 351	Introduction to Business Analytics	3
ST 307	Introduction to Statistical Programming- SAS	1
or ST 308	Introduction to Statistical Programming - R	
<b>Interdisciplinary Perspectives</b>		
GEP Interdisciplinary Perspectives ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/</a> )		2
<b>Physical Education</b>		
GEP Health and Exercise Studies ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/</a> )		2
<b>Corequisites</b>		
GEP Global Knowledge ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/</a> ) (verify requirement)		
<b>Major Requirements</b>		
M 100	Personal and Professional Identity Development	1
MIE 201	Introduction to Business	3
ACC 210	Concepts of Financial Reporting <sup>1</sup>	3
ACC 220	Introduction to Managerial Accounting <sup>1</sup>	3

MIE 310	Entrepreneurial Value Creation	3
BUS 320	Principles of Finance	3
MIE 330	Managing People	3
BUS 340	Information Systems Management	3
BUS 360	Principles of Marketing	3
BUS 370	Operations and Supply Chain Management	3
MIE 305	Legal and Regulatory Environment	3
MIE 480	Business Policy and Strategy	3
<b>Concentration (p. 2)</b>		
Required credit hours (p. 2) <sup>2</sup>		6
Elective credit hours (p. 2) <sup>2</sup>		9
<b>Free Electives</b>		
Free Electives (12 Hr S/U Lmt) <sup>3</sup>		19
<b>Total Hours</b>		<b>120</b>

<sup>1</sup> C- or better<sup>2</sup> See Concentration Requirements below.<sup>3</sup> Students should consult their academic advisors to determine which courses fill this requirement.

## Acad Writing Research

Code	Title	Hours
<b>Acad Writing Research</b>		
ENG 101	Academic Writing and Research	4
WLEN 101	Academic Writing and Research	4
<b>Transfer Sequence</b>		
ENG 1GEP		3
ENG 202	Disciplinary Perspectives in Writing	3

## Concentration Courses

Required Courses: 6 Credits (either Regular or Honors sections)

Code	Title	Hours
BUS 440	Database Management	3
BUS 458	Analytics: From Data to Decisions	3

Electives: Choose 9 credit hours from the list below, including up to 6 credits of DSC classes (see note)

Code	Title	Hours
BUS 428	Advanced Corporate Finance	3
BUS 429	Financial Modeling	3
BUS 459	Business Analytics Practicum	3
BUS 462	Marketing Research	3
BUS 469	Digital Marketing Practicum <sup>1</sup>	3
BUS 470	Operations Modeling and Analysis	3
BUS 476	Decision Modeling and Analysis	3
MIE 437	People Analytics	3
ACC 440	Enterprise Resource Planning Systems: Implementation, Risk, and Analytics	3
ACC 411	Business Valuation	3
ACC 459	Accounting Analytics II: From Data to Decisions	3
DSA 201	Introduction to R/Python for Data Science	1
DSA 202	Introduction to Data Visualization	1

DSA 205	Data Communication	1
DSA 220	Introduction to AI Ethics	1
DSA 225	Data Science for Social Good	1
DSA 235	Introduction to Data Science for Cybersecurity	1
DSA 240	Measuring Success	1
DSA 295	Introductory Special Topics in Data Science <sup>2</sup>	1-3
DSA 405	Data Wrangling and Web Scraping	1
DSA 406	Exploratory Data Analysis for Big Data	1
DSA 410	Data Internship Preparation for Social Impact	1
DSA 412	Exploring Machine Learning	1
DSA 435	Predictive Analytics for Improving Services	1
DSA 440	Introduction to APACHE Spark Using Big Datasets	1
DSA 495	Special Topics in Data Science <sup>2</sup>	1-3
DSA 595	Graduate Special Topics in Data Science <sup>2</sup>	1-3

<sup>1</sup> Course project must be approved by concentration contact for the course to count.<sup>2</sup> DSC 295, 495, and 595 classes require permission from the concentration contact to fulfill this requirement.

## First Year

Fall Semester		Hours
M 100	Personal and Professional Identity Development	1
ENG 101	Academic Writing and Research (or GEP Natural Sciences ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-natural-sciences/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-natural-sciences/</a> ) with Lab) <sup>1</sup>	4
Select one of the following: <sup>1</sup>		3
MA 121	Elements of Calculus	
MA 131	Calculus for Life and Management Sciences A	
MA 141	Calculus I	
MIE 201	Introduction to Business	3
Free Elective		3
GEP Health and Exercise Studies ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/</a> )		1
<b>Hours</b>		<b>15</b>

