

Program Proposal for a Minor

1. Name of the proposed minor. *Business Analytics*
2. Name of the department(s) involved. *Supply Chain and Information Systems, Accounting, Finance, Marketing, and Management in the Ivy College of Business.*
3. Name of contact person(s). *Jackie Rees Ulmer*
4. General description of the minor. *Students can add coursework in business analytics to any existing Ivy College of Business major. The coursework will be the required courses in the Business Analytics major (proposed). Students will gain experience in data science, data management, and various business analytics techniques and concepts.*
5. Need for the proposed minor. *Students returning from their internship experience(s) often identify the need for additional coursework in technology and analysis techniques. The Business Analytics minor will provide this experience without significantly increasing time to graduation. Students may also seek out this minor in order to differentiate themselves in the job market. Also, students may enjoy a particular concept and wish to explore in more depth, without the breadth that an additional major may entail. Furthermore, the skills available in the proposed Business Analytics minor are in very high demand by recruiters and employers.*
6. Objectives of the proposed minor including the student learning outcomes and how the learning outcomes will be assessed.

The following learning outcomes will be used for proposed business analytics minor

1. *Students will be able to use current technologies related to business analytics and data management.*
2. *Students will be able to translate their knowledge into practice using data and business analytics.*
3. *Students will be able to analyze and frame business problems, as well as develop solutions using data and business analytics.*
4. *Students will be able to communicate solutions to problems addressed by data and business analytics, using written, oral, visual, and electronic formats.*

These learning outcomes will be assessed using in-class assessment techniques, including quiz and exam questions, homework assignments, group projects, and individual and team presentations. Student learning outcome data will be collected in compliance with current methods used for AACSB accreditation processes.

7. Relationship of the minor to other programs at Iowa State University.

This minor provides Ivy College of Business students an alternative to the Business Analytics major. Also, it follows the same format of all other minors for Ivy College of Business undergraduate students. There is a one course (DS 201) overlap with the existing Data Science minor, administered by the College of Liberal Arts and Sciences. While there is overlap between the disciplines, a useful distinction is that Business Analytics is about locating and distilling useful information from structured and unstructured data to explain historical, current, and future business performance; determining the most appropriate analytical models and techniques to present and explain solutions to users. Data Science, on the other hand, is about the design, development, and deployment of algorithms through various programming techniques supporting decision tools; managing massive amounts of data and creating visualizations and other tools to aid in interpretation and understanding.¹

8. Relationship of the minor to the strategic plans of the university, of the college, and of department or program.

The Ivy College of Business offers high-quality undergraduate, masters, and doctoral level programs, and has a number of nationally recognized research scholars and a strong research reputation in selected fields, including analytics. The addition of this bachelor's level business analytics minor would make a significant contribution to the College's strategic goals. In fact, one of the items under Goal 1 of the Ivy College of Business' 2015-2020 strategic plan calls for "the establishment of new undergraduate majors, minors, and certificates based on industry needs."

9. Comparison of the proposed minor with similar programs at other universities, including the Regent's universities.

Neither the University of Iowa nor the University of Northern Iowa currently offer a minor in Business Analytics. Drake University does offer a minor in data analytics. However, this minor is much closer to data science than to business analytics.

10. Program requirements and procedures, including:

- a. prerequisites for prospective students;
- b. application and selection process;

¹ <https://www.kdnuggets.com/2015/10/infographic-data-scientist-business-analyst-difference.html>

- c. language requirements;
- d. courses and seminars presently available for credit toward the program;
- e. proposed new courses or modifications of existing courses;
- f. advising of students;
- g. implications for related areas within the university.

The Business Analytics minor would only be available to students with a major in the Ivy College of Business. Therefore, prospective students must meet the same eligibility requirements as all other Ivy College of Business students. Students in the minor must take an additional statistics course, STAT 326, than students in several other majors, such as Management Information Systems (MIS), Marketing (MKT) or Management (MGMT). However, students in the Accounting (ACCT), Finance (FIN), and Business Economics (BUSECON) majors are required to take STAT 326, so these students may find the minor to be an attractive option. The Ivy College of Business enforces all prerequisites.

Ivy College of Business students will follow the same application and selection process for the Business Analytics minor as they do for all other Ivy College of Business Minors. They will see an academic advisor to have the major noted on their record.

