APPROVAL FORM FOR

DEGREE PROGRAMS

MISSISSIPPI STATE UNIVERSITY

NOTE: This form is a cover sheet that must accompany the degree program change proposal. The actual proposal should be prepared in accordance with format requirements provided in the *Guide and Format for Curriculum Proposals* published by the UCCC. Both cover sheet and proposal should be submitted to UCCC Mail Stop 9702 (281 Garner Hall), Phone: 325-9410.

College: Academic Affairs **Department:** Data Science Program

Contact Person: Lynn Taylor **Mail Stop:** 9545 **E-mail:** clj19@msstate.edu

Nature of Change: Add Sports Science Concentration and Update Business Information Systems Concentration **Date Initiated:** 4/11/2023 **Effective Date:** Fall 2023

Current Degree Program Name: Bachelor of Science

Major: Data Science **Concentrations**: **(1) Business Information Systems** (2) Computational Agriculture and Natural Resources (3) Computational Intelligence (4) Geoinformatics (5) Marketing and Supply Chain Analytics (6) Psychoinformatics (7) Social Data Analytics (8) Statistical Modeling (9) Visualization and Visual Analytics for Built Environment **(10) Sports Science**

New Degree Program Name: N/A **Concentration:** N/A
Major: N/A

Summary of Proposed Changes:
Two Bachelor of Science in Data Science program updates:
(1) Adding the Sports Science concentration (2) Updating the Business Information Systems concentration

Approved:	Date:
Mimmo Parisi Digitally signed by Mimmo Parisi Date: 2023.04.17 08:05:06 -05'00'	
Department Head	
Dana Pomykal Franz Digitally signed by Dana Pomykal Franz Date: 2023.04.17 10:57:56 -05'00'	
Director of Academic Quality	
Kimberly R. Hall Digitally signed by Kimberly R. Hall Date: 2023.04.17 13:31:01 -05'00'	
Chair, College or School Curriculum Committee	
Jamie Dyer Digitally signed by Jamie Dyer Date: 2023.04.17 13:35:00 -05'00'	
Dean of College or School	
Chair, University Committee on Courses and Curricula	
N/A	
Chair, Graduate Council (if applicable)	
Chair, Deans Council	

DEGREE MODIFICATION OUTLINE FORM

Use the chart below to make modifications to an existing undergraduate degree outline. If any General Education (Core) course is acceptable in the category, please indicate by saying "any Gen Ed course". There is no need to type in the whole list. All deleted courses and information should be shown in *italics* and all new courses and information in **bold**. Include the course prefix, number, and title in both columns. Expand this table as needed.

CURRENT Degree Description	PROPOSED Degree Description
Degree: Bachelor of Science Major: Data Science Concentration: 1. Visualization and Visual Analytics for Built Environment 2. Computational Agriculture and Natural Resources 3. Business Information Systems 4. Marketing and Supply Chain Analytics 5. Social Data Analytics 6. Psychoinformatics 7. Statistical Modeling 8. Computational Intelligence 9. Geoinformatics	Degree: Bachelor of Science Major: Data Science Concentration: 1. Visualization and Visual Analytics for Built Environment 2. Computational Agriculture and Natural Resources **3. Business Information Systems** 4. Marketing and Supply Chain Analytics 5. Social Data Analytics 6. Psychoinformatics 7. Statistical Modeling 8. Computational Intelligence 9. Geoinformatics **10. Sports Science**
The Bachelor of Science in Data Science is an interdisciplinary program that draws upon disciplines from multiple colleges. It is a 123-hour inter-college program designed to include three general areas of coursework: general education, program core, and applications of the data science fundamentals in specific body of knowledge such as geoinformatics, computational intelligence and cybersecurity, marketing, management information systems, statistical modeling, social science analytics, architectural design and built environment, and smart agriculture. The overall curriculum is designed to provide students with an ideal educational experience necessary to become effective professional data science experts. Under the proposed undergraduate curriculum, general education coursework will help data science students develop intellectual curiosity, critical thinking, and ethical and aesthetic awareness. The coursework for the core program will provide students with the opportunity to build a strong foundation in the key fields of data science that include computer science, mathematics and statistics, management information systems, communication, management / leadership, design, and ethics. The course sequences for several distinct areas of academic concentration will provide students with the opportunity to become data science experts in a specific area.	The Bachelor of Science in Data Science is an interdisciplinary program that draws upon disciplines from multiple colleges. It is a 123-hour inter-college program designed to include three general areas of coursework: general education, program core, and applications of the data science fundamentals in specific body of knowledge such as geoinformatics, computational intelligence and cybersecurity, marketing, management information systems, statistical modeling, social science analytics, architectural design and built environment, and smart agriculture. The overall curriculum is designed to provide students with an ideal educational experience necessary to become effective professional data science experts. Under the proposed undergraduate curriculum, general education coursework will help data science students develop intellectual curiosity, critical thinking, and ethical and aesthetic awareness. The coursework for the core program will provide students with the opportunity to build a strong foundation in the key fields of data science that include computer science, mathematics and statistics, management information systems, communication, management / leadership, design, and ethics. The course sequences for several distinct areas of academic concentration will provide students with the opportunity to become data science experts in a specific area.

