## New Degree Program Proposal Business Analytics

# Status: Pending Review - Faculty Senate Exec Committee (<u>Previous Version</u>)

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#### 1. Review - College Approver - Business

Approved by Prem Mathew Associate Dean / College of Business Dept, February 10, 2019 1:25pm

#### 2. Review - Curriculum Coordinator

**Sent Back** by <u>Janice Nave-Abele</u> Curriculum Coordinator / University Accreditation, *February 12, 2019 2:34pm* 

#### **Comments**

Janice Nave-Abele (Curriculum Coordinator) February 12, 2019 2:34pm Sent back to the Originator for the following:

- 1. Proposal must be typed in Arial (10,11, or 12 pt.) font
- 2. Need Letters of Support (need one minimum three recommended)
- 3. Need Library Evaluation (missing)
- 4. Need Space Evaluation (missing)
- 5. Need to add the Name and Date of BEBC Reviewer of Four Year Budgets
- 6. Page 10 of Proposal form lists graduate level courses: MGMT 577, MRKT 577, BA 576 instead of undergraduate level courses: MGMT 477, MRKT 477, BA 476.
- 7. Please be sure to indicate via highlighting and notation in the Curriculum Plan any courses that have not yet been developed for Ecampus delivery but will be. Also, please indicate via notation any brand new courses in development. Please provide CPS number for those proposals if available.
- 8. Four Year Degree Plan (ex: <a href="https://apa.oregonstate.edu/pop/curriculum-four-year-plans">https://apa.oregonstate.edu/pop/curriculum-four-year-plans</a>) must be uploaded as a separate document under Other Attachments. Please be sure it clarifies a BA path separate from BS path.

Here's an example of separate BA and BS Four Year plans within the same program: <a href="https://liberalarts.oregonstate.edu/history/academic-programs/undergraduate-history">https://liberalarts.oregonstate.edu/history/academic-programs/undergraduate-history</a> Scroll down a bit on the webpage at that link and you'll see the two distinct BA/BS Degree Maps.

9. In your proposal, it appears that the BA degree requires all the BS requirements plus meeting the two year foreign language requirement. That does not meet the Academic Policy for a unit that offers a BA or BS option within a degree program. Please see the BA/BS Requirements Policy (<a href="https://apa.oregonstate.edu/academic-programs/academic-policies-and-procedures">https://apa.oregonstate.edu/academic-programs/academic-policies-and-procedures</a>) which I have included here:

Academic units decide whether to offer a Bachelor of Arts (B.A.) degree, a Bachelor of Science (B.S.) degree, or both. If both the B.A. and the B.S. are offered, then there should be clear and distinct requirements for each. Academic units may implement or elaborate on college-level requirements as well as formulate additional requirements that are consistent with those of the minimum requirements for a B.A. and B.S. degree from the University.

When both B.A. and B.S. degree types are proposed, an academic unit shall specify the requirements for each degree contrasting the intent of the curricula and addressing how each places comparable demands upon the time and effort of students.

**Janice** 

-APA

#### 3. Originator Response

<u>James Coakley</u> Senior Assoc Dean-AcademicProg / College of Business Dept, *February 15, 2019 1:13pm* 

#### **Comments**

James Coakley February 15, 2019 1:13pm

Document changed from Garamond to Arial

Letters of Support, Library Evaluation, and Space Evaluation attached

Spreadsheet electronically signed by BEBC

Degree Plan attached in other documents

Proposal changed to BS only, and verbiage added that shows additional requirements beyond Bacc Core

#### 4. Review - Curriculum Coordinator

**Approved** by <u>Janice Nave-Abele</u> Curriculum Coordinator / University Accreditation, *February 18, 2019 10:47am* 

#### Comments

Janice Nave-Abele (Curriculum Coordinator) February 18, 2019 10:47am

This proposal seeks to create a new undergraduate BS degree in Business Analytics.

#### 5. Review - Graduate School

**Approved** by <u>Janice Nave-Abele</u> Curriculum Coordinator / University Accreditation, *February 18, 2019* 10:49am

#### **Comments**

Janice Nave-Abele (Graduate School) February 18, 2019 10:49am

This proposal seeks to create a new undergraduate BS degree in Business Analytics. This is not a graduate program and thus Graduate School Review and Approval is not required.

#### 6. Review - Budgets and Fiscal Planning Committee

**Approved** by Andrew Ibarra Dir-Physical Activity Program / Sch of Bio/Pop Hlth Sci, February 21, 2019 11:29am

#### 7. Review - Graduate Council Chair

**Approved** by <u>Janice Nave-Abele</u> Curriculum Coordinator / University Accreditation, *February 21, 2019 1:30pm* 

#### **Comments**

Janice Nave-Abele (Graduate Council Chair) February 21, 2019 1:30pm

This proposal seeks to create a new undergraduate BS degree in Business Analytics. This is not a graduate program and thus Graduate Council review and approval is not required.

#### 8. Review - Curriculum Council Chair

Approved by Allen Thompson Associate Professor / Philosophy Department, March 1, 2019 10:21am

#### 9. Review - Faculty Senate Exec Committee

#### Pending Review

#### More Queued Reviews (4)

Faculty Senate; Provost /Academic Affairs; Academic Programs; Catalog Coordinator

#### **Proposal**

Proposal ID:106038 Type:New Degree Program Submission Date:February 15, 2019 1:13pm Comments:*None* 

#### **History**

Active Version - Submitted February 15, 2019 1:13pm

Version 1 - Submitted February 8, 2019 4:56pm

#### **Originators**

NAME	TITLE	DEPARTMENT/SCHOOL
James Coakley	Senior Assoc Dean-AcademicProg	College of Business Dept

#### **Contacts**

No contacts

#### **Proposal Details**

College:College of Business Department/School:No Department Program Type:Undergraduate Major New Degree Name:Business Analytics

#### **Supporting Documents**

#### **DOCUMENTS**

\* Signed Transmittal Sheet 🔎

Transmittal\_BSBA.pdf (48.81 Kb added Feb 13, 2019 4:20 pm )

BusAnalytics\_ExecSum.docx (15.21 Kb added Feb 13, 2019 7:55 am)

\* Proposal 🎱

Cat1\_BA.doc (378.00 Kb added Feb 15, 2019 12:52 pm)

\* Letters of Support 🚇

Daniel Pitlck <u>dpitluck</u> - <u>business analytics support letter for OSU.pdf</u> (48.76 Kb added Feb 15, 2019 9:40 am )

Perren Baker <u>Perren Baker Business Analytics Support Letter.pdf</u> (340.01 Kb added Feb 15, 2019 9:41 am )

\* Accessibility Form 🎱

Accessibility.pdf (46.44 Kb added Feb 12, 2019 2:34 pm)

#### \* Library Evaluation 🚇



Category 1 Library Assessment Business Analytics 2019 SIGNED.pdf (202.16 Kb added Feb 13, 2019 7:56 am)

#### 



Faculty CV's are available upon request docx (11.19 Kb added Feb 12, 2019 2:34 pm)

#### Other Attachments



Assessment Plan and Annual Reports Business Program 2018.xlsx (50.20 Kb added Feb 12, 2019 2:34 pm)

Response to COE and COS Liaison.docx (65.21 Kb added Feb 12, 2019 2:34 pm) This is in response to the COE and COS liaison that requests the college wait until they develop an undergraduate certificate in data science before submitting our proposal for an undergraduate degree in business analytics.

OSU BUDGET NARRATIVE Business Analytics.docx (95.05 Kb added Feb 13, 2019) 7:57 am)

four-year-plan.docx (62.65 Kb added Feb 13, 2019 8:23 am)

Four year program plan, which is also included in the proposal at appendix 2.

Space Evaluation - Cat 1 Proposal -Bachelor of Business Analytics.pdf (317.40 Kb added Feb 15, 2019 12:52 pm)

#### LIAISONS

#### \* Liaisons 🚇



#### **Honors College**

Request: Liaison Request.docx (12.66 Kb added Feb 12, 2019 2:34 pm) Response: HC\_Liaison\_response.pdf (91.29 Kb added Feb 12, 2019 2:34 pm)

#### Education

Request: Liaison\_Request.docx (12.66 Kb added Feb 12, 2019 2:34 pm)

Response: Education\_Liaison\_response.pdf (86.63 Kb added Feb 12, 2019 2:34 pm)

#### **Forestry**

Request: Liaison\_Request.docx (12.66 Kb added Feb 12, 2019 2:34 pm)

Response: Forestry Liaison response.pdf (118.68 Kb added Feb 12, 2019 2:34 pm)

#### COE & COS

Request: Liaison\_Request.docx (12.66 Kb added Feb 12, 2019 2:34 pm)

Response: COE COS Liaison Response.pdf (141.83 Kb added Feb 12, 2019 2:34 pm)

#### COE & COS

Request: <u>Liaison\_Request.docx</u> (12.66 Kb added Feb 15, 2019 9:42 am)

Response: Second COE COS Liaison Response.pdf (200.19 Kb added Feb 15, 2019)

12:53 pm)

Subsequent emails regarding initial COS & COS liaison response

#### **BUDGET INFORMATION**

## \* Budget Year 1 🚇

subudget workshoot Dus Apolyt

<u>osubudget worksheet BusAnalytics CR Signature.xlsx</u> (32.20 Kb added Feb 13, 2019 7:59 am )

## \* Budget Year 2

<u>osubudget\_worksheet\_BusAnalytics\_CR\_Signature.xlsx</u> (32.20 Kb added Feb 13, 2019 7:59 am )

## \* Budget Year 3 🚇

<u>osubudget\_worksheet\_BusAnalytics\_CR\_Signature.xlsx</u> (32.20 Kb added Feb 13, 2019 7:59 am )

### \* Budget Year 4 🚇





## **Proposal Transmittal Sheet**

Full Category I and Abbreviated Category I Proposals

Submit proposals to: Office of Academic Programs, Assessment, and Accreditation 314 Waldo Hall – Oregon State University

Attach Transmittal Sheet; Proposal; Library Evaluation (performed by the Library for Full Category I proposals), Letters of Support (external to OSU); Liaison Correspondence (internal to OSU), External Review (new graduate program proposals), and Budget Information (both OSU and HECC budget sheets for Full Category I proposals and OSU budget sheets for Abbreviated Category I proposals)

Full Category I Proposals: New Programs	Abbreviated Category I Proposals: Other Proposals			
Final Approvalfor new degrees, extension to OSU's branch campus, and substantive changes: Higher Education Coordinating Commission (HECC)	Final Approvalfor new academic units, renames, reorganizations, and, suspensions: OSU Provost			
Final Approval for new certificate programs: OSU Provost	Final Approval for terminations: OSU Board of Trustees			
Check one:	Check one:			
New Degree Program	Establish: new college, school, department or program			
New Certificate Program	Rename: change the name of an existing academic program or academic unit			
Extend Program to OSU Branch Campus	Reorganization: move the responsibility of an			
Substantive Change	academic program from one academic unit to another; reorganize existing academic unit(s), including mergers and splits			
	Suspension (or Reactivation): suspend an academic program (maximum period: three years)  Termination: terminate an academic program or academic unit			
Title of Proposal:	Proposed Effective Term:			
Bachelor's of Science in Business Analytics	202000, Summer 2019			
School/Department/Program:	College:			
N/A	Business			
I certify that the above proposal has been reviewed by administrators and committees. I approve this proposa	the appropriate Program, Department, School, and College al.			
Man U lerle 2/13	James R. Coakley			
Sign (Department/School Chair/Head; Director) Date	Print (Chair/Head; Director)			
Jut M Fes	13, 2019 Mitzi M. Montoya			
Sign (College Dean)  Date	Print (College Dean)			

# Proposal for the Initiation of a Bachelor's of Science Business Analytics

The College of Business proposes a new undergraduate degree program in Business Analytics that will provide students a focused exploration of applying data science tools to a specific business disciplines of human resources and marketing. The proposed course of study totals 180 credit hours, including 40 credits of university baccalaureate core education requirements, 91 credits of business administration core requirements (that includes 18 credits of baccalaureate core core), 44 credits of business analytics requirements, and 5 credits of unrestrictive electives. Five new courses will be added that are equivalents to existing graduate courses offered within the College.

The Business Analytics undergraduate degree will support a rapidly-growing interest from organizations that need people who can integrate data sets and tools to address opportunities and risks. Internal sources such as transaction lists can be combined with and matched to data from social networks, search engines and content providers. These data sets are quickly growing in size, complexity, information content and value. Business Analytics leverages advances in software interoperability, data exchange mechanisms and data mining and visualization techniques to better understand operations, customers, and markets.

The degree program will offer three options to integrate data science with business disciplines:

- The Human Resource Analytics option trains students to use a data-driven approach to managing people-related issues, such as recruiting, performance evaluation, hiring and promotion, compensation, and employee retention.
- The Digital Marketing Analytics option further develops analytical skills associated with Customer Relationship Management (CRM), web analytics, social media marketing and analytics, and marketing analytics
- The Market Research and Consumer Analytics option trains students to collect and analyze data
  to study market conditions and help businesses to promote their services and products.
   Students pursuing this option will gather and interpret data on consumer demographics, needs,
  preferences and buying habits by using statistical techniques and software.

Currently, there is significant demand for business analytics knowledge and skills.

- McKinsey Global Institute report: the United States faces a shortage of 140,000 to 190,000 individuals who possess deep business analytic skills and an additional 1.5 million managers with the skill set to implement the results.
- Computerworld surveys consistently identify business intelligence/analytics high in their lists of difficult-to-find skills.

The existing business courses within this degree program are currently offered face-to-face in Corvallis and fully online (through Extended Campus). The graduate equivalents of the five new courses are also available for on-campus and fully online delivery.

Because the degree program relies entirely on existing courses, administration and infrastructure, it requires no additional resources. Program oversight and review will be included in the duties of the current Associate Dean for Undergraduate Student Development. We plan to hire additional online academic advisors as the enrollment in the online program grows.



#### **Proposal for a New Academic Program**

Institution: Oregon State University

College/School: College of Business

**Department/Program Name: Business Analytics** 

Degree and Program Title: Bachelor's of Science in Business Analytics

#### 1. Program Description

a. Proposed Classification of Instructional Programs (CIP) number.

CIP code 52.1301

Title: Management Science.

**Definition:** A general program that focuses on the application of statistical modeling, data warehousing, data mining, programming, forecasting and operations research techniques to the analysis of problems of business organization and performance.

 Brief overview (1-2 paragraphs) of the proposed program, including its disciplinary foundations and connections; program objectives; programmatic focus; degree, certificate, minor, and concentrations offered.

The College of Business proposes to offer a Bachelor's of Science (BS) degree in Business Analytics with specializations in Human Resource Analytics Market Research and Consumer Analytics, and Digital Marketing Analytics. The BS in Business Analytics provides undergraduate students a focused exploration of complex business problems in terms of analytical models. Students will develop data analysis skills and learn how to interpret and communicate the resulting insights to maximize strategic value. Students will be introduced to topics and techniques associated with data mining, data visualization, text mining, and advanced statistical tools and techniques.

Although broadly defined, Human Resources Analytics is basically a sector within the broader field of analytics that involves the application of analytic processes within a human resource department for the purpose of improving employee performance. Market Research and Consumer Analytics provides the knowledge and skills to collect and analyze data to study market conditions and help businesses to promote their services and products. Digital Marketing Analytics prepares graduates to apply sophisticated methods to analyze big data and solve marketing problems such as consumer analysis, customer segmentation and micro-targeting.

