

## Business Administration, Business Analytics Concentration, BS

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Business Analytics is a quantitative approach to business, driven by the intelligent use of data and mathematical models. Practitioners leverage methods from statistics and operations research to form insights and make decisions that improve business performance. Business analytics is crucial to a broad range of industries. Banks need to perform credit risk analysis and analyze streaming transactions in real time to quickly identify potential fraud. Utility companies need to analyze energy usage data to gain a better understanding of demand patterns. Retailers need to perform markdown optimizations, firm-wide liquidity management, and understand the social sentiment around their products and markets to develop more effective campaigns and promotions. Business Analytics, offered by the [Department of Marketing and Business Analytics](#), helps such organizations uncover insights from big data, build models that relate actions to consequences, and perform optimization and simulation analyses that lead to quality decisions and better outcomes in shorter times. The job opportunities for graduates with data analytical skills have never been more numerous. The business analytics concentration is designed to cater to this need by equipping our undergraduates with the skills needed to crunch huge data sets into meaningful information to further facilitate smart business decision-making.

- [Program Learning Outcomes](#)

### Summary of Degree Units

|                                    |            |
|------------------------------------|------------|
| University Graduation Requirements | 38         |
| Major Preparation                  | 15         |
| Major Core Requirements            | 43         |
| Concentration Requirements         | 21         |
| University Electives               | 3          |
| <b>Total</b>                       | <b>120</b> |

### Program Roadmaps

The 4-Year [Roadmap](#) is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). [Associate Degrees \(ADT\) Pathways](#) are also available online.

### Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Business Analytics must be completed with a grade of “C- or better”. The following Preparation for the Major and Required for the Major courses must be completed with a grade of “C or better”: [ENGL 2](#), [MATH 70](#), [BUS1 20](#), [BUS2 90](#).

## University Requirements

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Students must satisfy all of the major and [Undergraduate University Graduation Requirements](#), which includes unit, GPA, and residency requirements as well as the below identified [General Education](#), American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see [Course Abbreviations](#)).

### Core Lower Division General Education (27 units)

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Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a “C-” or better to meet the requirement. Consult with a major advisor for details.

**Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed**

**all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.**

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## Upper Division General Education (3 units)

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Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

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### American Institutions (6 units)

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Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the [American Institutions Requirement](#) with other courses, but these may not satisfy other GE areas.

The American Studies sequence ([AMS 1A/AMS 1B](#); 12 units) or Humanities Honors course ([HUM 2B](#); 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

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### African American Studies (6 units)

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- [AFAM 2A - African Americans and the Development of America's History and Government 3 unit\(s\) \(D\)](#)
- [AFAM 2B - African Americans and the Development of America's History and Government 3 unit\(s\) \(D+US123\)](#)

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### Asian American Studies (6 units)

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- [AAS 33A - Asian Americans in U.S. History I 3 unit\(s\) \(D\)](#)
- [AAS 33B - Asian Americans in U.S. History II 3 unit\(s\) \(D+US123\)](#)

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### Chicana and Chicano Studies (6 units)

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- [CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 unit\(s\) \(D\)](#)
- [CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 unit\(s\) \(D+US123\)](#)

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### U.S. History and Government (6 units)

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#### Complete One US1: US History Course

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- [AMS 10 - Stories that Make America 3 unit\(s\) \(C2+US1\)](#)
- [HIST 15 - Essentials of U.S. History 3 unit\(s\) \(D+US1\)](#)
- [HIST 170S - Topics in American History: American Identities and Institutions 3 unit\(s\) \(S+US1\)](#)

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#### Complete One US23: US Constitution and California Government Course

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- [AMS 11 - Visions of Democracy 3 unit\(s\) \(D+US23\)](#)
- [POLS 15 - Essentials of U.S. & California Government 3 unit\(s\) \(D+US23\)](#)
- [POLS 16 - Power and Ideas in American Politics 3 unit\(s\) \(C2+US23\)](#)
- [POLS 170V - American Politics in Global Perspective 3 unit\(s\) \(V+US23\)](#)

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### Physical Education (2 units)

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All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a [diverse selection of activity courses](#).