## Spring Semester

MA 114	Introduction to Finite Mathematics with Applications	3
or MA 242		or Calculus III
Select one of the following:		3
COM 110	Public Speaking	
COM 112	Interpersonal Communication	
COM 211	Argumentation and Advocacy	
GEP Humanities ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/</a> )		
ENG 101	Academic Writing and Research (or GEP Natural Sciences ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-natural-sciences/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-natural-sciences/</a> ) with Lab) <sup>1</sup>	4

EC 201 or ARE 201	Principles of Microeconomics <sup>1</sup> or Introduction to Agricultural & Resource Economics	3
ACC 210	Concepts of Financial Reporting <sup>1</sup>	3
<b>Hours</b>		<b>16</b>

**Second Year**

**Fall Semester**

ACC 220	Introduction to Managerial Accounting <sup>1</sup>	3
BUS 340	Information Systems Management	3
BUS/ST 350	Economics and Business Statistics <sup>1</sup>	3
GEP Natural Sciences ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-natural-sciences/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-natural-sciences/</a> )		3
EC 202	Principles of Macroeconomics	3
GEP Health and Exercise Studies ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/</a> )		1
<b>Hours</b>		<b>16</b>

**Spring Semester**

BUS 351	Introduction to Business Analytics	3
Select two of the following: <sup>1</sup>		6
BUS 320	Principles of Finance	
BUS 360	Principles of Marketing	
BUS 370	Operations and Supply Chain Management	
MIE 305	Legal and Regulatory Environment	
MIE 310	Entrepreneurial Value Creation	
MIE 330	Managing People	
PSY 200	Introduction to Psychology	3
GEP Elective ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/</a> )		3
ST 307 or ST 308	Introduction to Statistical Programming- SAS or Introduction to Statistical Programming - R	1
<b>Hours</b>		<b>16</b>

**Third Year**

**Fall Semester**

Select two of the following: <sup>1</sup>		6
BUS 320	Principles of Finance	
BUS 360	Principles of Marketing	
BUS 370	Operations and Supply Chain Management	
MIE 305	Legal and Regulatory Environment	
MIE 310	Entrepreneurial Value Creation	
MIE 330	Managing People	
Select one of the following:		3
ENG 331	Communication for Engineering and Technology	
ENG 332	Communication for Business and Management	
ENG 333	Communication for Science and Research	
Select one of the following:		
COM 110	Public Speaking	
COM 112	Interpersonal Communication	3
COM 211	Argumentation and Advocacy	

GEP Humanities ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/</a> )		3
BUS 440	Database Management	3
<b>Hours</b>		<b>15</b>

**Spring Semester**

Select two of the following: <sup>1</sup>		6
BUS 320	Principles of Finance	
BUS 360	Principles of Marketing	
BUS 370	Operations and Supply Chain Management	
MIE 305	Legal and Regulatory Environment	
MIE 310	Entrepreneurial Value Creation	
MIE 330	Managing People	
Free Elective		6
BUS 458	Analytics: From Data to Decisions	3
<b>Hours</b>		<b>15</b>

**Fourth Year**

**Fall Semester**

Concentration Electives (p. 2)		6
GEP Interdisciplinary Perspectives ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/</a> )		2
GEP Humanities ( <a href="https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/">https://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/</a> )		3
Free Elective		4
<b>Hours</b>		<b>15</b>

**Spring Semester**

MIE 480	Business Policy and Strategy	3
Concentration Electives (p. 2)		3
Free Electives		6
<b>Hours</b>		<b>12</b>
<b>Total Hours</b>		<b>120</b>

<sup>1</sup> Must be completed with "C-" or better.

Students must also complete as a part of their degree requirements one course from the GEP Foundations of American Democracy list (no credit hour requirement) and one course from the GEP Global Knowledge list (no credit hour requirement).

**GPA Graduation Requirements**

- Overall GPA for all courses attempted at NC State must be 2.0 or higher; and
- Overall GPA for all BUS, MIE, and M courses attempted at NC State must be 2.0 or higher.

**Career Opportunities**

Graduates in business administration are prepared for a variety of careers in business or industry including new product development, marketing, manufacturing, human resources, IT management, business analysis, banking and finance, consulting, and business development. They have the knowledge and tools to launch new business ideas and succeed in management positions.