Table 1. Summary of BS in Business Analytics Proposal

Table 1. Summary of BS in Busine	
Category	Information Summary
Proposal Title	Bachelor's of Science in Business Analytics
Proposal Purpose (e.g., New; Change—Rename, Move, Reorganization; Suspend; Terminate)	New Undergraduate Degree
Classification of Instructional Program (CIP) #	52.1301
Curriculum Proposal System # (incl link)	106038 (https://secure.oregonstate.edu/ap/cps/proposals/view/106038)
Banner Student Information System (SIS) #	To be assigned by the Registrar's Office
Degree Type (e.g., B.S., M.S., or Ph.D.)	B.S., H.B.S.
Program Type (e.g., Undergraduate, Graduate, First Professional)	Undergraduate
Academic Home	College of Business
College Code	02
Contacts (e.g,, Name, Title, Tel #, eMail Address)	James R Coakley, PhD Senior Associate Dean, Analytics and Operations 7-4116 Jim.coakley@oregonstate.edu
Faculty (New)	No new faculty will be required to support the launch of the program. Existing faculty are currently delivering all program courses or equivalents. New faculty will be added as enrollment in the program grows.
Staff (New)	No new staff will be required to support the launch of the program. Academic advising staff will be added as program enrollments grow
Library	No additional library resources will be required
Facilities/Space	No new facilities or space will be required
Budget (first four years)	Year 1: \$125,205; Year 2: \$104,910; Year 3: \$243,758; Year 4: \$252,153
Undergraduate Option(s)	Human Resource Analytics, Digital Marketing Analytics, Market Research and Consumer Analytics
Graduate Option(s)	Not Applicable
Undergraduate Minor(s)	Not Applicable
Graduate Minor(s)	Not Applicable
Course Designator (e.g.,	BA, MGMT, MRKT (Existing; no new course
Existing or New or Change)	designator will be required)
Courses (e.g., New Courses)	28 existing BA courses comprising 81 credits in the undergraduate business core

	17 existing baccalaureate core courses comprising 58 credits
	3 existing and 3 new statistics and business analytics courses comprising 21 credits. Note that the 3 new business analytics courses are undergraduate equivalents of existing graduate courses.
	10 existing and 2 new specialization courses from management (MGMT) and marketing (MRKT) comprising 23 credits. Note that the new specialization courses are undergraduate equivalents of an existing graduate course.
Location (e.g., Main; Cascades; Ecampus; HMSC)	Main Campus (Corvallis) and Extended Campus
Modality (e.g., Face-to-Face; On-line; Hybrid)	Face-to-Face and 50/50 Hybrid on campus, available fully online via Extended Campus
Enrollment Limitations	None
Accreditation	Association to Advance Collegiate Schools of Business
Program Unique Within	
Oregon University System	Yes
(e.g., Yes or No)	
Proposed Effective Term	
(e.g., term and year; Banner code)	Fall Term 2019 (202001)

c. Course of study – proposed curriculum, including course numbers, titles, and credit hours.

The proposed course of study totals 180 credit hours, including 40 credits of university baccalaureate core education requirements, 91 credits of business administration core requirements (that includes 18 credits of baccalaureate core), 44 credits of business analytics requirements, and 5 credits of unrestrictive electives.

The BS in Business Analytics curriculum, presented below, provides 25 credit hours beyond the baccalaureate core that emphasizes scientific and quantitative approaches to understanding information, and provides both the business context and analytical skills needed to translate business opportunities into analytics questions that can be solved using analytics techniques. See Appendix 1 for a full description of the major.

#### **Business Analytics Curriculum (45)**

#### Business Analytics Core (21)

In the business analytics core, students will be introduced to topics and techniques associated with data mining, data visualization, text mining, and advanced statistical tools and techniques.

#### Course List

Code	Title	Hours
BA 275	FOUNDATIONS OF STATISTICAL INFERENCE	4
BA 375	APPLIED QUANTITATIVE METHODS	4
BA 474	DATA MANAGEMENT <sup>1</sup> [CPS 105927]	3
BA 475	DATA EXPLORATION AND VISUALIZATION <sup>1</sup> [CPS 105928]	3
BA 476	DATA AND TEXT MINING <sup>1</sup> [CPS 105929]	3
BA 481	INTRODUCTION TO BUSINESS ANALYTICS	4
Total Ho	purs	21

#### Human Resource Analytics Option (23)

Although broadly defined, human resources analytics is basically a sector within the broader field of analytics that involves the application of analytic processes within a human resource department for the purpose of improving employee performance. Specifically, human resources analytics involves providing insight regarding the process of gathering data and making advantageous, relevant decisions about how human resource processes can be improved upon. The Human Resource Analytics option trains students to use a data-driven approach to managing people-related issues, such as recruiting, performance evaluation, hiring and promotion, compensation, and employee retention.

#### Course List

Code	Title	Hours
MGMT 448	EMPLOYEE RECRUITMENT AND SELECTION	4
MGMT 449	COMPENSATION MANAGEMENT	4
MGMT 452	LEADERSHIP	4
MGMT 453	HUMAN RESOURCES MANAGEMENT	4
MGMT 455	INFLUENCE AND NEGOTIATION	4
MGMT 477	INTEGRATED HUMAN RESOURCE ANALYTICS PROJECT <sup>1</sup> [CPS 105930]	3
Total Hours		23

#### Digital Marketing Analytics Option (23)

Digital Marketing Analysts apply sophisticated methods to analyze big data and solve marketing problems such as consumer analysis, customer segmentation and microtargeting. The Digital Marketing Analytics option further develops analytical skills

associated with Customer Relationship Management (CRM), web analytics, social media marketing and analytics, and marketing analytics.

#### Course List

Code	Title	Hours
MRKT 477 IN	TEGRATED MARKETING ANALYTICS PROJECT <sup>1</sup> [CPS 105931]	3
MRKT 484 DI	GITAL MEDIA AND MARKETING INTEGRATION	4
MRKT 485 SE	EARCH ENGINE MARKETING	4
MRKT 486 CL	JSTOMER RELATIONSHIP MANAGEMENT	4
MRKT 492 CC	ONSUMER BEHAVIOR	4
MRKT 493 IN	TEGRATED MARKETING COMMUNICAIONS	4
Total Hours		23

#### Market Research and Consumer Analytics Option (23)

Market research analysts collect and analyze data to study market conditions and help businesses to promote their services and products. These professionals gather and interpret data on consumer demographics, needs, preferences and buying habits by using statistical techniques and software.

#### Course List

Code	Title	Hours
MRKT 396 FUNDAME	ENTALS OF MARKETING RESEARCH	4
<b>MRKT 477 INTEGRA</b>	TED MARKETING ANALYTICS PROJECT <sup>1</sup> [CPS 105931]	3
MRKT 486 CUSTOMI	ER RELATIONSHIP MANAGEMENT	4
MRKT 491 QUALITA	TIVE RESEARCH METHODS <sup>2</sup>	4
MRKT 492 CONSUM	ER BEHAVIOR	4
MRKT 496 MARKETI	NG RESEARCH PRACTICUM <sup>2</sup>	4
Total Hours		23

#### Notes:

- 1. These are undergraduate variants of existing graduate-level courses BA 574, BA 575, BA 576 and BA 577 that are currently available in face-to-face, hybrid, and online modalities.
- 2. MRKT 491 and MRKT 496 are existing courses that need to be developed for online delivery.
- d. Manner in which the program will be delivered, including program location (if offered outside of the main campus), course scheduling, and the use of technology (for both on-campus and off-campus delivery).
  - Program will be delivered at the Corvallis campus with courses offered in face-to-face and 50/50 hybrid (50% face-to-face, 50% online) formats. The Digital

Marketing Analytics and Market Research and Consumer Analytics options will also be available fully online through OSU Extended Campus.

The comprehensive set of skills learned in the Business Analytics degree program include programming languages like R, SQL and Python, software applications like RapidMiner and Tableau, as well as advanced statistical methods and techniques for predictive modeling.

The business core courses are offered every term at the Corvallis campus and online.

The Business Analytics courses are schedule such that the major-specific requirements can be completed in one academic year following a fall-winter-spring sequence:

H	luman Re	esource Analy	tics	D	igital M	arketing Analy	ytics	Market F	Research	and Consum	er Analytic
Course	Fall	Winter	Spring	Course	Fall	Winter	Spring	Course	Fall	Winter	Spring
BA 474		X		BA 474		×		BA 474		X	
BA 475		X		BA 475		X		BA 475		X	
BA 476			X	BA 476			X	BA 476			x
BA 481	X			BA 481	×			BA 481	x		
MGMT 448	3		X	MRKT 477			X	MRKT 396	X		
MGMT 449	)		X	MRKT 484	X			MRKT 477			X
MGMT 452	X			MRKT 485		×		MRKT 486	X		X
MGMT 453	X			MRKT 486	Х			MRKT 491		x	
MGMT 455	i	×		MRKT 492	x		X	MRKT 492	X		
MGMT 477	,		X	MRKT 493		×		MRKT 496		×	

## e. Adequacy and quality of faculty delivering the program.

All existing coursework will be delivered by the same faculty who currently delivery the courses. The new undergraduate Business Analytics Core coursework will be delivered by the same faculty who deliver comparable coursework in our graduate programs. The College, accredited by the Association to Advance Collegiate Schools of Business (AACSB), has very strict guidelines regarding qualifications of both academically and professionally qualified faculty. All faculty delivering the Business Analytics coursework will meet those qualifications.

Faculty CVs are available upon request.

#### f. Adequacy of faculty resources – full-time, part-time, adjunct.

All faculty required to deliver the Business Analytics degree program are on fulltime appointments. As enrollment in the program grows, we will add faculty resources to deliver the coursework using the academic and professional faculty guidelines required to maintain our AACSB accreditation.

#### q. Other staff.

The advising resources for the admitted students are the same as for the existing College of Business undergraduate degree programs. In accordance with

University guidelines, we hire additional academic advisors as the total number of enrolled students in all of our undergraduate degree programs increase.

h. Adequacy of facilities, library, and other resources.

Because we are using existing and equivalent coursework and merely increasing the enrollment in those courses, there is no impact on facilities, library, or other resources. The College currently provides remote connection capabilities (VPN) that allows online students to have access to software and computing resources needed to complete coursework and projects. We expand our capacity for remote connections as our overall online population of students grows, which includes enrollment in this new degree program.

Anticipated start date.

Fall 2019 (202001)

#### 2. Relationship to Mission and Goals

a. Manner in which the proposed program supports the institution's mission, signature areas of focus, and strategic priorities.

The Business Analytics degree is most clearly relevant to the university's signature area of "Promoting Economic Growth and Social Progress". Increasingly, businesses, nonprofits, and other organizations are interested in better using available information in operations, tactical, and strategic decision making. Business Analytics employs the combination of rapid growth of available data, both in organizations' data stores and through third parties, and the equally rapid development in software interoperability, data exchange mechanisms, and data mining and visualizations techniques. This combination allows organizations improved ability to extract and employ the value from this information to meet stakeholders' needs.

With respect to the 2030 vision for the University, this new degree program will:

- Offer an affordable and excellent education for all learners by providing educational access in residence in Corvallis and online via OSU Extended Campus. In addition, the College has developed pathways for community college students to complete their four-year degree either online or inresidence.
- Lead in education delivery by being the only business analytics undergraduate degree program offered by State universities.
- Engage students as collaborators in experiential learning and discovery by incorporating actual analytics projects from industry into the capstone analytics course.
- b. Manner in which the proposed program contributes to institutional and statewide goals for student access and diversity, quality learning, research, knowledge

creation and innovation, and economic and cultural support of Oregon and its communities.

The College of Business is currently collaborating with multiple community colleges within the State to develop degree pathways that allows place-bound students to earn their four-year degree using fully online classes.

Quality learning is achieved through our external accreditation with AACSB (see below) that has very high standards for assurance of learning. Only three of the seven state institutions have earned AACSB accreditation for their business programs – OSU, Portland State University, and University of Oregon. In addition, the online program will be offered by OSU Extended Campus that is rated as third in the nation by US News for their online degree programs.

- c. Manner in which the program meets regional or statewide needs and enhances the state's capacity to:
  - i. improve educational attainment in the region and state;

Educational attainment depends on access. Offering the degree program fully online through OSU Extended Campus maximizes the opportunities statewide for students to engage in the program. Students also have the option of pursuing the degree program in the face-to-face format in Corvallis if they wish a residential program of study. We also cater to part-time students by offering our classes in the evening and/or in a 50/50 hybrid mode with meetings once per week.

For individuals who complete the Associate of Science Oregon Transfer (ASOT) degree in business, this four-year degree can be earned by completing 90 credits at OSU.

ii. respond effectively to social, economic, and environmental challenges and opportunities; and

As described previously, graduates skilled in the areas of business analytics are of critical importance to the state's economy and workers. The program includes required training in ethical business operations and this, in combination with students who are trained at the forefront in efficient and informed human resource and marketing concepts, and those who can provide best practices in those area, will produce responsible and significant contributors to the Oregon economy.

iii. address civic and cultural demands of citizenship.

The College of Business has established professional behavior standards that are strictly enforced within all College programs across all locations and modalities (see URL <a href="http://business.oregonstate.edu/about/academic-policies-standards">http://business.oregonstate.edu/about/academic-policies-standards</a>).

The program of study includes a required ethics course that is specific to business. Ongoing dialogue about the ethical use of big data is integrated throughout the program.

#### 3. Accreditation

- a. Accrediting body or professional society that has established standards in the area in which the program lies, if applicable.
  - The University, and all of the business programs within the University, are accredited through the Association to Advance Collegiate Schools of Business (AACSB), which is widely considered the benchmark for business programs.
- b. Ability of the program to meet professional accreditation standards. If the program does not or cannot meet those standards, the proposal should identify the area(s) in which it is deficient and indicate steps needed to qualify the program for accreditation and date by which it would be expected to be fully accredited.
  - The College, and the University, currently meet the accreditation standards.
- c. If the proposed program is a graduate program in which the institution offers an undergraduate program, proposal should identify whether or not the undergraduate program is accredited and, if not, what would be required to qualify it for accreditation.
  - All graduate and undergraduate degree programs offered by the College of Business are accredited through AACSB.
- d. If accreditation is a goal, the proposal should identify the steps being taken to achieve accreditation. If the program is not seeking accreditation, the proposal should indicate why it is not.

Not applicable.

#### 4. Need

 Anticipated fall term headcount and FTE enrollment over each of the next five years.

	Con	/allis Cam	ipus	Online via Ecampus			us Total			
Year	Headcount	FTE	Graduates	Headcount	Headcount FTE Graduates H			FTE	Graduates	
2019-20	20	20.0	20	10	5.0	0	30	25.0	20	
2020-21	90	90.0	38	35	17.5	10	125	107.5	48	
2021-22	137	137.0	58	65	32.5	35	202	169.5	93	
2022-23	161	161.3	58	75	37.5	45	236	198.8	103	
2023-24	183	183.2	78	90	45.0	45	273	228.2	123	

Expected degrees/certificates produced over the next five years.
 See above.

c. Characteristics of students to be served (resident/nonresident/international; traditional/ nontraditional; full-time/part-time, etc.).