CURRENT CURRICULUM OUTLINE	Required Hours	**PROPOSED CURRICULUM OUTLINE**	Required Hours
English (General Education) EN 1103 English Comp I or EN 1104 EN 1113 English Comp II or EN 1173	6	English (General Education) EN 1103 English Comp I or EN 1104 EN 1113 English Comp II or EN 1173	6
Fine Arts (General Education):	3	Fine Arts (General Education):	3

Any Gen Ed Course		Any Gen Ed Course	
Natural Sciences 2 Lab Based Sciences required by Gen Ed	6	Natural Sciences 2 Lab Based Sciences required by Gen Ed	6
Math (General Education): MA 1713 Calculus I MA 1723 Calculus II MA 2733 Calculus III	9	Math (General Education): MA 1713 Calculus I MA 1723 Calculus II MA 2733 Calculus III	9
Humanities (General Education): PHI 1113 Intro to Logic (required) Any Gen Ed Course	6	Humanities (General Education): PHI 1113 Intro to Logic (required) Any Gen Ed Course	6
Social/Behavioral Sciences (Gen Ed): DSCI 2013 Data Science Literacy (required) Any Gen Ed Course	6	Social/Behavioral Sciences (Gen Ed): DSCI 2013 Data Science Literacy (required) Any Gen Ed Course	6
Oral Communication CO 3213 Small Group Communication	3	Oral Communication CO 3213 Small Group Communication	3
Technical Writing CO 3223 Comm & Media Studies Research Methods	3	Technical Writing CO 3223 Comm & Media Studies Research Methods	3
Major Core: MA 3123 Statistical Inference MA 3113 Introduction to Linear Algebra MA/ST 4523 Introduction to Probability CSE 1284 Introduction to Computer Programming CSE 1384 Intermediate Computer Programming CSE 2813 Discrete Structures CSE 2383 Data Structures and Analysis of Algorithms CSE 4503 Database Management Systems CSE 4633 Artificial Intelligence CSE 3763 Legal and Ethical Issues in Computing BIS 3233 Management Information Systems DSCI 3013 Fundamentals of Data Acquisition DSCI 2012 Data Science Lab - Data Wrangling DSCI 3012 Data Science Lab – Description, Analysis, and Inference DSCI 3022 Data Science Lab – Data Visualization DSCI 3032 Data Science Lab - Artificial Intelligence DSCI 2022 Data Science Lab - Cloud, Quantum, and High-Performance Computing	51	Major Core: MA 3123 Statistical Inference MA 3113 Introduction to Linear Algebra MA/ST 4523 Introduction to Probability CSE 1284 Introduction to Computer Programming CSE 1384 Intermediate Computer Programming CSE 2813 Discrete Structures CSE 2383 Data Structures and Analysis of Algorithms CSE 4503 Database Management Systems CSE 4633 Artificial Intelligence CSE 3763 Legal and Ethical Issues in Computing BIS 3233 Management Information Systems DSCI 3013 Fundamentals of Data Acquisition DSCI 2012 Data Science Lab - Data Wrangling DSCI 3012 Data Science Lab – Description, Analysis, and Inference DSCI 3022 Data Science Lab – Data Visualization DSCI 3032 Data Science Lab - Artificial Intelligence DSCI 2022 Data Science Lab - Cloud, Quantum, and High-Performance Computing	51