## Career Titles

- Accounting Clerk
- Actuary
- Administrative Service Manager
- Advertising Account Manager
- Advertising Agency Coordinator
- Advertising Sales Agent
- Airline Flight Control Administrator
- Airline Flight Operations Administrator
- Airline Flight Reservations Administrator
- Airport Administrator
- Artists Agent (Manager)
- Athletes Business Manager
- Bank and Branch Managers
- Benefits Manager
- Biofuels Production Managers
- Boat Charter Administrator
- Budget Accountant
- Budget Analyst
- Business Intelligence Analysts
- Business Professor
- Camp Director
- Catering Administrator
- Certified Public Accountant (CPA)
- Chief Executives
- Chief Financial Officer
- Child Care Center Administrator
- Compensation Administrator
- Compensation Specialist
- Compliance Managers
- Construction Manager
- Contract Administrator
- Controller
- Cost Accountant
- County or City Auditor
- Credit Analyst
- Curriculum and Assessment Director
- Customer Service Supervisor
- Document Management Specialists
- Elementary School Administrator
- Employee Benefits Analyst
- Employment Administrator
- Employment and Placement Specialist
- Estimator
- Event / Convention Planner
- Farm Management Advisor
- Financial Aid Counselor
- Financial Aid Director
- Financial Analyst
- Financial Examiner
- Financial Manager
- Financial Planner
- Financial Services Sales Agent
- Fish Hatchery Manager
- Foreign Exchange Trader
- Fund Raiser
- Fundraising Manager
- Funeral Home Managers
- Gaming Manager
- General and Operations Managers
- Geothermal Production Manager
- Golf Course Manager
- Government Budget Analyst
- Greenhouse and Nursery Manager
- High School Administrator
- Historic Site Administrator
- Hotel Manager
- Human Resources Management Advisor
- Human Resources Management Consultant
- Import/Export Customs Broker
- Industrial Relations Specialist
- Industrial-Organizational Psychologist
- Instructional Coordinators
- Insurance Adjuster
- Insurance Agent
- Insurance Claim Examiner
- Internal Auditor
- Job Analyst
- Job Development Specialist
- Labor Relations Specialist
- Legislator
- Loan Counselor
- Loan Officer
- Lobbyist
- Management Analyst
- Market Research Analyst
- Marketing Managers
- Medical and Health Services Managers
- Medical Records Administrator
- Middle School Administrator
- Non-Retail Sales Supervisor
- Occupational Analyst
- Office Supervisor
- Operations Research Analyst
- Patent Agent
- Personnel Administrator
- Personnel Coordinator
- Personnel Recruiter
- Preschool Administrator
- Production Planner
- Project Management Specialists
- Property Accountant
- Property Managers
- Psychometrist

- Public Relations Manager
- Public Relations Specialist
- Purchasing Agent
- Purchasing Manager
- Radio & TV Station Administrator
- Range Manager
- Recruiter
- Registrar Administrator
- Restaurant Manager
- Retail Buyer
- Retail Sales Department Supervisor
- Retail Store Manager
- Sales Managers
- Sales Representative (Chemicals & Drugs)
- Sales Representative (Hotel Furnishings)
- Sales Representative (Instruments)
- Sales Representative (Psychological Tests)
- Securities Broker
- Social and Community Service Managers
- Social Welfare Administrator
- Spa Managers
- Special Education Administrator
- Sports Events Planner
- Storage and Distribution Manager
- Student Admissions Administrator
- Student Affairs Administrator
- Supply Chain Managers
- Systems Accountant
- Talent Agent
- Tax Accountant
- Tax Auditor
- Tax Examiner
- Tax Lawyer
- Tax Preparer
- Title Examiner
- Traffic Administrator (Freight & Passenger)
- Transportation Supervisor
- Treasurer
- Urban and Regional Planner
- Wind Energy Project Managers

View videos that provide career details and information on wages, employment trends, skills needed, and more for any occupation. Sponsored by the U.S. Department of Labor.

Focus 2 Career Assessment (<https://careers.dasa.ncsu.edu/explore-careers/career-assessments/>) (NC State student email address required)  
This career, major and education planning system is available to current NC State students to learn about how your values, interests, competencies, and personality fit into the NC State majors and your future career. An NC State email address is required to create an account. Make an appointment with your career counselor (<https://careers.dasa.ncsu.edu/about/hours-appointments/>) to discuss the results.

Focus 2 Apply Assessment (<https://www.focus2career.com/Portal/Register.cfm?SID=1929>) (Available to prospective students)  
A career assessment tool designed to support prospective students in exploring and choosing the right major and career path based on your unique personality, interests, skills and values. Get started with Focus 2 Apply and see how it can guide your journey at NC State.

## Learn More About Careers

NCcareers.org (<https://nccareers.org/>)

Explore North Carolina's central online resource for students, parents, educators, job seekers and career counselors looking for high quality job and career information.

Occupational Outlook Handbook (<https://www.bls.gov/ooh/>)

Browse the Occupational Outlook Handbook published by the Bureau of Labor Statistics to view state and area employment and wage statistics. You can also identify and compare similar occupations based on your interests.

Career One Stop Videos (<https://www.careeronestop.org/>)