According to the Office of Institutional Research at OSU, 22 percent of the students in the College of Business are from historically underrepresented groups and 17 percent are international. Of the students currently enrolled in online degree programs offered by the college, 40 percent are first generation, 21 percent are from historically underrepresented groups, and 13 percent are international. On campus, 27 percent of our business students transferred to OSU from another academic institution. For our online business student population, 77 percent are transfer students. The degree program is designed to serve both full-time and part-time students.

#### d. Evidence of market demand.

Demand for managers with ability to use (big) data analysis to make effective decisions is growing rapidly. McKinsey & Company forecast a shortage of 1.5 million such managers in the United States alone and Price-Waterhouse Coopers suggests that firms will therefore need to compete fiercely for individuals with strong analytics skills and business knowledge. Computerworld surveys consistently identify business intelligence and analytics high in their list of difficult-to-find skills.

The Bureau of Labor Statistics (BLS) predicts an increase demand for Operations Research Analysts. Demand for these positions are expected to increase by 27,600 between 2014-2024, which is a 30% growth rate and "Much Faster than Average" rate, with the Portland/Vancouver market experiencing above-national-average growth. As the use of massive data sets – also known as big data – has expanded, so has the demand for skilled workers to collect and manage this information. The expanding use of big data is also driving the demand for market research analysts with backgrounds in statistics and data analysis. The BLS projects that careers in this field will increase by 23 percent during the same time period.

e. If the program's location is shared with another similar Oregon public university program, the proposal should provide externally validated evidence of need (e.g., surveys, focus groups, documented requests, occupational/employment statistics and forecasts).

The University of Oregon (UO) offers a concentration in Operations and Business Analytics that integrates operations management (sourcing, supply chain, manufacturing and service systems) with data analytics. The OSU program offers concentrations in human resources and marketing, distinctly different from operations. Thus, the online delivery mode for this degree program should not conflict with the degree program offered by UO

f. Estimate the prospects for success of program graduates (employment or graduate school) and consideration of licensure, if appropriate. What are the expected career paths for students in this program?

Student placement/employment rate is a primary indicator of program success for each concentration. The College regularly collects placement data for all students both at graduation and in the 90-days following graduation (these data are reported for ranking and other purposes) using a survey similar to the National Association of Colleges and Employers (NACE) First-Destination Survey.

#### 5. Outcomes and Quality Assessment

a. Expected learning outcomes of the program.
 Learning Outcomes for the Business Analytics undergraduate degree.

Degree-specific Learning Outcomes: Graduates from the Business Analytics degree program will be able to:	Coursework
Identify and describe complex business problems in terms of analytical models	BA 375, BA 474, BA 475, BA 476
Apply the primary statistical, quantitative and business analytics tools and techniques to support common business decision-making applications	BA 375, BA475, BA 476, MGMT 477, MRKT 477
Analyze the applications of business analytics in real- world business situations	MGMT 477, MRKT 477
Communicate technical information to both technical and non-technical audiences in writing and with visualizations.	BA 476, MGMT 477, MRKT 477
Demonstrate ethical decision-making in structured or unstructured and ambiguous situations	BA 474, BA 475, BA 476, BA 481, MGMT 477, MRKT 477

b. Methods by which the learning outcomes will be assessed and used to improve curriculum and instruction.

The majority of the learning objectives will be assessed using course-embedded measures. These include exam questions, case analyses, class discussion, class projects and presentations. In conjunction with the MBA option in Business Analytics, each learning objective will be assessed once every two years (a two-year assessment cycle). The 'off' assessment year will allow the course/discipline coordinator to analyze the data from the previous assessment and implement changes to coverage, delivery, etc. if it was deemed necessary. The subsequent

assessment cycle will allow us to 'close the loop', or evaluate the impact of changes implemented related to the objective. If no changes were made, the subsequent assessment cycle will allow us to continue to monitor whether students continue to meet the objective. Note that given the integrative nature of the program, coverage of a particular learning objective will take place in multiple courses or across courses.

 Nature and level of research and/or scholarly work expected of program faculty; indicators of success in those areas.

The College of Business sets expectations for the nature and level of research and/or scholarly activity of program faculty. The Associate Dean for Research and Faculty Development evaluates all tenure/tenure-track faculty on an annual basis to ensure they are meeting our expectations for scholarly work. The proposed degree will not impact these expectations.

#### 6. Program Integration and Collaboration

a. Closely related programs in this or other Oregon colleges and universities.

The University of Oregon offers a concentration in Operations and Business Analytics that integrates operations management (sourcing, supply chain, manufacturing and service systems) with data analytics. The distinction is that the OSU program offers concentrations in human resources and marketing, distinctly different from operations.

The Portland State University School of Business does not currently offer any degree programs with an emphasis in data analytics.

b. Ways in which the program complements other similar programs in other Oregon institutions and other related programs at this institution. Proposal should identify the potential for collaboration.

All students will complete the undergraduate business core, which provides foundational knowledge for students to pursue graduate programs in business, especially MBA degree programs.

OSU has Degree Partnership Programs with all community colleges within the state, allowing seamless transition for those students to enter this degree program.

c. If applicable, proposal should state why this program may not be collaborating with existing similar programs.

Not applicable

d. Potential impacts on other programs.

No adverse impacts are expected on other programs. The new degree is intended to attract new students into the business analytics degree and provide flexible alternatives for existing students in the state and region.

#### 7. External Review

If the proposed program is a graduate level program, follow the guidelines provided in *External Review of New Graduate Level Academic Programs* in addition to completing all of the above information.

## Appendix 1 Curricular Program for Business Analytics Major

Business Analytics major requirements are divided into two parts – lower-division and upper-division. The lower-division business core program involves completion of courses within the first and second year (see core curriculum below) that build a solid foundation for the upper-division Business Analytics and business curricula. The lower-division business core course work may be completed at OSU or any accredited college or university that offers equivalent courses transferable to OSU.

Summary of Requirements	
Lower Division	59-62
Business Core Classes (40-43)	
Math, Economics, Writing and Communications (15) 1	
Business Analytics Class (4)	
Upper Division	73
Writing (3) <sup>2</sup>	
Business Core Classes (30)	
Business Analytics Classes (40)	
	40
University General Education Requirements	40
	5-8
Unrestricted Electives	0 0

Total credits required for graduation

180

- 1 11 credits from the lower-division business core satisfy University General Education Requirements
- <sup>2</sup> 3 credits for the upper-division business core satisfy University General Education Requirements

## **Business Administration Core Curriculum (85–91)**

The business administration core curriculum provides students with a broad overview of business; basic skills in accounting and quantitative methods; an understanding of the legal and social environment of business; a background in management and organizational behavior, marketing, finance, and operations management; an understanding of the entrepreneurial process; and the opportunity to integrate course work and further develop decision-making skills through the analysis of business cases.

First Year Hours

Students entering OSU on the Corvallis campus as their first college experience are required to participate in Innovation Nation, the College of Business Living-Learning Community (LLC). These students, as well as students who transfer in the winter term into the business administration major from another college or university, will complete the following three-course sequence during their first year:

BA 160	B-ENGAGED	3
or <u>BA 163</u>	B-ENGAGED	3
BA 161	INNOVATION NATIONAWARENESS TO ACTION	3
BA 162	INNOVATION NATIONIDEAS TO REALITY	3
	s, including students completing their degree via OSU Extended nplete the following course: BUSINESS NOW	6
All students shou	uld also complete:	
COMM 111 or COMM 114 or COMM 218	*PUBLIC SPEAKING or *ARGUMENT AND CRITICAL DISCOURSE or *INTERPERSONAL COMMUNICATION	3
MTH 241	*CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE	4
	Total First Year Business Core Hours	13-16
	Second Year	
All students in th courses*:	e business administration major should complete the following	
BA 281	PROFESSIONAL DEVELOPMENT	3
BA 282	PERSONAL, PROFESSIONAL AND LEADERSHIP DEVELOPMENT I	1
BA 283	PERSONAL, PROFESSIONAL AND LEADERSHIP DEVELOPMENT II	1
	PERSONAL, PROFESSIONAL AND LEADERSHIP	
BA 284	DEVELOPMENT III	1
administration m	ansfer from another college or university into the business ajor who have completed all lower-division business core course plete the following course: PERSONAL AND PROFESSIONAL DEVELOPMENT	3
All second-year	students should also complete:	
BA 211	FINANCIAL ACCOUNTING	4
BA 213	MANAGERIAL ACCOUNTING	4
BA 223	PRINCIPLES OF MARKETING	4
or <u>BA 390</u>	or MARKETING	7
BA 230	BUSINESS LAW I	4
BA 240	FINANCE	4
or <u>BA 360</u> BA 260	or INTRODUCTION TO FINANCIAL MANAGEMENT INTRODUCTION TO ENTREPRENEURSHIP	4
	INTRODUCTION TO LINTREFRENEURSHIP	4

BA 270	BUSINESS PROCESS MANAGEMENT	4
ECON 201	*INTRODUCTION TO MICROECONOMICS	4
ECON 202	*INTRODUCTION TO MACROECONOMICS	4
	Total Second Year Business Core Hours	39-42
	Third Year	
D A 04.4	THIRD-YEAR PERSONAL PROFESSIONAL LEADERSHIP	4
BA 311	DEVELOPMENT I	1
<b>Β</b> Λ 312	THIRD YEAR PERSONAL PROFESSIONAL LEADERSHIP	1
BA 312	DEVELOPMENT II	I
BA 313	THIRD YEAR PERSONAL PROFESSIONAL LEADERSHIP DEVELOPMENT III	1
	DEVELOT MEINT III	
BA 347	INTERNATIONAL BUSINESS	4
BA 352	MANAGING INDIVIDUAL AND TEAM PERFORMANCE	4
DA 254	^MANAGING ETHICS AND CORPORATE SOCIAL	4
BA 354	RESPONSIBILITY	4
<u>BA 357</u>	OPERATIONS MANAGEMENT	4
BA 370	BUSINESS INFORMATION SYSTEMS OVERVIEW	4
or <u>ACTG 378</u>	or ACCOUNTING INFORMATION MANAGEMENT	•
WR 222	*ENGLISH COMPOSITION	3
or <u>WR 323</u> or WR 327	or *ENGLISH COMPOSITION or *TECHNICAL WRITING	3
01 <u>VVIX 321</u>	OF FEOTINICAL WINTING	
	Total Third Year Business Core Hours	26
	Fourth Year	
D 0 444	FOURTH YEAR PERSONAL PROFESSIONAL LEADERSHIP	4
BA 411	DEVELOPMENT I	1
BA 412	FOURTH YEAR PERSONAL PROFESSIONAL LEADERSHIP	1
DA 412	DEVELOPMENT II	ı
BA 413	FOURTH YEAR PERSONAL PROFESSIONAL LEADERSHIP DEVELOPMENT III	1
BA 466	INTEGRATIVE STRATEGIC EXPERIENCE	4
	20.0 MIVE ON WILDIO EM EMEMOE	•
	Total Fourth Year Business Core Hours	7
	Total Business Core Hours	85-91

## **Business Analytics Curriculum (44)**

**Business Analytics Core (21)** 

<sup>\*</sup> Baccalaureate Core Course (BCC)^ Writing Intensive Course (WIC)

In the business analytics core, students will be introduced to topics and techniques associated with data mining, data visualization, text mining, and advanced statistical tools and techniques.

#### Course List

Code	Title	Hours
BA 275	FOUNDATIONS OF STATISTICAL INFERENCE	4
BA 375	APPLIED QUANTITATIVE METHODS	4
BA 474	DATA MANAGEMENT <sup>1</sup> [CPS 105927]	3
BA 475	DATA EXPLORATION AND VISUALIZATION <sup>1</sup> [CPS 105928]	3
BA 476	DATA AND TEXT MINING <sup>1</sup> [CPS 105929]	3
BA 481	INTRODUCTION TO BUSINESS ANALYTICS	4
Total Ho	ours	21

#### Human Resource Analytics Option (23)

Although broadly defined, human resources analytics is basically a sector within the broader field of analytics that involves the application of analytic processes within a human resource department for the purpose of improving employee performance. Specifically, human resources analytics involves providing insight regarding the process of gathering data and making advantageous, relevant decisions about how human resource processes can be improved upon. The Human Resource Analytics specialization trains students to use a data-driven approach to managing people-related issues, such as recruiting, performance evaluation, hiring and promotion, compensation, and employee retention.

#### Course List

Code	Title	Hours
MGMT 448	EMPLOYEE RECRUITMENT AND SELECTION	4
MGMT 449	COMPENSATION MANAGEMENT	4
MGMT 453	HUMAN RESOURCES MANAGEMENT	4
MGMT 452	LEADERSHIP	4
MGMT 455	INFLUENCE AND NEGOTIATION	4
MGMT 477	INTEGRATED HUMAN RESOURCE ANALYTICS PROJECT <sup>1</sup> [CPS 105930]	3
<b>Total Hours</b>		23

#### <u>Digital Marketing Analytics Option (23)</u>

Digital Marketing Analysts apply sophisticated methods to analyze Big Data and solve marketing problems such as consumer analysis, customer segmentation and micro-

targeting. The Digital Marketing Analytics specialization further develops analytical skills associated with Customer Relationship Management (CRM), web analytics, social media marketing and analytics, and marketing analytics.

#### Course List

Code	Title	Hours
MRKT 477 INT	FEGRATED MARKETING ANALYTICS PROJECT <sup>1</sup> [CPS 105931]	3
MRKT 484 DIG	SITAL MEDIA AND MARKETING INTEGRATION	4
MRKT 485 SE	ARCH ENGINE MARKETING	4
MRKT 486 CU	STOMER RELATIONSHIP MANAGEMENT	4
MRKT 492 CO	NSUMER BEHAVIOR	4
MRKT 493 INT	FEGRATED MARKETING COMMUNICAIONS	4
Total Hours		23

#### Market Research and Consumer Analytics Option (23)

Market research analysts collect and analyze data to study market conditions and help businesses to promote their services and products. These professionals gather and interpret data on consumer demographics, needs, preferences and buying habits by using statistical techniques and software.

#### Course List

Code	Title	Hours
MRKT 396 FUN	IDAMENTALS OF MARKETING RESEARCH	4
MRKT 477 INT	EGRATED MARKETING ANALYTICS PROJECT <sup>1</sup> [CPS 105931]	3
MRKT 486 CUS	STOMER RELATIONSHIP MANAGEMENT	4
MRKT 491 QUA	ALITATIVE RESEARCH METHODS	4
MRKT 492 COI	NSUMER BEHAVIOR	4
MRKT 496 MAI	RKETING RESEARCH PRACTICUM	4
Total Hours		23

 Undergraduate variants of existing graduate-level courses BA 574, BA 575, BA 576 and BA 577 that are currently available in face-to-face, hybrid, and online modalities.