DSCI 4013 Data Visualization		DSCI 4013 Data Visualization	
Concentration Courses: The coursework is reported below. Each area of concentration combines fundamental, field-specific content, concentration electives designed to apply data science to the field, and a six-hour practicum/capstone project. On their third year, students will have the opportunity to select a concentration area from the several available areas offered by the different colleges on campus. **Visualization and Visual Analytics for Built Environment** The Visualization and Visual Analytics for Built Environment concentration focuses on visualization techniques and smart analytics to leverage data across the full project lifecycle, from design development, construction, and operations, to increase efficiency and enhance productivity. The design and construction process for the built environment is rapidly transforming, driven by two primary forces. Architects and designers are increasingly adopting Building Information Modeling (BIM) techniques that allow more sustainable, accurate, and efficient design, planning, evaluation, and construction of the built environment. Rapid integration of IoT sensors and intelligent building systems that track every aspect of building performance complements the digital revolution in the design process. However, the data visualization and analytics efforts have significantly lagged behind data capture efforts by integrating IoT sensors in smart buildings. This gap presents an opportunity for a new class of professionals at the intersection of data science and design visualization. The industry needs new professionals who can bring together computational statistics and data analytic skills with visualization skills to inform the development of new workflows and strategies for the design and construction industries. Courses in this concentration train aim to fill this gap by preparing students in three complementary areas: • Provide a foundation in basic principles	30	Concentration Courses: The coursework is reported below. Each area of concentration combines fundamental, field-specific content, concentration electives designed to apply data science to the field, and a six-hour practicum/capstone project. On their third year, students will have the opportunity to select a concentration area from the several available areas offered by the different colleges on campus. **Visualization and Visual Analytics for Built Environment** The Visualization and Visual Analytics for Built Environment concentration focuses on visualization techniques and smart analytics to leverage data across the full project lifecycle, from design development, construction, and operations, to increase efficiency and enhance productivity. The design and construction process for the built environment is rapidly transforming, driven by two primary forces. Architects and designers are increasingly adopting Building Information Modeling (BIM) techniques that allow more sustainable, accurate, and efficient design, planning, evaluation, and construction of the built environment. Rapid integration of IoT sensors and intelligent building systems that track every aspect of building performance complements the digital revolution in the design process. However, the data visualization and analytics efforts have significantly lagged behind data capture efforts by integrating IoT sensors in smart buildings. This gap presents an opportunity for a new class of professionals at the intersection of data science and design visualization. The industry needs new professionals who can bring together computational statistics and data analytic skills with visualization skills to inform the development of new workflows and strategies for the design and construction industries. Courses in this concentration train aim to fill this gap by preparing students in three complementary areas: • Provide a foundation in basic principles of design and digital representation drawing	30