The Business Analytics minor does not require any foreign language. All of the courses for the minor are currently offered, and capacity does exist in these courses for additional students. These courses are listed below:

<i>Course Number</i>	<i>Course Name</i>	<i>Credits</i>	<i>Prerequisite(s)</i>
<i>DS 201</i>	<i>Introduction to Data Science</i>	<i>3</i>	<i>MATH 150</i>
<i>MIS 320 or ACCT 384</i>	<i>Database Management Systems or Accounting Information Systems and Analytics</i>	<i>3</i>	<i>MIS 301 (ACCT 384 also requires ACCT 285 or ACCT 501; ACCT 301)</i>
<i>MIS 436</i>	<i>Introduction to Business Analytics</i>	<i>3</i>	<i>STAT 326 MIS 320²</i>
<i>Electives</i>	<i>Choose at least two 3 credit courses from the list below</i>	<i>6</i>	
<i>Total</i>		<i>15</i>	

Electives (Minimum of 6 credits)	Course Number	Course Name	Credits	Pre-requisites
	ACCT 484	Advanced Accounting Information	3	ACCT 384

² ACCT 384 can substitute for MIS 320

		Systems		
	FIN 450	Analytical Finance	3	STAT 326 and ECON 301 or FIN 301
	MGMT 473x ³	Advanced Human Resource Management I	3	MGMT 371
	MIS/ACCT 315	Business Data Streams and Issues	3	Com S 113
	MIS 446	Advanced Business Analytics	3	STAT 326, MIS 320 or ACCT 384
	MKT/MIS 368	Marketing Analytics	3	MKT 340
	MKT 361x	Social Media Marketing Strategy	3	MKT 340
	MKT 367	Consultative Problem Solving	3	Sophomore or Higher Standing
	MKT 445	Customer Relationship Management	3	MKT 340
	SCM 430x ⁴	Supply Chain Analytics	3	SCM 301
	SCM 460	Decision Tools for Logistics & OM	3	SCM 301

No new courses need to be developed for the minor. Student advising is available through the Undergraduate Programs Office. All academic advisors can provide guidance to students considering the minor. Specific questions can also be routed to Associate Dean for Undergraduate Programs. There should be minimal implications of the minor on the rest of the University. The Department of Statistics and the College of Liberal Arts and Sciences (LAS) has been notified that there could be an increase in demand for STAT 326. The head of the Data Science program and LAS has also been notified that there could be increased demand for DS 201.

11. General description of the resources currently available and future resource needs, in terms of:
- a. faculty members;
 - b. computers, laboratories, and other facilities;

³ Initial offering in Spring 2019.

⁴ Initial offering in Spring 2019.

- c. library facilities (journals, documents, etc.) in the proposed area;
- d. supplies, field work, student recruitment, etc.

The Ivy College of Business has just hired four new tenure-track or tenured faculty in Business Analytics. There is no anticipation of needing additional faculty in this area in the near future. The current IT infrastructure in the Gerdin Business Building is adequate for the teaching needs of the proposed minor. There will be no need for additional library facilities, supplies, student recruitment, etc. for the proposed minor.

12. Describe the needs for new resources and/or reallocated resources. Attach to the program proposal memos from the department chair(s), the college dean(s), and other appropriate persons, agreeing to the allocation of new resources and/or the reallocation of resources.

As mentioned above, there are no new resources needed for the proposed minor.

13. Attach to the program proposal, letters of support, recommendations, and statements when appropriate, from programs and departments at ISU which are associated with the proposed program or have an interest in the proposed program.

These materials are forthcoming.

14. If the new program is interdisciplinary, a governance document should be created and submitted to the Associate Provost for Academic Programs. Indicate here that it has been completed.

This minor will be housed in and administered by the Department of Supply Chain and Information Systems.

Appendix A: Academic Program Approval Voting Record

This document is to be appended as the last page of the proposal for any new or revised academic program to record the successive votes of approval as the proposal moves through its required review and approval steps. Consult Faculty Handbook Section 10.8 or the Faculty Senate Curriculum Committee website for information regarding Committee review and voting requirements for each action.

Curricular Action: (check appropriate boxes below)

1. New Program Name Change Discontinuation Concurrent Degree for:
2. Undergraduate Major Graduate Major Undergraduate Minor Graduate Minor
 Undergraduate Certificate Graduate Certificate Other: _____
3. Name of Proposed Change: Business Analytics _____
4. Name of Contact Person: Dr. Jacquelyn Rees Ulmer e-mail address: jrulmer@iastate.edu
5. Primary College: Ivy College of Business____ Secondary College: _____
6. Involved Department(s): Primarily the Department of Supply Chain and Information Systems within the Ivy College of Business.

Voting record for this curricular action:

Voting Body	Votes			Date of Vote
	For	Against	Abstain	
Ivy College of Business, Undergraduate Business Analytics Task Force	6	0	0	May 9 th , 2018
Information Systems Faculty	18	0	0	August 16 th , 2018
Computer Curriculum Coordination Committee	6	0	0	September 7 th , 2018
Ivy College of Business Curriculum Committee	5	0	0	October 10 th , 2018
Ivy College of Business Faculty Approval Vote	62	1	0	December 4 th , 2018
Graduate Council				
Faculty Senate Curriculum Committee	5	0	0	February 11 th , 2019
Faculty Senate Academic Affairs Council	8	0	0	February 20, 2019
Faculty Senate				