Appendix 2 Four-year Program Plan for Business Analytics Major

	fall		Winter		Spring		
	Course	Credits	Course	Credits	Course	Credits	Total
	BA 160 B-Engaged	3	BA 161 Awareness to Action	3	BA 162 Ideas to Reality	3	
First Value	MTH 111 College Algebra	4	MTH 241 Calculus for Mgmt and SS	4	ECON 201 Intro to Microeconomics	4	
First Year	WR 121 Enblish Composition	3	COMM 111 or 114 or 218	3	WR 222 English Composition	3	
1	Bio Bac Core Lab Science	4	Phys Bac Core Lab Science	4	Bio/Phys Bac Core Lab Science	4	
			HHS 231 Lifetime Fitness	2	PAC	1	
		14		16		15	45
	ECON 202 Intro to Macroeconomics	4	BA 211 Financial Accounting	4	BA 213 Managerial Accounting	4	
Second	BA 260 Intro to Entrepreneurship	4	BA 275 Foundation of Statistics	4	BA 230 Business Law	4	
Year	BA 281 Professional Development	3	BA 283 PPL	1	BA 270 Business Process Mgmt	4	
	BA 282 PPL	1	BC: Western Culture	3	BA 284 PPL	1	
	BC: Literature & Arts	3	BC: Cultural Diversity	3	Elective	2	
		15		15		15	45
	BA 311 PPL	1	BA 312 PPL	1	BA 313 PPL	1	
Third	BA 223 Marketing	4	BA 240 Intro to Fin. Mgmt	4	BA 370 Bus Info Systems	4	
Year	BA 352 Managing Indv & Team Perf	4	BA 347 International Bus	4	BA 375 Applied Quant Methods	4	
	BA 357 Operations Mgt	4	BA 354 Managing Ethics	4	BC: Sci/Tech/Society	3	
	BC: Diff/Power?Disc.	3	BC: Cont global Issues	3	Elective	1	
		16		16		13	45
	BA 411 PPL	1	BA 412 PPL	1	BA 413 PPL	1	
Fourth	BA 466 Integ. Strat. Exper.	4	BA 474 Data Management	3	BA 476 Data & Tet Mining	3	
Year	BA 481 Into to Bus Analytics	4	BA 475 Data Explor. & Visual.	3	Mgmt/Mrkt 477 Capstone	3	
	Option 1	4	Option 3	4	Option 5	4	
	Option 2	4	Option 4	4	Elective	2	
		17		15		13	45

Why does a student enroll in a business analytics degree? Why did I enroll in and complete a business analytics degree? The short answer: to solve problems.

After graduating in 2014 with a BS in math and a minor in business administration it wasn't too long before I found myself wondering "what the hell am I supposed to do now?" Two weeks later I started working as an analyst in the worker's compensation medical billing industry. Who knew at twenty-two years old that this even existed? The company I worked for was small and innovative (for the industry) and I was given free rein to solve problems, and perhaps more importantly, to better learn how to solve problems. This is at the heart of business analytics.

As an undergraduate, I took two classes that helped me understand this: Deterministic Decision Making and Probabilistic Decision Making. We simply solved business problems in which we applied rigorous academic techniques without losing the context of the actual case study. Real-world business problems are not clean cut. They are rarely "textbook," and they require a measure of imagination and resource management to execute successfully. After working for a couple years, I chose to enroll in Oregon State's Business Analytics MBA program because it offered the same learning environment and opportunities that I found as an undergraduate and in my career. The coursework, projects, and extracurricular opportunities in that program have directly translated to success in my working career.

One of the biggest advantages a university can gives its undergraduates is the ability to tell a story about their capabilities. No interviewer ever cared about the classes I passed and the textbooks I read. The projects I undertook, cases I studied and mastered, and competitions and simulations I won demonstrated my aptitude for applying those things learned in the classroom and from the book. A business analytics degree provides ample opportunities to gain the experiences needed to land that first job out of college, even if it is "entry-level requiring three to five years of experience."

Business analytics is a gateway to understanding data science and AI that is quickly becoming a mainstay in all professions and industries. Undergraduates studying business analytics are primed to enter the workforce with the knowledge and capabilities to adapt and play an important role in this latest industrial revolution.

The following are questions and experiences that I have encountered in my career that an entry-level employee trained in business analytics could immediately impact:

**Human Resource Analytics** – What role do the employees play during integration after a merger or acquisition? How do employees interact with the physical space at work? What about the digital space? How can companies retain millennials longer, and as happier employees? How can we plan and distribute meals for 130 people over five days?

Market Research and Consumer Analytics – Who are our customers? How do our target markets compare to the picture of the consumer painted by the various data points we collect?

Are there purchasing trends or subscription patterns we can use for targeted marketing campaigns?

**Digital Marketing Analytics** – Services like Google Analytics provide unprecedented digital marketing data for even the most nascent startups with a website; how can these companies, usually with limited resources, analyze this data and make smarter decisions about their marketing spend?

**Supply Chain Analytics** – I met three supply chain analysts in my hiring class at Columbia Sportswear. Even as new transportation and logistics is further automated with the advent of AI and machine learning components companies will need time and resources to steady the ship while adapting to these new advancements. Even then, there will be problems and situations that an algorithm cannot solve. These are the moments that "make the headlines" within a company and take a business analyst's mind to solve.

It is a principle of mine to not make monetary donations to my alma mater while still paying student loans. But supporting the programs that have helped progress my professional career and personal development is of great interest. Being a resource and providing support to the programs that will prepare students to solve problems in the real world absolutely falls within that realm and has my full backing.

#### Short bio:

- Undergraduate degree: Mathematics, with a Business Administration Minor; Pacific University '14
- MBA: Business Analytics; Oregon State University '18
  - Member of 2018 ACG Cup Championship team (http://www.acgcupnw.org/)
  - Member of two-person winning CapSim team in Business Strategy class
  - Partnered with box subscription company to provide customer subscription analytics as capstone project
- Professional Career: Data/Business Analyst since 2014 in Portland, Oregon area
  - o Companies:
    - Qmedtrix/Mitchell International
    - Fisher Investments
    - Columbia Sportswear Company
  - Currently developing computer vision/image recognition model for Portlandbased startup

Mitzi M. Montoya, PhD.

Sara Hart Kimball Dean

College of Business

Oregon State University

#### Dean Montoya,

This letter is to offer my full support and endorsement of the proposed BS degree in Business Analytics. Companies are collecting huge volumes of data about their customers, operations, products and services, and performance. Graduates who can analyze and interpret this data are vitally important within the rapidly changing and competitive global economy in which businesses now operate.

Companies, like ours, use business analytics to make data-driven decisions. This allows us to automate and optimize our business processes, especially in areas such as market research, human resources, supply chain, procurement, any basic business process. Having individuals skilled in Business Analytics is vitally important for all companies that create products or services.

I completed the OSU graduate program in business analytics. This program provided both the analytical skills and the business context that I need to perform my current role as an Analytics Manager at Nike in the Global Procurement department. Replicating this graduate program at the undergraduate level will produce graduates prepared for entry-level analytics positions and who will be in high demand.

At Nike we have plenty of people that understand just the technical details. We also have plenty of people that understand just the business side of things. But one very important skill set that is hard to find is a person that understand both the business and technical details. Business analytics is the ideal blend of the art and science of analytics. The proposed program would create individuals that understand the technical details of analytics and how to turn that into immense value and strategic insights for the business. Individuals with business analytics backgrounds bridge the big gap between the analytics analysts and the business stakeholders.

I am excited to see my alma mater taking the initiative to create such a much-needed degree program.

Sincerely,

Perren Baker

**Analytics Manager** 

rend Belin

Global Procurement

Nike



## **ACCESSIBILITY**

## New Program Proposal (Degree or Certificate) Guidelines for Addressing Accessibility

Sections 503 and 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990 (ADA), as amended by the ADA Amendments Act of 2008 prohibits discrimination on the basis of disability. The Rehabilitation Act and the ADA require that no qualified person shall, solely by reason of disability, be denied access to, participation in, or the benefits of, any program or activity operated by the University. Each qualified person shall receive the reasonable accommodations needed to ensure equal access to employment, educational opportunities, programs, and activities in the most integrated setting feasible.

For questions and assistance with addressing access, please contact: the Office of Disability and Access Services (737-4098), or the Office of Affirmative Action and Equal Opportunity (737-3556).

Γitle of Proposal:		Date:
Bachelor's of Arts/Bachelor's of Science in Business Analytics	1	1/16/2019
School/Department/Program:	College:	
N/A	Business	
Accessibility ( <a href="http://oregonstate.edu">http://oregonstate.edu</a> Faculty Guidelines ( <a href="http://ds.oregon">http://ds.oregon</a> Information Technology Guidelines  By signing this form, we affirm that at we will apply a good faith effort to ensure a and supporting information.  Sign (School/Department/Program Director/Charter)  James R Coakley  Print (School/Department/Program Director/Charter)	state.edu/facultyguid (http://oregonstate.e /e have reviewed th accessibility in curr	delines) du/accessibility/ITpolicy) ne listed documents and

Source: Office of Academic Programs, Assessment, and Accreditation (glb/ch; 4-26-16)

## OSU Libraries Collection Development

## Library Evaluation for Category I Proposal

Business Analytics	
·	
•	
on development in the pertinen ons and services can support the resent collections and services	e proposal. Based on this
udget needs below) sal	
tions or services to support the	proposal (details are
Ongoing (annual):	
Date Completed: 02/11/20	19
Saufurt Signature	
Kui Sall Signature	2/11/19 Date
Fy.All. Signature	2/11/19 Date
	on development in the pertinent ons and services can support the resent collections and services adget needs below) sal dions or services to support the Ongoing (annual):  Date Completed: 02/11/20  Add Add Signature  Kulled Signature  Fall Add Add Signature  Fall Add Add Signature  Fall Add Add Signature

## Oregon State University Libraries Evaluation of the Collection Supporting a Proposal to Initiate a Bachelor of Arts/Bachelor Science Program in Business Analytics

This Oregon State University Libraries and Press (OSULP) assessment reviews the print monographic, e-book, and electronic serials collections needed to support the proposed Business Analytics program. As stated in the Cat 1 proposal, this program will offer specializations in specializations in Human Resource Analytics, Market Research and Consumer Analytics, and Digital Marketing Analytics. The proposed program will include existing undergraduate courses and undergraduate variants of existing graduate-level courses.

A library assessment for the Graduate Certificate in Business Analytics was completed in 2014, and OSULP collections and services were determined to be adequate to support the certificate. The 2016 library assessment is attached as Appendix A.

As OSULP is already supporting the existing undergraduate and graduate courses, the collections and services are adequate to support the proposed program.

## OSU Libraries Collection Development

## Library Evaluation for Category I Proposal

Graduate Certificate in Business Analytics Title of Proposal		<del></del>
N/A		
Department		
Business	·	
College	·	
The subject librarian responsible for collecting assessed whether the existing library collecting review, the subject librarian concludes that p	ons and services can support th	e proposal. Based on this
[ ] inadequate to support the proposal (see [ ] marginally adequate to support the prop [ x ] adequate to support the proposal		
Estimated funding needed to upgrade collecatached)	ctions or services to support the	proposal (details are
Year 1:	Ongoing (annual):	
Comments and Recommendations:		
Date Received: <u>10/13/14</u>	Date Completed:10/28/	14
Laurel Kristick		
Collection Assessment Librarian	Signature	
Kerri Goergen-Doll		
Head of Collections & Resource Sharing	Signature	Date
Faye Chadwell		
University Librarian	Signature	Date

#### Oregon State University Libraries Evaluation of the Collection supporting a Proposal to Initiate a Graduate Certificate program in Business Analytics

This Oregon State University Libraries' (OSUL) assessment reviews the print monographic, e-book, and electronic serials collections as related to the information needed to support the proposed business analytics certificate program. This proposed program uses existing courses within the MBA degree.

**Summary of Recommendations** 

The most recent library review for MBA programs was the 2011 review for the proposed Master of Business Administration and Accounting (MBAA). The serials and monograph collections were determined to be adequate for the proposed program.

For this proposed graduate certificate, both the monographic and journal collections appear to be adequate to support the program.

Print Monographs and E-Books

Library evaluations of proposed programs have traditionally included the analysis of OSUL's print monograph collection. Comparing the monograph collection with other universities' collections is routine.

Comparing OSUL holdings to University of Washington shows that OSUL has approximately 20% fewer monographs in the key subject areas. However, the Libraries' investment to the Orbis Cascades Alliance provides students and faculty with access to the collections of all the libraries in the Alliance, including the University of Washington, through the Summit Catalog. The Alliance has 18,000 books and videos in the key subject areas. Items requested through Summit are delivered to OSUL within three to five working days.

Table 1. Subject Headings for Business Analytics Comparison
Big data
Business Intelligence
Business planning
Data mining
Data warehousing
Decision making
Information visualization
Knowledge management
Management information systems
Strategic planning
Web usage mining

Table 2. Peer Institution Comparison	Total Monographs
Oregon State University	6,478
University of Washington	8,157
Orbis Cascades Alliance	18,202

The growing availability of e-books makes it possible to expedite access to more information from various locations. This obviously better serves our distance learners and is a convenience for our oncampus students and faculty. Users have access to most titles at any time through their computers, tablets and mobile devices. OSUL currently has 2,477 e-books in the relevant subject areas. Of particular note is the Morgan & Claypool Synthesis Library, a collection of 50- to 100-page e-books that synthesize an important research or development topic, authored by a prominent contributor to the field. While these e-books are primarily in engineering, series include Technology, Management, & Entrepreneurship; Data Mining & Knowledge Discovery; Human-Centered Informatics; Information Concepts, Retrieval, & Services; and Visualization.

Serials/Journals

In business, ready access to current information is expected. The OSUL maintain a satisfactory collection of journals appropriate for the field of business analytics. There is concern that with regular price increases to our licenses and a flat budget that access may be eroded over time. The OSUL already have sacrificed timely access to some titles in favor of an embargo period to cut costs. We identified 24 titles indexed in the Web of Science of possible interest to those involved in the proposed program (Table 3). We indicate those titles that we have current access to, those with embargoes on the most current issues, and those not owned by the OSUL. OSUL has current subscriptions to 12 of the titles, embargoed access to additional three titles, and historical access to one title canceled in 2009.

Table 3 – Core Journals

Journal Title	ISSN	Impact Factor	OSU Holdings
ACM SIGMIS DATA BASE	0095-0033	0.056	1969-present
European journal of information systems	0960-085X	1.654	N/A
Information & management	0378-7206	1.788	1995-present
Information and organization	1471-7727	2.538	2001-present
Information economics and policy	0167-6245	0.588	N/A
Information processing & management	0306-4573	1.069	1995-present
Information research	1368-1613	0.66	1995-present
Information systems and e-business management	1617-9846	0.348	N/A
Information systems journal	1350-1917	1.333	1998-1 year ago
Information systems research	1047-7047	2.322	1990-5 years ago
Information technology and management	1385-951X	0.897	2000-2009
Information technology and people	0959-3845	0.938	N/A
Information technology for development	0268-1102	0.421	1996-18 months ago

Journal Title	ISSN	Impact Factor	OSU Holdings
International journal of information			
management	0268-4012	2.042	N/A
International journal of strategic property management	1648-715X	1.423	2006-present
Journal of global information management	1062-7375	0.483	1999-present
Journal of global information technology management	1097-198X	0.5	N/A
Journal of management information systems	0742-1222	1.925	1984-present
Journal of strategic information systems	0963-8687	2.571	1995-present
Journal of the Association for Information System	1536-9323	1.25	2003-present
Strategic entrepreneurship journal	1932-4391	1.744	N/A
Strategic management journal	0143-2095	2.993	1980-present
Strategic organization	1476-1270	1.853	2003-present
Technology analysis & strategic management	0953-7325	0.841	N/A

In the past 2 years, there have been fewer than 5 Interlibrary Loan (ILL) requests per year for the titles OSUL does not subscribe to or has delayed access to. We recommend monitoring usage of ILL to determine if there are sufficient requests to justify licensing of additional content.