## Graduation Writing Assessment Requirement

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At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

### Major Preparation (15 units)

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- ECON 1A - Principles of Economics: Macroeconomics 3 unit(s)
- ECON 1B - Principles of Economics: Microeconomics 3 unit(s) (D)
- ENGL 2 - Critical Thinking and Writing 3 unit(s) (A3) (or equivalent)
- MATH 70 - Mathematics for Business 3 unit(s) (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 3L, 31X, 32, 32X, 70X, 71, or 71X.)

### Writing in the Disciplines (3 units)

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- COMM 100W - Writing Workshop: Writing for Influence 3 unit(s) (WID)
- ENGL 100WB - Written Communication: Business 3 unit(s) (WID)
- LLD 100WB - Writing Workshop for Business Students 3 unit(s) (WID)

### Major Requirements (64 units)

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#### Core Courses (43 units)

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##### Lower Division Courses (13 units)

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- BUS1 20 - Financial Accounting 3 unit(s)
- BUS1 21 - Managerial Accounting 3 unit(s)
- BUS3 80 - Legal Environment of Business 3 unit(s)
- BUS2 90 - Business Statistics 3 unit(s) (Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.)
- BUS4 91L - Computer Tools for Business 1 unit(s)

##### Business Fundamentals (15 units)

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- BUS2 130 - Introduction to Marketing 3 unit(s)
- BUS5 140 - Fundamentals of Operations Management 3 unit(s)
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 unit(s)
- BUS1 170 - Fundamentals of Finance 3 unit(s)
- BUS2 190 - Quantitative Business Analysis 3 unit(s)

##### Business Integration and Perspective Courses (15 units)

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- BUS5 187 - Global Dimensions of Business 3 unit(s)
- BUS4 188 - Business Systems and Policy 3 unit(s)
- BUS3 189 - Strategic Management 3 unit(s)
- PHIL 186 - Professional and Business Ethics 3 unit(s) (S)
- One non-business global perspectives course in Area V 3 unit(s)

### Concentration Requirements (21 units)

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Additionally, to qualify for a baccalaureate degree in Business Administration with concentration in Business Analytics, all courses in the concentration must be completed with a grade of "C-" or better. A cumulative 2.0 GPA is required in all business classes.

### **Required Courses (12 units)**

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- [BUS2 193 - Data Mining](#) *3 unit(s)*
- [BUS2 194A - Statistical Analysis](#) *3 unit(s)*
- [BUS2 194B - Business Analytics](#) *3 unit(s)*
- [BUS2 195B - Data Visualization and Exploration](#) *3 unit(s)*

### **Additional Courses (9 units)**

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Complete three courses from:

- [BUS2 132B - Supply Chain Analytics](#) *3 unit(s)*
- [BUS2 137H - Marketing and Business Analytics Honors Practicum](#) *3 unit(s)*
- [BUS2 195A - Spreadsheet Modeling](#) *3 unit(s)*
- [BUS2 195C - Simulation Modeling and Analysis](#) *3 unit(s)*
- [BUS4 116 - Advanced Database Management Systems](#) *3 unit(s)*
- [BUS4 118D - Big Data](#) *3 unit(s)*

### **University Electives (3 units)**

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### **Total Units Required (120 units)**

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**Business Administration, Business Analytics Concentration, BS  
(2023-2024)**

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The following roadmap is a sample advising map to complete the degree program in four years. Please consult your [MyPlanner](#) and [major advisor](#) as you develop your individualized academic plan. Students must have completed 60+ units in order to enroll in SJSU Studies courses.

[Year 1](#) | [Year 2](#) | [Year 3](#) | [Year 4](#)

**Year 1**

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**Fall Semester (15 units)**

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- [ECON 1B - Principles of Economics: Microeconomics](#) 3 unit(s) (D) <sup>1</sup>
- [ENGL 1A - First Year Writing](#) 3 unit(s) (A2)
- [GE Area A1](#) 3 unit(s)
- [GE Area C1](#) 3 unit(s)
- University Elective (Recommended [BUS5\\_16](#)) 3 unit(s) <sup>8</sup>