of design and digital representation drawing from traditional art and design disciplines • Develop advanced design visualization skills using state-of-the-art computer-aided design (CAD) and building information modeling (BIM) software tools used in the architecture, engineering, and construction industries • Develop an understanding of advanced building systems and building performance simulations and evaluations. The fundamental discipline courses in this concentration thus introduce visualization and analytics techniques that support the entire building project lifecycle from design development, construction, and operation to increase efficiency and enhance performance. The two data science capstone projects for this concentration provide opportunities to engage in real-world problem-based learning by bringing together foundational data science skills with visualization and analytic skills developed as part of the concentration. <u>Complete EIGHT 3-credit courses out of the following TEN:</u> -ART 1123 Design I (2D) -ART 2803 Intro to Comp. Art -ART 2813 Intermediate Computing for Design -ART 4813 Multimedia I -BCS 2313 Virtual Design & Construction -ID 3603 Digital Design for Interiors -ID 3363 3D CAD Modeling -ARC 2713 Passive Bldg. Systems -ARC 3723 Active Bldg. Systems -ARC 4633 Architecture and Virtual Spaces <u>Required:</u> -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science **Computational Agriculture and Natural Resources** The Computational Agriculture and Natural Resources (CANR) concentration trains students interested in data-driven		from traditional art and design disciplines • Develop advanced design visualization skills using state-of-the-art computer-aided design (CAD) and building information modeling (BIM) software tools used in the architecture, engineering, and construction industries • Develop an understanding of advanced building systems and building performance simulations and evaluations. The fundamental discipline courses in this concentration thus introduce visualization and analytics techniques that support the entire building project lifecycle from design development, construction, and operation to increase efficiency and enhance performance. The two data science capstone projects for this concentration provide opportunities to engage in real-world problem-based learning by bringing together foundational data science skills with visualization and analytic skills developed as part of the concentration. <u>Complete EIGHT 3-credit courses out of the following TEN:</u> -ART 1123 Design I (2D) -ART 2803 Intro to Comp. Art -ART 2813 Intermediate Computing for Design -ART 4813 Multimedia I -BCS 2313 Virtual Design & Construction -ID 3603 Digital Design for Interiors -ID 3363 3D CAD Modeling -ARC 2713 Passive Bldg. Systems -ARC 3723 Active Bldg. Systems -ARC 4633 Architecture and Virtual Spaces <u>Required:</u> -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science **Computational Agriculture and Natural Resources** The Computational Agriculture and Natural Resources (CANR) concentration trains students interested in data-driven careers in agriculture and natural resources through subject matter and applied data science coursework. Students who complete the CANR concentration will be equipped for	

careers in agriculture and natural resources through subject matter and applied data science coursework. Students who complete the CANR concentration will be equipped for careers as data scientists in agricultural production, agricultural technology, agricultural finance, natural resource management, wildlife and fisheries science, plant science, and other related fields. <u>Choose 1 Course from the Following:</u> -AEC 2713 Introduction to Food and Resource Economics -ABE 1863 Engineering Technology in Agriculture -BCH 4013 Principles of Biochemistry -PSS 1313 Plant Science -ADS 1113 Animal Science <u>Choose 1 Course from the Following:</u> -SBP 1103 Introduction to Sustainable Bioproducts -WFA 3133 Applied Ecology -FO 4123 Forest Ecology <u>Choose 6 Credit Hours from the Following:</u> CALS: -EC 2113 Principles of Macroeconomics -EC 3123 Intermediate Microeconomics -AEC 2223 Introduction to Sustainability Economics -AEC 3133 Introductory Agribusiness Management -AEC 3233 Introduction to Environmental Economics and Policy -AEC 4123 Financial and Commodity Futures Marketing -ABE 2173 Principles of Agricultural and Off-Road Machines -ABE 2543 Precision Agriculture I -ABE 4543 Precision Agriculture II -BCH 3102 Essential Biochemical Concepts and Analysis -BCH 4414 Protein Methods -ADS 3013 Anatomy and Physiology -ADS 3313 Introduction to Meat Science CFR: -SBP 2012 Intro to Bioproducts Industries -SBP 2123 Materials and Processing of Structure Bioproducts -WFA 4313 Fisheries Management -WFA 4613 Landscape Ecology		careers as data scientists in agricultural production, agricultural technology, agricultural finance, natural resource management, wildlife and fisheries science, plant science, and other related fields. <u>Choose 1 Course from the Following:</u> -AEC 2713 Introduction to Food and Resource Economics -ABE 1863 Engineering Technology in Agriculture -BCH 4013 Principles of Biochemistry -PSS 1313 Plant Science -ADS 1113 Animal Science <u>Choose 1 Course from the Following:</u> -SBP 1103 Introduction to Sustainable Bioproducts -WFA 3133 Applied Ecology -FO 4123 Forest Ecology <u>Choose 6 Credit Hours from the Following:</u> CALS: -EC 2113 Principles of Macroeconomics -EC 3123 Intermediate Microeconomics -AEC 2223 Introduction to Sustainability Economics -AEC 3133 Introductory Agribusiness Management -AEC 3233 Introduction to Environmental Economics and Policy -AEC 4123 Financial and Commodity Futures Marketing -ABE 2173 Principles of Agricultural and Off-Road Machines -ABE 2543 Precision Agriculture I -ABE 4543 Precision Agriculture II -BCH 3102 Essential Biochemical Concepts and Analysis -BCH 4414 Protein Methods -ADS 3013 Anatomy and Physiology -ADS 3313 Introduction to Meat Science CFR: -SBP 2012 Intro to Bioproducts Industries -SBP 2123 Materials and Processing of Structure Bioproducts -WFA 4313 Fisheries Management -WFA 4613 Landscape Ecology -FO 2213 Forest Measurements -FO 2443 Essentials of Biotechnology -FO 4113 Forest Resource Economics -FO 4123 Forest Ecology <u>Choose 12 Credit Hours from the</u>	