### **Indexes and Databases**

The core indexes for this program are in Business Source Premier (produced by Ebsco) and Business OneFile (produced by Gale). In addition, OSUL subscribes to the ACM Digital Library and the IEEE Electronic Library, which have relevant journals for business analytics. The OSUL maintain access to all as these are core to multiple research areas at OSU.

# Key Library Services & Librarian Expertise

The Primary Contact for the College of Business is Valery King. In that capacity, she coordinates instruction as requested either in-class or via the web, responds to reference inquiries, develops the journal and monograph collection, and creates materials to assist faculty members and students in their research.

Providing access to items not owned by OSUL is the domain of the Interlibrary Loan and Summit staff both at OSUL and at lending libraries. Print articles located in the OSU Libraries collections may be requested via the Scan and Deliver service, which provides PDFs of the requested articles. Additional services for students include the physical attributes of the libraries including excellent computer facilities, study areas for individual and group work, and practice rooms for students.

Respectfully submitted, Laurel Kristick Collection Assessment and Science Librarian October 28, 2014 Faculty CV's are available upon request.

This assessment plan and report template has multiple tabs. Be sure to open your window wide enough to see the tabs.

### What this assessment plan and report are asking for:

- >>> This report is asking for a clear, succinct accounting of full-cycle assessment activities for each degree program. This means the program needs to engage in and report the following:
  - >> Each degree program must have clear, measurable student learning outcomes that represent the knowledge, skills, and values a graduating student will possess.
    - > The outcomes need to be meaningful to the faculty and other professionals in the field and represent what OSU students need to succeed and be valued in the field.
    - > The outcomes will likely have sub-components that help further define the outcome. If you develop sub-components, those can be submitted as an attachment to the report. For this report you can just list the primary outcome.
  - >> Each year one or more of the program outcomes must be in some stage of the assessment cycle (data collection, review/consideration of the data, implementation of changes as a result of the data) such that ALL outcomes have been assessed and reported in a period of 5 years.
    - > A plan must be in place to measure all outcomes within 5 years. A plan is built into this annual assessment report under questions 3.c. and 5. Separate, detailed plans are encouraged.
    - > A cycle of fewer than 5 years is fine. If the program has fewer than 5 outcomes, it will be on a shorter cycle (e.g. 4 outcomes = 4 or fewer years).
    - > If the program has >10 different outcomes and needs a longer cycle, please contact the APAA to develop an alternative plan. We are glad to work with you.
    - > If programs are in the developmental phases for program-level assessment and/or have new learning outcomes, start with assessing FEWER outcomes and ASSESS THEM WELL! Please communicate with the APAA if this is the case or if you want some help with designing an efficient assessment plan.
  - >> Each outcome must have at least one direct measure identified and aligned to it, but more than one measure is best practice and far more reliable.
    - > Indirect measures can be used to support or triangulate the data from the direct measures.
    - > In some cases indirect measures are the primary means of data collection. This is the exception rather than the rule. If indirect measures are the sole source of data, then please provide an explanation for its selection.
  - >> Use the student learning data to inform programmatic decision-making to maximize student learning and improve the strength, effectiveness, and efficiency of the program.
    - > You will be asked to describe the process your unit uses/d to reflect upon the data, how results of assessment efforts relate to strategic planning, and plans for any course, curricular, or unit level changes based upon the data.

## Why are we asking for this?

- >>> The number one reason we are asking for this information is to ensure the use of evidence and data to inform curricula and pedagogy.
  - >> Just as in our scholarly and creative work, evidence and data are essential supplements to the professional competence and commitment that we dedicate to our students.
  - >> Additional reasons, which should be compelling to educators and members of the academic community, are that we owe it to the the students and we must demonstrate genuine, full cycle assessment to our accrediting body, the NWCCU. Remember, accreditation is voluntary but necessary.

# How the annual report submission and the associated tracking and submission process works:

- >>> By switching to an Excel spreadsheet format your program can report multiple years of data in one document. Just use a new tab for a new year and label the tab.
- >>> Submit reports to the APAA Sharepoint website: https://sharepoint.oregonstate.edu/sites/APAA/assessment/default.aspx
  - >> Instructions can be found at: http://oregonstate.edu/admin/aa/apaa/assessment-resources



## **Learning Outcomes:**

- 1. An entrepreneurial perspective: Students will identify, assess, and shape entrepreneurial opportunities
- 2. Professional communication and behavioral skills: Students will demonstrate effective communicatio
- 3. An ethical and social responsibility perspective: Students will understand business ethics and issues o
- 4. Analytical and problem solving skills: Students will demonstrate problem solving skills supported by a
- 5. A broad knowledge of the functional areas of business and an understanding of the diverse contexts

Outcor	me # ⇒	1. Entrepreneurial Perspective			. Profession		3. Ethical/	
Course	Course							
prefix	ID	1.1	1.2	1.3	2.1	2.2	2.3	3.1
BA	160-162	1			1			1
BA	211							
BA	213	1	R					
BA	230	1	R		1	l		2
BA	281-284				3	Е		
BA	260	2	Е					
BA	270							
BA	275							
Comm					1	E		
Math								
Writing					1	Е		
Econ								
BA	347	1	R					
BA	352				2	R		
BA	354				2	R		3
BA	357							
BA	360							
BA	375							
BA	370							
BA	390							
ВА	466	3	Е		3	R		3

es in a variety of contexts.

n and professional behavioral skills in business settings.

f social responsibility.

ppropriate analytical and quantitative techniques.

of business.

	5. Broad Knowledge		. Analytical Problem Solving		4. Analyt	cial Responsibility		
	5.3	5.2	5.1	4.3	4.2	4.1	3.3	3.2
B-Engaged		l	1		l	1		l
Financial A		R	2		R	2		
Manageria		Е	2		Е	2		
Business La		E	2	<b>.</b>	R	1		R
Profession						***************************************		
Entreprene								
Business P		E	2		E	2		
Statistical I	 				Е	2		
					E	1		
(				<b>.</b>				
					Е	1		
Internation								
Managing		E	2					
Ethics and								E
Operations		E	2		Е	2		
Finance		E	3		Е	2		
Applied Qι					Е	3		
Informatio		Е	3					
Marketing		Е	3					
Strategic E	i i i i i i i i i i i i i i i i i i i	E	3					R

accounting
Accounting
w (233 -333)
al Development (253 - 353)
urship
ocesses
nference

al Business nd. & Team Performance Corporate Responsibility

antitative Methods 1 Systems

(perience

Program Information	
Program:	Business Core - part of every COB business major progra
College or Administrative Division:	College of Business
Subunit(s):	N/A

How will you communicate program level student learning or student success-re

Learning outcomes are listed on the College of Business website available to students and the general

Program Learning Outcomes, Benchmarks and Measu	res
Outcomes: List your program level student learning (SLO) outcome(s).	1.1. Recognize entrepreneurial opportunities for new business ventures and evaluate their potential for business success
What year was this outcome developed or most recently changed?	
What year will you be reporting on this outcome?	2017-18
Assessment Method: List the measures/methods /instruments	BA 260: Assessment
used to assess the outcome. How do students demonstrate their	methodology is under
attainment of this outcome and how is their learning evaluated?	development for the Spring 2018 term, in part to allow for comparable assessment of
Assessment Method: Are the measure(s)/methods/instruments direct (D) or indirect (I)?	Direct
Assessment Method: What benchmarks or indicators of success are	80% of the students will
you using to determine if the outcome has been satisfactorily met by the students?	meet/exceed expectations
Process	

Process	
How will your unit reflect on the data you are reporting and who	The data are collected by instruc
was involved? How are the results of your assessment efforts	the level that is expected, the co
related to strategic planning and overall program review?	are based on feedback received
	strategic goals is reflected in incr
What data are you archiving? Where and how? How long do you	Review templates including mee
expect to archive the data?	the college for documentation ir

am

# elated outcomes to the students and the public?

I public.

1.2. Understand the implementation issues including financial, legal, operational and administrative procedures involved in starting new business ventures

2.1. Communicate effectively and professionally in business situations through physical or virtual presence, writing, speaking, listening and electronic media.

2017-18

Assessment methodology is under development for the Spring 2018 term (BA260 and BA230), in part to allow for comparable assessment for online students.

2017-18

BA 281 - BA284; BA466. Significant course redesign is underway which will impact assessment methodology.

Direct

Direct

80% of the students will meet/exceed expectations

80% of the students will meet/exceed expectations

tors and course coordinators of the relevant course. This data is then passed on to the a surse coordinator, assistant dean and the undergraduate program committee will furthe from our external stakeholders. Periodically, these stakeholders are asked to review the easing efforts to comparably assess across delivery modes (inclass or online) and location

ts expectations, improvement suggestions, and follow up observations as well as back  $u_{\parallel}$  support of AACSB accreditation efforts.

2.2. Demonstrate the ability to lead by using team building skills and facilitating collaborative behaviors in the accomplishment of group goals and objectives.	good work habits,	3.1. Recognize basic concepts and theories related to business ethics and social responsibility.	3.2. Demonstrate knowledge of the ethical behavior appropriate to specific business situations.
2017-18 Ongoing in BA466; Individual and team case, interview presentation in BA352.  Direct	2017-18 Direct: Weekly journals in BA352, assessment of daily planner activity in BA160. Direct	2017-18  New course BA354 is piloting assessment of exam questions and writing assignments for this LO Spring 2018.  Direct	2017-18  New course BA354 is piloting assessment of exam questions and writing assignments for this LO Spring 2018.  Direct
80% of the students will meet/exceed expectations	80% of the students will meet/exceed	80% of the students will meet/exceed expectations	80% of the students will meet/exceed expectations

ssistant dean for accreditation and assurance of learning. If there are areas of weakness of if learning is not to er review the data and suggest a course of action. All learning outcomes are based on the mission of the COB and learning outcomes. Expansion of our online and geographically distributed course delivery in pursuit of our

p documentation including questions, rubrics, and samples are prepared by course coordinators and saved by

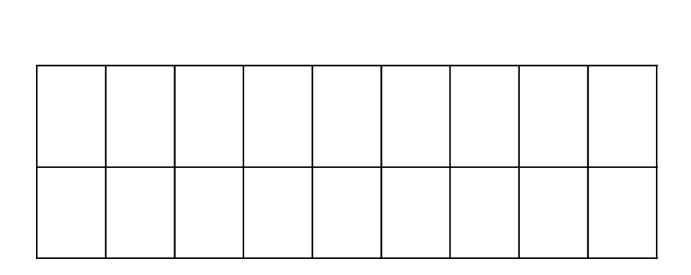
ns (Corvallis and Bend). 2

4.1. Identify and analyze business problems and opportunities and formulate recommendations for courses of action.	4.2. Use quantitative and qualitative tools and methodologies to support organizational decision making.	5.1. Demonstrate awareness of the global, economic, environmental, political, ethical, legal and regulatory contexts of business practice.
2017-18  Multiple courses: BA 211 - exam questions, case project cash flow and ratio analysis. BA 333 - final exam questions. BA 375 - exam questions.  Direct	2017-18  Multiple courses: BA 213: midterm and final exam questions, BA 302, BA 357: midterm and final exam questions, BA 360, BA 376: TBD Direct	2017-18 BA 333: question on quiz; migrating to the new course BA230; Writing assignments and exam quetsions in new course BA354 to be collected Direct
80% of the students will meet/exceed expectations	80% of the students will meet/exceed expectations	80% of the students will meet/exceed expectations

5.2.1. Assess how organizations create value in their global supply chains through the integrated production and distribution of goods, services, and information.	5.2.2. Describe the concept of competitive advantage and how it may be achieved through strategic and tactical methods.	5.2.3. Analyze the information content of organizational processes.
2017-18 BA 357 - final exam questions, simulation questions, integrated project; BA302 (BA270) Final, Midterm, Project  Direct	2017-18 BA357 Corvallis Project and Midterm/Final Questions; BA466 Corvallis Overall Class Evalutaion Direct	2017-18 Revamp assessment tool to more broadly address this LO in future years in Direct
80% of the students will meet/exceed expectations	80% of the students will meet/exceed expectations	80% of the students will
		meet/exceed

5.2.4. Define markets and apply marketing concepts and principles using a customer focus to effectively sell products and services.	5.2.5. Recognize and appropriately respond to ethical, legal and strategic concerns relating to human resources and organizational management.	5.2.6. Apply accounting concepts and methods to interpret financial statements for evaluating the financial position and performance of organizations
2017-18 BA390 Corvallis presentation; BA390 Online question block	2017-18 BA333 Corvallis final exam questions; BA352 Case analysis score	2018-19 BA 213: midterm and final exam questions
Direct	Direct	Direct
80% of the students will meet/exceed expectations	80% of the students will meet/exceed expectations	80% of the students will meet/exceed expectations

5.2.7. Interpret and analyze accounting information for internal control, planning, performance evaluation, and coordination to continuously improve business processes  5.2.8. Make basic investment and financing decisions for a business using financial management concepts, and methods.
2018-19 2017-18
BA 213: midterm and final exam questions  BA 360: Set of midterm and final exam questions.
Direct Direct
80% of the students will meet/exceed 80% of the students will expectations meet/exceed expectations



Program Information				
Program:	This is the title of your	degree program	/program (for nor	
College or Administrative Division:		This is the College or Over Arching Administrative Division		
Subunit(s)		This is the subunit(s) [e.g. department(s)] that contain the pro		
Report Submitted By:	1,7 - 9	Type the name and position/role with the unit		
APAA Submission Cycle Due Date:	15-Apr	·		
,				
Program Outcomes Matched with	Measures and Resu	lts		
Outcomes: List your program level student	learning (SLO)	1.1 - Recognize	1.2 -	
outcome(s).		entrepreneurial	Understand the	
		opportunities	implementation	
		for new	issues including	
		business	financial, legal,	
Results: What do the data that result from	vou assessment	In four In four		
methods or processes show about student	•			
outcome? Describe any patterns or trends	_	94%, 79%, and	measures 84%, 85%, 84%, and	
meaningful or that highlight areas of conce	· ·		86% of students	
The dring are that making me are as or some	0. 5466655.	met or met or		
		avcoadad	avcoadad	
<b>Actions:</b> Describe any course-level (conten		More critical	N/A	
structural, etc.) changes that will result /ha		thinking		
current year's assessment of this outcome.	Include timelines.	emphasis is		
		called for, a		
<b>Actions:</b> Describe any program/degree leventh	ol (o.g. curricular	case study is to  Coursey  N/A  Coursey		
process, structural, etc.) changes related to		IN/A	Coursework in business law is	
resulted/will result from this year's assessn			moving to	
sources (i.e. external accreditors)	nent ana/or nom other		BA230.	
sources (he. external decreations)			<i>B</i> 71230.	
Full-Cycle impact: If this learning outcome		N/A	N/a	
previously and is being reported on again t				
have the changes incorporated (if any) had				
you have not yet assessed the results of the				
on previous results, please indicate the year	r you will revisit this			
outcome				