**Spring Semester (15 units)**

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- [ECON 1A - Principles of Economics: Macroeconomics](#) 3 unit(s) <sup>1</sup>
- [ENGL 2 - Critical Thinking and Writing](#) 3 unit(s) (A3) <sup>2</sup>
- [MATH 70 - Mathematics for Business](#) **OR** [MATH 70X - Mathematics for Business](#) 3 unit(s) (B4) <sup>2</sup>  
Note: MATH 70X requires enrollment in [MATH 70W](#).
- [GE Area C2](#) 3 unit(s)
- [BUS3 12 - Managing My life](#) 3 unit(s) (E)

**Year 2**

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**Fall Semester (17 units)**

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- [BUS3 80 - Legal Environment of Business](#) 3 unit(s)
- [BUS1 20 - Financial Accounting](#) 3 unit(s) <sup>4</sup>
- [GE Area D + US123](#) 3 unit(s) <sup>3</sup>
- [GE Area B1+B3](#) 3 unit(s) \*
- [BUS4 91L - Computer Tools for Business](#) 1 unit(s)
- Physical Education 1 unit(s)
- [GE Area F](#) 3 unit(s)
- Complete the [Upper Division Writing - Directed Self Placement](#)

**Spring Semester (16 units)**

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- [BUS2 90 - Business Statistics](#) 3 unit(s) <sup>4</sup>

- BUS1 21 - Managerial Accounting 3 unit(s)
- GE Area D + US123 3 unit(s)<sup>3</sup>
- GE Area B2+B3 3 unit(s)\*
- GE Area C1 or C2 3 unit(s)
- Physical Education 1 unit(s)

*Note: Complete 60 units to reach Upper Division Standing.*

## Year 3

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### Fall Semester (15 units)

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- BUS2 194A - Statistical Analysis 3 unit(s)<sup>5</sup>
- BUS2 190 - Quantitative Business Analysis 3 unit(s)
- BUS2 130 - Introduction to Marketing 3 unit(s)
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 unit(s)
- COMM 100W - Writing Workshop: Writing for Influence, ENGL 100WB - Written Communication: Business, OR LLD 100WB - Writing Workshop for Business Students 3 unit(s) (WID)<sup>6</sup>

### Spring Semester (15 units)

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- BUS2 194B - Business Analytics 3 unit(s)<sup>5</sup>
- BUS2 195B - Data Visualization and Exploration 3 unit(s)<sup>5</sup>
- BUS5 140 - Fundamentals of Operations Management 3 unit(s)
- BUS5 187 - Global Dimensions of Business 3 unit(s)
- BUS3 186/PHIL 186 - Professional and Business Ethics 3 unit(s) (S)<sup>7</sup>

*Note: BUS3/PHIL 186 is a major requirement.*

- Apply to Graduate

## Year 4

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### Fall Semester (15 units)

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- BUS2 193 - Data Mining 3 unit(s)<sup>5</sup>
- Business Analytics Elective #1 3 unit(s)<sup>5</sup>
- BUS1 170 - Fundamentals of Finance 3 unit(s)
- SJSU Studies Area V 3 unit(s)<sup>7</sup>
- SJSU Studies Area R 3 unit(s)<sup>7</sup>

*Note: Area V also fulfills Non-Business Global Perspectives (a major requirement).*

### Spring Semester (12 units)

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- Business Analytics Elective #2 3 unit(s)<sup>5</sup>
- Business Analytics Elective #3 3 unit(s)<sup>5</sup>
- BUS4 188 - Business Systems and Policy 3 unit(s)
- BUS3 189 - Strategic Management 3 unit(s)

## Roadmap Notes

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<sup>1</sup> Preparation for the Major

<sup>2</sup> Preparation for the Major and a "C" grade or better

<sup>3</sup> Consult an advisor to determine your best option

<sup>4</sup> Course requires a "C" grade or better

<sup>5</sup> Course requires a "C-" grade or better

<sup>6</sup> A "C" grade or better is required

<sup>7</sup> Prerequisite Area A3 with "C-" or better; upper division standing

<sup>8</sup> If needed to reach 120 units, students may take any course

\* Either B1 or B2 must be taken with a B3 - Laboratory.

L = Lab; X = supplemental workshop required; W = Writing; WB = Writing for Business

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