-FO 2213 Forest Measurements -FO 2443 Essentials of Biotechnology -FO 4113 Forest Resource Economics -FO 4123 Forest Ecology <u>Choose 12 Credit Hours from the Following:</u> CALS: -AEC 4133 Analysis of Food Markets and Prices -AEC 4223 Applied Quantitative Analysis in Agricultural Economics -AEC 4363 Economics of Precision Agriculture -AEC 4413 Public Problems of Agriculture -AEC 4733 Econometric Analysis in Agricultural Economics -ABE 2873 Land Surveying -ABE 3513 The Global Positional System and Geographic Information Systems in Agriculture and Engineering -ABE 4163 Machine Management Agro-Ecosystems -ABE 4263 Soil and Water Management -ABE 4463 Introduction to Imaging in Biological Systems -ABE 4483 Introduction to Remote Sensing Technologies -BCH 4803 Integrative Protein Evolution -PSS 4483 Introduction to Remote Sensing Technologies -ADS 4523 Internet Based Management in Livestock Industries CFR: -SBP 4013 Wood Anatomy -SBP 4253 Quantitative Methods in SBP -WFA 4123 Wildlife and Fisheries Biometrics -WFA 4243 Wildlife Techniques -WFA 4253 Application of Spatial Technologies to Wildlife Fisheries Management -FO 3015 Forest Description and Analysis -FO 4213 Forest Biometrics -FO 4313 Spatial Techniques in Natural Resources Management -FO 4453 Remote Sensing Applications -FO 4473 GIS for Natural Resource Management <u>Required:</u> -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for		<u>Following:</u> CALS: -AEC 4133 Analysis of Food Markets and Prices -AEC 4223 Applied Quantitative Analysis in Agricultural Economics -AEC 4363 Economics of Precision Agriculture -AEC 4413 Public Problems of Agriculture -AEC 4733 Econometric Analysis in Agricultural Economics -ABE 2873 Land Surveying -ABE 3513 The Global Positional System and Geographic Information Systems in Agriculture and Engineering -ABE 4163 Machine Management Agro-Ecosystems -ABE 4263 Soil and Water Management -ABE 4463 Introduction to Imaging in Biological Systems -ABE 4483 Introduction to Remote Sensing Technologies -BCH 4803 Integrative Protein Evolution -PSS 4483 Introduction to Remote Sensing Technologies -ADS 4523 Internet Based Management in Livestock Industries CFR: -SBP 4013 Wood Anatomy -SBP 4253 Quantitative Methods in SBP -WFA 4123 Wildlife and Fisheries Biometrics -WFA 4243 Wildlife Techniques -WFA 4253 Application of Spatial Technologies to Wildlife Fisheries Management -FO 3015 Forest Description and Analysis -FO 4213 Forest Biometrics -FO 4313 Spatial Techniques in Natural Resources Management -FO 4453 Remote Sensing Applications -FO 4473 GIS for Natural Resource Management <u>Required:</u> -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science **Business Information Systems** Business Information Systems focuses on	