# Process

How did your unit reflect on the data you are reporting and who was involved? Were there any challenges or concerns? How are the results of your assessment efforts related to strategic planning and overall program review?	Course coordinators collect data fr
Are there specific data archiving notes for the outcome(s) you are reporting on in this report?	Review templates including meets questions, rubrics, and samples are efforts.
Plans	
Describe the unit's (or sub-units) assessment plans for the upcoming year.	We expect to continue to assess as

-academic units)

that contains the program

am (may not be applicable for some - write N/A)

2.1 -	4.1 - Identify	4.2 - Use	5.1 -	5.2.1 - Assess	5.2.2 - Describe
Communicate	and analyze	quantitative and	Demonstrate	how	the concept of
effectively and	business	qualitative tools	awareness of	organizations	competitive
professionally in	problems and	and	the global	create value in	advantage and
business	opportunities	methodologies	economic,	their global	how it may be
Various	Assessments in	BA302 Cascades Exam	BA333 Corvallis	BA357 reported	BA357 Corvallis
measures of	BA213 on	Questions two	essay 94%	only 40% of	Project and
achievement in	campus	measures: 78% meets expectations 95%	meets	students	Midterm/Final
different terms	reported of	meets expectations;	expectations	meeting	Questions: 100%
for BA353 and	students 88%	BA357 Corvallis	expectations	expecations -	meets
in DAAGG	mosting	midterm question		project and final	
N/A	Relevant	Relevant	N/A	Increased	N/A
	materials in the	materials in the		instructor time	
	new courese	new courese		was allocated to	
	BA375	BA375		helping students	
N/A	revamped for N/A	revamped for N/A	Increasing	better Preregs for	N/A
IN/ A	N/A	N/A	emphasis on	BA302 have	N/A
			ethics by AACSB		
			is driving	been changed.	
			expanded		
			coverage of this		
N/A	N/A	Analysis of data		More instructor	N/A
		from online		time to help	
		sections of		with projects	
		BA213 from 14-		has substantially	
		15 showed		improved	
		weak		student	
					•

om all instructo	rs in the course	e, and discusses	with Associate [	Dean for Unde	rgraduate Pr	ofessional D
		iggestions, and f				
e prepared by c	ourse coordinat	tors and saved b	y the college for	r documentation	on in suppor	t of AACSB a
, nor the schod	lo in the access	mont plan				
per the schedu	lle in the assess	sment plan.				
per the schedu	lle in the assess	sment plan.				
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per the schedu	lle in the assess	sment plan.				
per the schedu	lle in the assess	sment plan.				

5.2.3 -	5.2.4 -	5.2.6 -	5.2.7 -
Analyze	Define	Apply	Interpret
the	markets	accountin	and
informatio	and apply	g concepts	analyze
n content	${\sf marketing}$	and	accountin
of Students	6A3907*1	BAZ13dc	gazto
in Fall ans	Corvallis	eCampus	eCampus
	class	Question	Question
Spring met	presentati	block:	block:
expectatio	ons: 60%	85%	87%
nc at a	meets	meets	meets
N/A	Corvallis	N/A	N/A
	sections		
	are to		
	better		
	emphasize	_	
N/A	N/A	N/A	N/A

N/A	Improvem	Analysis of	Analysis of
	ent was	data from	data from
	reported	online	online
	in 17-18	sections	sections
	Corvallis	of BA213	of BA213
	sections.	from 14-	from 14-

opment.			
cluding			
ditation			
	·	·	 

Program Information	
Program:	This is the title of your
College or Administrative Division:	This is the College or O
Subunit(s)	This is the subunit(s) [e.g.
Report Submitted By:	Type the name and po:
APAA Submission Cycle Due Date:	15-Apr

# Program Outcomes Matched with Measures and Resu

**Outcomes:** List your program level student learning (SLO) outcome(s).

**Results:** What do the data that result from you assessment methods or processes show about student learning relative to this outcome? Describe any patterns or trends that you identified as meaningful or that highlight areas of concern or success.

**Actions:** Describe any course-level (content, pedagogical, structural, etc.) changes that will result /have resulted from the current year's assessment of this outcome. Include timelines.

**Actions:** Describe any program/degree level (e.g. curricular, process, structural, etc.) changes related to this outcome that have resulted/will result from this year's assessment and/or from other sources (i.e. external accreditors)

**Full-Cycle impact:** If this learning outcome has been assessed previously and is being reported on again this year, what impact have the changes incorporated (if any) had on student learning? If you have not yet assessed the results of the changes made based on previous results, please indicate the year you will revisit this outcome

## **Process**

How did your unit reflect on the data you are reporting and who was involved? Were there any challenges or concerns? How are the results of your assessment efforts related to strategic planning and overall program review?

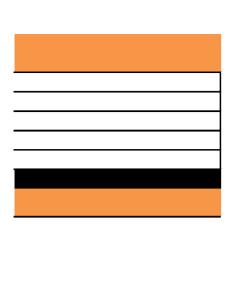
Are there specific data archiving notes for the outcome(s) you are reporting on in this report?

# Plans

Describe the unit's (or sub-units) assessment plans for the upcoming year.

degree program/program (for non-academic units)	
ver Arching Administrative Division that contains the program	
department(s)] that contain the program (may not be applicable for some - v	write N/A)
sition/role with the unit	
lts	
2.1. Communicate effectively and professionally in business situations through physical or virtual presence, writing, speaking, listening and electronic media.	2.2. Demonstrate the ability to lead by using team building skills and facilitating collaborative behaviors in the accomplishment of group goals and objectives.
31% of the students exceeded expectations and 64% of the students met expectations. This was based on assessments including questions from exams and from case study write-ups.	expectations and 82% of the students met expectations. This was based on excercises completed within the Competitive
A satisfactory percent of students met or exceeded expectations so no chnages are anticipated.	Capsim simulation. A satisfactory percent of students met or exceeded expectations so no chnages are anticipated.
N/A	N/A
N/A	N/A

The course coordinator for BA 466 (from which these assessments were collected this year) collects from all instructors in the course, and discusses with Associate Dean for Undergraduate Professional Development.
We expect to continue to assess as per the schedule in the assessment plan.





Program Information			
Program:	This is the title of vo	our degree program/program (for non-academic units)	
College or Administrative Division:		r Over Arching Administrative Division that contains the program	
Subunit(s)		[e.g. department(s)] that contain the program (may not be applicable for some - write N/A)	
Report Submitted By:		pe the name and position/role with the unit	
APAA Submission Cycle Due Date:	15-Apr		
<b>Program Outcomes Matched with</b>			
Outcomes: List your program level student	t learning (SLO)	5.2.8. Make basic investment and financing decisions for a business using financial management concepts,	2. Program level 3. Program level
outcome(s).		and methods.	student learning student learning
			outcome outcome
	•	85-87% of the students met or exceeded expectations.	
or processes show about student learning re			
Describe any patterns or trends that you ide	-	ur	
that highlight areas of concern or success.			
Actions: Describe any course-level (content	nt, pedagogical, structura	al, Although student performance met the benchmark for this learning outcome, it was determined that more	
etc.) changes that will result /have resulted			
assessment of this outcome. Include timelin	nes.	practices	
Actions: Describe any program/degree leve	rol (o.g. curricular proco	N/A	
structural, etc.) changes related to this outc		35, N/A	
resulted/will result from this year's assessm			
sources (i.e. external accreditors)	Hent and/or from other		
sources (i.e. external accreditors)			
Full-Cycle impact: If this learning outcome		N/A	
previously and is being reported on again th			
have the changes incorporated (if any) had			
you have not yet assessed the results of the		un en	
previous results, please indicate the year yo	ou will revisit this		
outcome			
Process			
	are reporting and who w	ras During the 2014-15 AY, the College of Business went through their five-year professional accreditation revie	
involved? Were there any challenges or con		(Association to Advance Collegiate Schools of Business, AACSB). As such, data collection and review was	

overall program review?

(Association to Advance Collegiate Schools of Business, AACSB). As such, data collection and review was results of your assessment efforts related to strategic planning and somewhat limited. The review process included the instructor and the Assistant Dean. This is atypical, with the process defined in the assessment plan used in other years. We expect to complete full-cycle impact on a number of the learning outcomes during the 2015-16 AY.

Are there specific data archiving notes for the outcome(s) you are

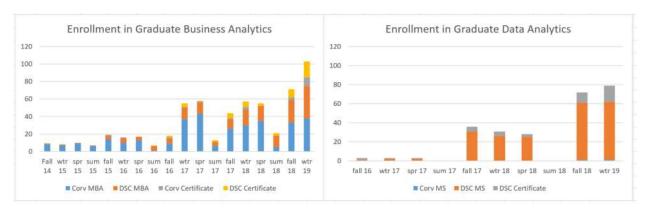
reporting on in this report?

Describe the unit's (or sub-units) assessment plans for the upcoming We expect to continue to assess as per the schedule in the assessment plan.

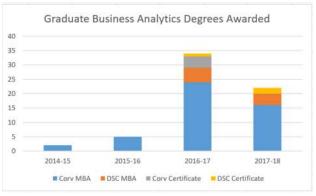
#### Additional Information regarding COE/COS concerns.

At the graduate level, there are both Business Analytics and Data Analytics degree programs. Business Analytics is an option within the MBA degree and is also offered as a separate Graduate Certificate, with both programs available on-campus and online. Data Analytics is a Master's of Science degree that is also offered as a separate Graduate Certificate. The Data Analytics programs are only available online.

Enrollment in both programs has grown steadily. For winter term, 2019, there are 103 students enrolled in the Business Analytics programs and 79 students enrolled in the Data Analytics programs. To date, 63 students have completed the MBA and Graduate Certificate programs in Business Analytics. While no one has yet completed the MS in Data Analytics, two students earned the Data Analytics graduate certificate in 2017-18.



The request from the Colleges of Engineering and Science to delay implementation of the business analytics degree until they develop an undergraduate "certificate" in data science will harm the university. Experience from the graduate programs shows there is sufficient demand for both types of degree programs. All schools that they cite as examples of data science/analytics programs also have business analytics programs offered by their business



schools. The graduate business program was implemented two years before the science program, and has already generated 63 graduates. Science is proposing an undergraduate certificate, not a degree program. Undergraduate students are seeking degrees, not certificates.

Note that is a difference between data science/analytics and business analytics. Individuals in these two related but distinct areas perform different duties and have different backgrounds. Business analytics combines analytical expertise, business acumen, and interpersonal abilities to solve business problems and improve business performance. The success of our graduate program lies in the integration of analytics with specific discipline knowledge.

Our proposal is to model an undergraduate degree after a highly successful graduate program, and focus the application of analytics into areas where there is huge interest by industry – human resources and marketing. We are proposing a degree program that applies analytics within a specific context.

# OSU BUDGET NARRATIVE BS in Business Analytics

## Personnel:

Figure 1 below shows the FTE required for each faculty rank as degree program courses are added. This figure explains the basis for the estimates of faculty personnel cost (rows 15 and 16) of the budget worksheet (Figure 2).

		al Expenses				
	Assist	Assoc	Full	Instr		
Year	\$ 136,215	\$ 153,477	\$ 154,776	\$ 65,924	Tot	tal
2019-20				0.17	\$	10,987
2020-21	0.40	0.20		0.17	\$	96,169
2021-22	0.40	0.80	0.20	0.67	\$	252,392
2022-23	0.40	0.80	0.20	0.67	\$	252,392
2023-24	0.40	0.80	0.20	0.67	\$	252,392
Year		On Line In	nstructional	Expenses		
2019-20					\$	-
2020-21	0.40	1.00		0.67	\$	252,132
2021-22	0.40	1.00		0.67	\$	252,132
2022-23	0.60	1.30	0.20	1.00	\$	378,129
2023-24	0.60	1.30	0.20	1.00	\$	378,129
Year	Fin	st-time First-	Year Instruct	tional Exper	ises	5
2019-20					\$	-
2020-21				0.25	\$	16,481
2021-22	0.80			0.75	\$	158,415
2022-23	0.80	0.60	0.20	1.50	\$	330,900
2023-24	0.80	0.80	0.20	1.50	\$	361,595

Figure 1. Tenure/Tenure-Track and Instructor Personnel Costs

	Recurring						
	Fiscal Year 1	Fiscal Year 2	Fiscal Year 3	Fiscal Year 4			
Personnel							
Faculty, Tenured/Tenure-track		293,144	525,158	752,441			
Faculty, fixed-term	10,987	71,638	137,782	208,980			
Sub-total, Faculty	10,987	364,782	662,940	961,421			

Figure 2. Personnel Expenses from Budget Worksheet

#### Support Staff:

In year 3, we add an additional online academic advisor: 1.0 FTE = \$45,000

#### OPE:

We use 43% for OPE, with increase of 1% per year

#### Other Expenses:

Library: (include supporting material from Library, and note if library expenses are one time or recurring)

None

#### Services and Supplies:

General Operating Costs: \$1000 per year for promotion and advertising expenses. Note that the College has a centralized marketing and communications function. The additional budget is to support printed materials for the new degree program.

Software licensing expenses: Starting in year 2, we will include \$30,000 per year for expanded VPN capabilities to support online students enrolled in this degree program.

**Resources**: Please identify and explain sources of all funds and highlight whether they are recurring or one time.

Source of funds will be tuition revenue plus differential tuition based on budget model. We project tuition to increase 4% per year. Figure 3 shows revenue for three categories of students: on campus students who switch to the major, online students, and incoming first-time, first-year students.

On Campus who Switch to Major: Based on the last three years, we expect to graduate approximately 120 students in AY 19-20 in the management and marketing majors. We estimate that 10 students from each major will select the new degree program, resulting in 20 graduates in the first year. Because these students are already pursuing degrees, the only new courses to be added are the undergraduate business analytics courses BA 474, BA 475, BA 476, BA 481 and the capstone courses MGMT 477 and MRKT 477, for a total of 16 credits. We currently have sufficient slack in our graduate course offerings to absorb these 20 students into BA 474, BA 475 and BA 476 using merged undergraduate/graduate slash courses. We also have sufficient slack on BA 481. We will add new sections of the management and marketing capstone project courses, MGMT 477 and MRKT 477.

In years 2-4, we project 20 new students will transfer into the college and select the major. These 20 students can currently be absorbed into the business core classes. New sections of the business analytics core classes and the discipline specific classes will be needed to accommodate the new students. We expect more students from existing management and marketing majors to transition to the new degree (15 to HR, 15 to digital marketing, 10 to market research).

Online Students: We expect ten of our current online students to select this new degree program. Since these are part-time students, they will not graduate from the program

until AY 20-21. In the first year, there is sufficient slack to absorb these students in our existing online classes. We project 25 new students will enroll in the online programs in year 2, and then 40 each year thereafter (15 in HR, 15 in digital marketing, 10 in market research). This will require the addition of new sections for each of the online courses in year 2.

<u>Incoming First-time</u>, <u>First-year Students</u>: We anticipate new first-time, first-year students to arrive on campus from high schools to pursue the major. We estimate 10 students per degree specialization (option). These students will complete the first, second and third year business core coursework. We currently have sufficient slack in our core classes to absorb these students without adding additional sections.

\$/SCH	\$	73	\$	3,935	Tuition		on Campus Revenue				
					Increase		Tuit	tion	Grad	Total	
Year	Enr	olled	Gra	duates	from base	Hrs Complete	Rev	enue	Bonus	Revenue	
2019-20		20		20	1.00	16	\$	23,232	\$ 78,700	\$101,932	
2020-21		60		38	1.04	44	\$	199,331	\$149,530	\$348,861	
2021-22		80		58	1.08	44	\$	276,405	\$228,230	\$504,635	
2022-23		80		58	1.12	44	\$	287,461	\$228,230	\$515,691	
2023-24		80		58	1.17	44	\$	298,960	\$228,230	\$527,190	
\$/SCH	\$	167	\$	3,935				On Line Re	venue		
7,2211	Ť		_	-,			Tuit	tion	Grad	Total	
Year	Enr	olled	Gra	duates		Hrs Complete	Rev	enue	Bonus	Revenue	
2019-20		10		0		24	\$	39,984	\$ -	\$ 39,984	
2020-21		35		9		44	\$	256,564	\$ 35,415	\$291,979	
2021-22		65		23		44	\$	476,476	\$ 90,505	\$566,981	
2022-23		80		36		44	\$	586,432	\$141,660	\$728,092	
2023-24		80		36		44	\$	586,432	\$141,660	\$728,092	
\$/SCH Lower Div	\$	150									
\$/SCH Upper Div	\$	73		3935			Fi	rst-time fir	st-year		
							Tuit	tion	Grad	Total	
Year	Enr	olled	Gra	duates		Hrs Complete	Rev	enue	Bonus	Revenue	
2019-20						0	\$	-	\$ -	\$ -	
2020-21		30				9	\$	20,386	\$ -	\$ 20,386	
2021-22		57				47	\$	210,366	\$ -	\$210,366	
2022-23		81				74	\$	491,314	\$ -	\$491,314	
2023-24		103		20		78	\$	683,468	\$ 78,700	\$762,168	

Figure 3. Sources of Revenue

# Finally: Show that Expenses = or are less than Resources

Year	2019-20	2020-21	2021-22	2022-23	Overall
Total cost of program	\$ 16,711	\$556,316	\$ 1,038,224	\$ 1,482,944	
Total resources	\$ 141,916	\$661,226	\$ 1,281,982	\$ 1,735,097	
Resources - Expenses	\$ 125,205	\$104,910	\$ 243,758	\$ 252,153	\$ 726,026

Figure 4. Expenses Compared to Revenues

# Four-year Program Plan for Business Analytics Major

	fall		Winter		Spring		
	Course	Credits	Course	Credits	Course	Credits	Total
	BA 160 B-Engaged	3	BA 161 Awareness to Action	3	BA 162 Ideas to Reality	3	
First Year	MTH 111 College Algebra	4	MTH 241 Calculus for Mgmt and SS	4	ECON 201 Intro to Microeconomics	4	
FIISt Year	WR 121 Enblish Composition	3	COMM 111 or 114 or 218	3	WR 222 English Composition	3	
	Bio Bac Core Lab Science	4	Phys Bac Core Lab Science	4	Bio/Phys Bac Core Lab Science	4	
			HHS 231 Lifetime Fitness	2	PAC	1	
		14		16		15	45
	ECON 202 Intro to Macroeconomics	4	BA 211 Financial Accounting	4	BA 213 Managerial Accounting	4	
Second	BA 260 Intro to Entrepreneurship	4	BA 275 Foundation of Statistics	4	BA 230 Business Law	4	
Year	BA 281 Professional Development	3	BA 283 PPL	1	BA 270 Business Process Mgmt	4	
	BA 282 PPL	1	BC: Western Culture	3	BA 284 PPL	1	
	BC: Literature & Arts	3	BC: Cultural Diversity	3	Elective	2	
		15		15		15	45
	BA 311 PPL	1	BA 312 PPL	1	BA 313 PPL	1	
Third	BA 223 Marketing	4	BA 240 Intro to Fin. Mgmt	4	BA 370 Bus Info Systems	4	
Year	BA 352 Managing Indv & Team Perf	4	BA 347 International Bus	4	BA 375 Applied Quant Methods	4	
	BA 357 Operations Mgt	4	BA 354 Managing Ethics	4	BC: Sci/Tech/Society	3	
	BC: Diff/Power?Disc.	3	BC: Cont global Issues	3	Elective	1	
		16		16		13	45
	BA 411 PPL	1	BA 412 PPL	1	BA 413 PPL	1	
Fourth	BA 466 Integ. Strat. Exper.	4	BA 474 Data Management	3	BA 476 Data & Tet Mining	3	
Year	BA 481 Into to Bus Analytics	4	BA 475 Data Explor. & Visual.	3	Mgmt/Mrkt 477 Capstone	3	
	Option 1	4	Option 3	4	Option 5	4	
	Option 2	4	Option 4	4	Elective	2	
		17		15		13	45



#### **Capital Planning and Development**

Oregon State University 3015 SW Western Blvd 106 Oak Creek Building Corvallis, Oregon 97331

P 541-737-5412 F 541-737-4810 cpd.oregonstate.edu

2/15/2019

James R. Coakley Senior Associate Dean College of Business Austin Hall Oregon State University Corvallis, OR 97331

#### Dear James,

We appreciate the opportunity to review the College of Business proposal to offer a new instructional program leading to a Bachelors in Business Analytics. Per our review of the documentation provided, we understand that the program will require no immediate additional space to accommodate new faculty, instructional, research, student support and administrative functions.

From the Cat 1 proposal the additional space that is needed for this program will be found within the school or department current space. Existing faculty will be used to teach the courses needed to attain this Bachelors in Business Analytics.

Given that your proposal outlines a strategy for accommodating all of the current space needs within existing space assigned to the College of Business, Capital Planning and Development supports this proposal.

Sincerely,

Libby Ramirez

University Architect/Manager, Capital Resources

Oregon State University

Hailey Muller

Space Analyst / Space Management

Vaily Mull

Oregon State University

Subject: New Undergraduate Degree Program in the College of Business

Colleagues,

The College of Business is proposing a new undergraduate degree in Business Analytics with options in Human Resource Analytics, Digital Marketing Analytics, and Market Research and Consumer Analytics. The degree program will add five new undergraduate courses that are equivalent to existing graduate courses. All remaining courses currently exist and are offered on-campus and online.

Because the new degree program relies entirely on existing courses, administration and infrastructure, they require no additional resources. Advising will be handled by our Undergraduate Academic Advising Office, and the program oversight and review will be included in the duties of the current Associate Dean for Undergraduate Student Development.

In accordance with the liaison criteria in the Curricular Procedures Handbook, this memo serves as notification to your college of our intent to offer this new degree program. Please have the appropriate people in your College review the proposal at URL

(https://secure.oregonstate.edu/ap/cps/proposals/view/106038) and send their comments, concerns, or support to <a href="mailto:Jim.Coakley@oregonstate.edu">Jim.Coakley@oregonstate.edu</a> by February 1, 2019. Your timely response is appreciated. Please note that a lack of response will be interpreted as support for this proposals.

Thank you for your time and input.

From: Williams, Tara

Sent: Thursday, January 17, 2019 6:16 PM

**To:** Coakley, James - COB

Cc: Doolen, Toni L

**Subject:** FW: New Undergraduate Degree Program in the College of Business

Hi Jim,

We've reviewed this proposal and don't have any concerns on the HC side; we're happy to support it.

Thanks, Tara

## <u>LinkedIn</u> | <u>Twitter</u> | <u>Website</u>

From: Bell, Randy Lee

Sent: Friday, January 18, 2019 9:37 AM

**To:** Coakley, James - COB

Cc: Doolen, Toni L

**Subject:** Support for Business Analytics program

Hi Jim,

Thank you for the opportunity to review your proposal for new undergraduate degree program in Business Analytics. I agree that the three options that comprise the program will help prepare students to address the increasing analytics needs that businesses and corporations are experiencing. The proposed degree program has very little overlap/impact with those of the College of Education. We support your moving forward with the proposed program.

Randy L. Bell Associate Dean/Professor Oregon State University College of Education 201B Furman Hall Corvallis, OR 97331 Ph. (541) 737-6387

From: Rosenberger, Randall

Sent: Thursday, January 31, 2019 2:00 PM

**To:** Coakley, James - COB **Cc:** Davis, Anthony S

**Subject:** COF RE: New Undergraduate Degree Program in the College of Business

Hi Jim,

I am providing input on behalf of the College of Forestry. I spoke with a few key individuals in the college, and our consensus is that this will be a great new UG degree program. Business Analytics will serve a key need for many businesses and organizations whose demand for such skills will be sustained over time. The abundance of data and skills needed to work with 'big data' is paralleled in the social and natural sciences.. We think the BA/BS Data Analytics will be a great addition to COB and OSU, and will produce highly valued and sought after graduates.

Sincerely, Randy

\*\*\*\*\*\*\*\*\*\*

Randall S. Rosenberger, PhD Associate Dean – Student Success

Mail: 140 Peavy Hall Office: 415 Snell Hall College of Forestry Oregon State University Corvallis, OR 97331

e-mail: R.Rosenberger@oregonstate.edu

Phone: 541-737-4425

http://studentservices.forestry.oregonstate.edu/

\*\*\*\*\*\*\*\*\*\*

From: "Montoya, Mitzi M - COB" < Mitzi. Montoya@oregonstate.edu>

Date: Thursday, January 17, 2019 at 1:45 PM

To: "Sams, Alan" <alan.sams@oregonstate.edu>, "Davis, Anthony S" <anthony.davis@oregonstate.edu>,

"Marinelli, Roberta L" <roberta.marinelli@oregonstate.edu>, "Doolen, Toni L"

<toni.doolen@oregonstate.edu>, "Rodgers, Lawrence" <Larry.Rodgers@oregonstate.edu>, "Leid, Mark"

<mark.leid@oregonstate.edu>, "Nieto, Javier" <javier.nieto@oregonstate.edu>, "Haggerty, Roy"

<Roy.Haggerty@oregonstate.edu>, "Tornquist, Susan" <Susan.Tornquist@oregonstate.edu>, "Ashford, Scott

Alan" <Scott.Ashford@oregonstate.edu>

Cc: "Coakley, James - COB" < Jim.Coakley@bus.oregonstate.edu>

Subject: New Undergraduate Degree Program in the College of Business

Colleagues,

The College of Business is proposing a new undergraduate degree in Business Analytics with options in Human Resource Analytics, Digital Marketing Analytics, and Market Research and Consumer Analytics. The degree program will add five new undergraduate courses that are equivalent to existing graduate courses. All remaining courses currently exist and are offered on-campus and online.

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Thank you for your time and input.

Mitzi

Mitzi M. Montoya, PhD Sara Hart Kimball Dean Oregon State University | College of Business | 541-737-6024 LinkedIn | Twitter | Website

From: Montoya, Mitzi M - COB

**Sent:** Friday, February 1, 2019 6:06 PM **To:** Haggerty, Roy; Coakley, James - COB

Cc: Ashford, Scott Alan; Jensen, Carlos; Jansen, Henri Johan F

**Subject:** RE: New Undergraduate Degree Program in the College of Business

#### Roy and Scott -

Thanks for your email. Regarding the list of data science programs at MIT, Stanford and UW, I did a quick search of these universities and discovered that each of them also has business analytics courses, certificates and degrees. I expanded your search to include some of our peers -- NC State University, Arizona State University, Iowa State University, Virginia Tech, Colorado State University -- and I found the same thing. All of our peer schools have data science and business analytics programs. This makes sense given that data science and business analytics programs are different, they serve different students and the graduates pursue different jobs. As you may recall, COB is not opposed to COE/COS developing data science programs or courses. COB supported COE/COS' graduate data science program which was proposed and launched after COB's graduate business analytics program. If COE/COS would like to pursue undergraduate data science programs, we are happy to help you succeed in that. As noted in the list of universities above, there are many good models out there to follow for data science programs.

The COB proposal is for a business degree that uses existing COB courses and resources. We would be happy to consider any existing, accessible and related courses in COS/COE that you would like us to evaluate for fit in relation to our program goals and intended target market. We are available to meet and review syllabi next week. In the event there are not any existing, accessible and related courses, we are open to the idea of including future courses in COE/COS whenever they are developed.

Data Science programs are timely and in high demand. We are happy to support your development of these programs. Business Analytics programs are also timely and in high demand. COB is working hard to be responsive to market in order to help OSU grow enrollment. We look forward to receiving details from you regarding which specific courses you would like us to evaluate so we can move our proposal forward.

Sincerely – Mitzi

Mitzi M. Montoya, PhD
Sara Hart Kimball Dean
Oregon State University | College of Business | 541-737-6024
LinkedIn | Twitter | Website

From: Haggerty, Roy

Sent: Friday, February 01, 2019 4:01 PM

To: Montoya, Mitzi M - COB < Mitzi. Montoya@oregonstate.edu >; Coakley, James - COB

<Jim.Coakley@bus.oregonstate.edu>

Cc: Ashford, Scott Alan <Scott.Ashford@oregonstate.edu>; Jensen, Carlos <Carlos.Jensen@oregonstate.edu>; Jansen,

Henri Johan F < Henri Jansen@oregonstate.edu>

Subject: Re: New Undergraduate Degree Program in the College of Business

Sorry – forgot the attachment.

From: "Haggerty, Roy" <Roy.Haggerty@oregonstate.edu>

Date: Friday, February 1, 2019 at 3:59 PM

To: "Montoya, Mitzi M - COB" < Mitzi. Montoya@oregonstate.edu >, "Coakley, James - COB"

<Jim.Coakley@bus.oregonstate.edu>

Cc: "Ashford, Scott Alan" <Scott.Ashford@oregonstate.edu>, "Jensen, Carlos"

<Carlos.Jensen@oregonstate.edu>, "Jansen, Henri Johan F" <Henri.Jansen@oregonstate.edu>

Subject: Re: New Undergraduate Degree Program in the College of Business

Mitzi and Jim -

Thank you for circulating COB's proposal for a new undergraduate degree in Business Analytics. We support your goal of helping to meet the demand for students with skills and knowledge in business analytics. We think that you are correct that there is a significant demand and that this could be an area that would help to grow enrollment at OSU.

As you know, the field(s) of data science and data analytics are growing rapidly. Programs are in development or have been announced at several universities including UC Berkeley, MIT, and others. Business Analytics is closely related or overlapping with data science and data analytics. As you state in the overview, "Students will develop data analysis skills and learn how to interpret and communicate the resulting insights to maximize strategic value." The first part of this is data science/analytics, while the second is clearly business. The overview mentions data mining, data visualization, text mining, and advanced statistical tools and techniques. These are clearly data science/analytics.

Other colleges offer classes in data science and data analytics. The College of Engineering offers classes in computer programming and is planning to offer an introductory class in programming that is accessible to non-CS majors. Many faculty in Engineering consider their field to be data science and engineering (<a href="http://eecs.oregonstate.edu/data-science-and-engineering">http://eecs.oregonstate.edu/data-science-and-engineering</a>) and teach classes on these topics. The College of Science offers several important undergraduate classes in mathematics and statistics that are core classes within existing data science and data analytics programs at Berkeley, Stanford, and MIT – see attachment for a rundown of some of these. The Colleges of Science and Engineering are planning to offer an undergraduate certificate in data science that will be modeled after these and that is intended to be complementary to any major.

With this background, we respectfully submit two requests:

- 1. We request that COB work with the Colleges of Science and Engineering to incorporate existing courses possibly using the certificate we will propose as the technical/STEM "core" to the program.
- 2. We request that prior to submission of a Business Analytics proposal that the various Deans agree to a campuswide strategy for data science and analytics that maximizes the benefit to students and OSU as a whole.

On our part, we will work to make included courses accessible to Business and other majors. For example, College of Engineering will offer an introductory programming sequence for non-CS majors. The College of Science will continue work to improve the DFW rates and the pedagogy in its introductory statistics and mathematics courses so that more students are successful. For the few courses where prerequisites may cause an undue burden on COB students, our colleges pledge to work with you to alleviate that burden.

It is clear that the field of business analytics has the potential to be very successful at OSU. We would like to help you achieve that and to share that success with you and the rest of the university.

Sincerely, Roy Haggerty, Science Scott Ashford, Engineering From: "Montoya, Mitzi M - COB" < <u>Mitzi.Montoya@oregonstate.edu</u>>

Date: Thursday, January 17, 2019 at 1:45 PM

To: "Sams, Alan" < alan.sams@oregonstate.edu >, "Davis, Anthony S" < anthony.davis@oregonstate.edu >,

"Marinelli, Roberta L" <<u>roberta.marinelli@oregonstate.edu</u>>, "Doolen, Toni L"

<toni.doolen@oregonstate.edu>, "Rodgers, Lawrence" <<u>Larry.Rodgers@oregonstate.edu</u>>, "Leid, Mark"

<mark.leid@oregonstate.edu>, "Nieto, Javier" <javier.nieto@oregonstate.edu>, "Haggerty, Roy"

<<u>Roy.Haggerty@oregonstate.edu</u>>, "Tornquist, Susan" <<u>Susan.Tornquist@oregonstate.edu</u>>, "Ashford, Scott Alan" <<u>Scott.Ashford@oregonstate.edu</u>>

Cc: "Coakley, James - COB" < Jim.Coakley@bus.oregonstate.edu>

Subject: New Undergraduate Degree Program in the College of Business

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The College of Business is proposing a new undergraduate degree in Business Analytics with options in Human Resource Analytics, Digital Marketing Analytics, and Market Research and Consumer Analytics. The degree program will add five new undergraduate courses that are equivalent to existing graduate courses. All remaining courses currently exist and are offered on-campus and online.

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Thank you for your time and input.

Mitzi

Mitzi M. Montoya, PhD Sara Hart Kimball Dean Oregon State University | College of Business | 541-737-6024 LinkedIn | Twitter | Website

From: Ashford, Scott Alan

**Sent:** Friday, February 15, 2019 12:38 PM

**To:** Coakley, James - COB

Cc: Jensen, Carlos; Montoya, Mitzi M - COB; Gitelman, Alix I; Haggerty, Roy; Jansen, Henri

Johan F

**Subject:** Re: New Undergraduate Degree Program in the College of Business

Dear Jim and Mitzi,

Thank you for the interesting article.

Also, thank you for working with us and your renewed support of our Cybersecurity Certificate. Also, thank you for working with us on our Engineering Management Certificate.

It is clear that the current format of our CS courses do not meet the specialized needs of your proposed Business Analytics degree, so COE fully endorses your new degree as proposed.

We look forward to working with you on future projects.

All the best,

Scott

Scott Ashford Dean, College of Engineering

Sent from my iPhone

On Feb 15, 2019, at 10:11 AM, Coakley, James - COB < <u>Jim.Coakley@bus.oregonstate.edu</u>> wrote:

I am sending this on Dean Montoya's behalf as she is travelling this weekend on College business.

Scott and Roy -

Thanks for meeting with VPUA Alix Gitelman and me this week to discuss the proposed Business Analytics degree. I'm attaching the link to the Harvard Business Review article that I mentioned when we met. It's a great summary of the differences between Business Analytics and Data Science. I hope you find it interesting. (see URL <a href="https://hbr.org/2019/02/how-to-train-someone-to-translate-business-problems-into-analytics-">https://hbr.org/2019/02/how-to-train-someone-to-translate-business-problems-into-analytics-</a>

<u>questions?utm\_medium=email&utm\_source=newsletter\_daily&utm\_campaign=dailyalert\_not\_activesu\_bs&referral=00563&deliveryName=DM27201</u>)

As we agreed, the College of Business will consider current and future courses that are equivalent and meet our learning objectives and do not increase the number of required courses beyond what we proposed for degree completion. We are particularly looking forward to partnerships with COE and COS that create accessible courses for our students and extend our faculty's expertise. Likewise, we look forward to including business courses within your proposed undergraduate certificate in data analytics and other future data science programs.

Thank you for your proposal and for the syllabus for CS 340. After comparing the syllabus of the two courses, our faculty do not believe the CS 340 course will meet the requirements of the business analytics degree program.

- First, the course descriptions of the two courses (included below) indicate that they have a different emphasis.
- Second, the CS 340 course requires programming knowledge as a prerequisite, thus adding an additional course and five credit hours to the business analytics degree.
- Third, the CS 340 course does not cover Hadoop and noSQL data management and analysis methods. With the follow-on text mining course in our Business Analytics program, an introduction to these concept is critical. Thus, using the CS 340 course would require us to revise our BA 476 course to cover those concepts, likely increasing that course from 3 credits to 4 credits. Thus, your proposal would add 9 credits of coursework to replace a 3 credit course. While it may be possible you will be able to adjust the content of CS 340 to accommodate the needs of the business analytics program, that would need to be resolved between the faculty before we can include it.
- Fourth, the business analytics degree program requires completion of an integrated project that starts in the fall with BA 481, continues as the project component of the winter courses BA 474 and BA 475, and cumulates in the spring in the MGMT 477 and MRKT 477 courses. While the CS 340 course does include a "project", it could be a challenge to ensure that project aligns with the three-term project within the business analytics degree program. This is especially a concern with the average class size of the online version of CS 340 approaching 200 students. While it may be possible you will be able to adjust the project in the CS 340 online class to accommodate the needs of the business analytics project, that would need to be resolved between the faculty before we can include it. The provided syllabus does not discuss weekly requirements and does not provide any information regarding the nature of the project.
- Fifth, the BA 474 course within the college will be delivered by academically qualified faculty with
  earned PhDs and an active research agenda in their field. The CS 340 course has been delivered by
  graduate students pursuing masters and doctoral degrees within CS. This would negatively affect our
  AACSB accreditation which includes mandatory ratios of teaching faculty with terminal degrees. While it
  may be possible you could adjust who is assigned to teach the CS 340 class to accommodate the needs
  of the business analytics program, that would need to be resolved with the School Head before we can
  include it.
- Sixth, over the last three years there has been wide variation in the GPA and DFW rates for the CS 340 class. The on-campus sections have an average GPA of 3.10, with variation from 2.60 to 3.42. The online average GPA is 3.47 with variation from 3.31 to 3.70. DFW rates for the on campus sections vary from 1.1% to 10%, while the online sections vary from 1.2% to 10%. We would need more information regarding these variations across sections before we would consider adding the course to our degree program. The College of Business actively monitors GPAs and DFW rates for AACSB accreditation reporting.

For the above reasons, we conclude that CS 340 is not an equivalent course for the proposed BA 474 course.

#### CS 340. INTRODUCTION TO DATABASES. (4 Credits)

Design and implementation of relational databases, including data modeling with ER or UML, diagrams, relational schema, SQL queries, relational algebra, user interfaces, and administration.

#### **BA 474. DATA MANAGEMENT. (3 Credits)**

Familiarize students with the major activities involved in collecting and managing data for a data analytics project, including extracting information from relational databases, mapping organizational requirements into a data design, transforming data into information, exploring data warehouse concepts, and exploring basic concepts underlying Hadoop and other noSQL data management and analysis methods

Best regards,

Mitzi M. Montoya

Dean, College of Business Oregon State University

From: Jensen, Carlos < Carlos. Jensen@oregonstate.edu>

Sent: Thursday, February 14, 2019 4:05 PM

**To:** Montoya, Mitzi M - COB < <a href="mailto:Mitzi.Montoya@oregonstate.edu">Mitzi M - COB < <a href="mailto:Mitzi.Montoya@oregonstate.edu">Mitzi M - COB < <a href="mailto:Mitzi.Montoya@oregonstate.edu">Mitzi.Montoya@oregonstate.edu</a>; Gitelman, Alix I < <a href="mailto:Alix.Gitelman@oregonstate.edu">Alix.Gitelman@oregonstate.edu</a>>

Cc: Ashford, Scott Alan <Scott.Ashford@oregonstate.edu>; Haggerty, Roy

<<u>Roy.Haggerty@oregonstate.edu</u>>; Jansen, Henri Johan F <<u>Henri.Jansen@oregonstate.edu</u>>

Subject: FW: New Undergraduate Degree Program in the College of Business

Sending this on behalf of Scott, as he's on the road.

Mitzi & Jim -

Thanks, Mitzi, for meeting with Scott, VPUA Alix Gitelman, and me this morning to discuss the proposed Business Analytics degree. As we said, we support the degree. In support of that spirit of collaboration, EECS has committed to changing the prerequisites for CS340 (Introduction to Databases) to accommodate your students. Currently the prerequisite is CS290, but we can support students having had a reasonable BA course (like BA272) that introduces them to basic programming/scripting concepts. We believe this course will support your student's needs (<a href="https://secure.oregonstate.edu/ap/cps/documents/view/116467">https://secure.oregonstate.edu/ap/cps/documents/view/116467</a>). The other 2 courses proposed do not currently have good equivalents in COE that would be accessible to your students. We all agreed that as Science and Engineering bring relevant coursework in data science into place — coursework that is accessible to business students and covers the same principles — that these courses could replace the proposed data science/analytics courses in the degree. We further agreed that these Science and Engineering courses need to be free of hidden prerequisites and be well taught.

With these agreements, we support the degree proposal.

Sincerely, Roy Haggerty, Science Scott Ashford, Engineering

# OSU Internal Budget Outline Form

#### Estimated Costs and Sources of Funds for Proposed Program

Total new resources allocated to the Proposed Program, if any.

If no change in resources is required, the budgetary impact should be reported as zero.

PROGRAM TITLE: BA/BS in Business Analytics

BUDGET PERIOD: From FY 2019-2020 to FY 2022-2023

Business Center BEBC Date 2/12/2019

Name and Title of Reviewer Corina Rampola Signature of Reviewer

	Finance and Accou		Signature of Kevie	/
		Total		\\ \( \frac{1}{2} \dots
	Fiscal Year 1	Fiscal Year 2	Fiscal Year 3	Fiscal Year 4
Personnel				
Faculty, Tenured/Tenure-track	-	293,144	525,158	752,441
Faculty, fixed-term	10,987	71,638	137,782	208,980
Sub-total, Faculty	10,987	364,782	662,940	961,421
Graduate Assistants	-	-	-	-
Support Staff	-	-	45,000	46,350
Fellowship/Scholarship	-	-	-	-
OPE	4,724	160,504	298,323	442,254
Personnel Subtotal	15,711	525,286	1,006,263	1,450,025
Other Expenses				
Library, Printed	-	-	-	-
Library, Electronic	-	-	-	-
Services & Supplies	1,000	1,030	1,061	1,093
Capital Equipment	-	30,000	30,900	31,827
Other Resources Subtotal	1,000	31,030	31,961	32,920
Physical Facilities	-	-	-	-
Construction	-	-	-	-
Major Renovation	-	-	-	-
Other Expenses	-	-	-	-
Physical Facilities Subtotal	-	-	-	-
Check math	-	-	-	-
Total Cost of Program	16,711	556,316	1,038,224	1,482,944
		-		
Resources				
Current Budget, unit	-	-	-	-
Tuition ( e campus, differential )	141,916	661,226	1,281,982	1,735,097
Institutional Reallocation from other b	-	-	-	-
Special State Appropriation	-	-	-	-
Federal Funds and other Grants	-	-	-	-
Fees/Sales	-	-	-	-
Foundation Endowment	-	-	-	-
Tuition remission ( GA support)	-	-	-	-
Other, describe:				
Total Deserve-	144.046	554 225	1 204 003	1 725 00'
Total Resources check math	<b>141,916</b> 141,916	<b>661,226</b> 661,226	<b>1,281,982</b> 1,281,982	<b>1,735,097</b> 1,735,097

Note: Please include budget narrative describing items listed above.

# OSU Internal Budget Outline Form

#### Estimated Costs and Sources of Funds for Proposed Program

Total new resources allocated to the Proposed Program, if any.

If no change in resources is required, the budgetary impact should be reported as zero.

PROGRAM TITLE: BA/BS in Business Analytics

BUDGET PERIOD: From FY 2019-2020 to FY 2022-2023

Business Center Date

Name and Title of Reviewer

ſ	One-Time					
	Fiscal Year 1	Fiscal Year 2	Fiscal Year 3	Fiscal Year 4		
Personnel						
Faculty, Tenured/Tenure-track						
Faculty, fixed-term						
Sub-total, Faculty	-	-	-	-		
Graduate Assistants						
Support Staff						
Fellowship/Scholarship						
OPE						
Personnel Subtotal	-	-	-	-		
Other Expenses						
Library, Printed						
Library, Electronic						
Services & Supplies						
Capital Equipment						
Other Resources Subtotal	-	-	-	-		
Physical Facilities						
Construction						
Major Renovation						
Other Expenses						
Physical Facilities Subtotal	-	-	-	-		
Total Cost of Program	-	-	-	-		
Resources						
Current Budget, unit						
Tuition ( e campus, differential )						
Institutional Reallocation from other b	udgetary units					
Special State Appropriation						
Federal Funds and other Grants						
Fees/Sales						
Foundation Endowment						
Tuition remission ( GA support)						
Other, describe:						
Total Resources	-	-	-	-		

Note: Please include budget narrative describing items listed above.

# OSU Internal Budget Outline Form

#### Estimated Costs and Sources of Funds for Proposed Program

Total new resources allocated to the Proposed Program, if any.

If no change in resources is required, the budgetary impact should be reported as zero.

PROGRAM TITLE: BA/BS in Business Analytics

BUDGET PERIOD: From FY 2019-2020 to FY 2022-2023

Business Center Date

Name and Title of Reviewer

	Recurring				
	Fiscal Year 1	Fiscal Year 2	Fiscal Year 3	Fiscal Year 4	
Personnel					
Faculty, Tenured/Tenure-track		293,144	525,158	752,441	
Faculty, fixed-term	10,987	71,638	137,782	208,980	
Sub-total, Faculty	10,987	364,782	662,940	961,421	
Graduate Assistants	-				
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Other Resources Subtotal	1,000	31,030	31,961	32,920	
Physical Facilities	-				
Construction	-				
Major Renovation	-				
Other Expenses	-				
Physical Facilities Subtotal	-	-	-	-	
Total Cost of Program	16,711	556,316	1,038,224	1,482,944	
Resources					
Current Budget, unit					
Tuition ( e campus, differential )	141,916	661,226	1,281,982	1,735,097	
Institutional Reallocation from other b	udgetary units				
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Foundation Endowment					
Tuition remission ( GA support)					
Other, describe:					
Total Resources	141,916	661,226	1,281,982	1,735,097	

Note: Please include budget narrative describing items listed above.