Bachelor of Science in Data Science **Business Information Systems** Business Information Systems focuses on applying data science to solve business problems in the context of digital transformation. Modern enterprise management presents complex challenges of identifying actionable knowledge derived from the emerging flood of new data captured by an exploding number of online processes and connected sensors and devices. Companies are redesigning their organizational structures and processes to leverage this new capability – the concentration in BIS will prepare students to play a leading role in this emerging digital transformation and help companies compete in the increasingly connected environment. Students will combine their in-depth understanding of business processes with the ability to apply data science techniques to analyze business data, enabling them to aid strategic decision making. The concentration in BIS prepares students to solve business problems and identify business opportunities in the context of intelligent data analytics and digital transformation. Students will master these skills through learning exercises and real-world projects, engaging in projects to develop and implement a data-driven decision process or solution based on data mining, artificial intelligence, machine learning, and knowledge discovery of hidden relationships that can be exploited for new advances in business strategy. This experiential learning approach enables students to leverage their skillsets in a contextualized environment, complete with project management requirements, cost-benefit trade-offs, implementation obstacles (including financial, political, administrative, temporal, and legal barriers), team building and culture-building requirements, progress measurement methods, and complete life-cycle management of data science projects. <u>Students will choose three courses from the following:</u> -BL 2413 Legal Environment of Business -ACC 2013 Financial Accounting		applying data science to solve business problems in the context of digital transformation. Modern enterprise management presents complex challenges of identifying actionable knowledge derived from the emerging flood of new data captured by an exploding number of online processes and connected sensors and devices. Companies are redesigning their organizational structures and processes to leverage this new capability – the concentration in BIS will prepare students to play a leading role in this emerging digital transformation and help companies compete in the increasingly connected environment. Students will combine their in-depth understanding of business processes with the ability to apply data science techniques to analyze business data, enabling them to aid strategic decision making. The concentration in BIS prepares students to solve business problems and identify business opportunities in the context of intelligent data analytics and digital transformation. Students will master these skills through learning exercises and real-world projects, engaging in projects to develop and implement a data-driven decision process or solution based on data mining, artificial intelligence, machine learning, and knowledge discovery of hidden relationships that can be exploited for new advances in business strategy. This experiential learning approach enables students to leverage their skillsets in a contextualized environment, complete with project management requirements, cost-benefit trade-offs, implementation obstacles (including financial, political, administrative, temporal, and legal barriers), team building and culture-building requirements, progress measurement methods, and complete life-cycle management of data science projects. <u>Students will choose **two** courses from the following:</u> -BL 2413 Legal Environment of Business -ACC 2013 Financial Accounting -ACC 2023 Managerial Accounting -EC 2113 Macro Economics -EC 2123 Macro Economics -FIN 3123 Financial Management -MGT 3113 Principles of Management -MKT 3013 Principles of Marketing -MKT 3323 International Logistics	

-ACC 2023 Managerial Accounting -EC 2113 Macro Economics -EC 2123 Macro Economics -FIN 3123 Financial Management -MGT 3113 Principles of Management -MKT 3013 Principles of Marketing -MKT 3323 International Logistics <u>Required:</u> -BQA 4423 Business Decision Analysis -BIS 4533 Decision Support Systems -BIS 4113 BIS Security Management -BIS 4753 Structured Systems Analysis and Design -BIS 4763 BIS Senior Seminar (analytics project) -BQA 4413 Business Forecasting & Predictive Analytics **Marketing and Supply Chain Analytics** Marketing and Supply Chain Analytics focuses on applying data science to solve problems relating to marketing and supply chain management using digital technologies. Marketing and supply chain functions are increasingly driven by data. Tasks such as analyzing online social media content, planning advertising campaigns across multiple online channels, designing cutting edge products, and delivering products through complex global supply chains, all require cutting edge data analytics skills. The concentration in Marketing and Supply Chain Analytics prepares students to solve data-driven business problems relating to marketing and supply chain management. Fundamental discipline courses expose students to important principles in business. Core concentration courses include upper-level courses focused on marketing and supply-chain analytics. There is a strong focus on practical project-driven learning in this concentration, with several classes offering the chance to work on projects for local companies and non-profit organizations. <u>Students will take the following 3 Courses:</u> -BQA 4423 Business Decision Analysis -MKT 3013 Principles of Marketing -MKT 3323 International Logistics <u>Students will choose one course from the</u>		<u>Required:</u> -BQA 4423 Business Decision Analysis -BIS 4533 Decision Support Systems -BIS 4113 BIS Security Management -BIS 4753 Structured Systems Analysis and Design -BIS 4763 BIS Senior Seminar (analytics project) -BQA 4413 Business Forecasting & Predictive Analytics **Students will register for one 4000 level business elective.** **Students will register for one non-business course for which they meet the prerequisites from any of the data science concentrations.** **Marketing and Supply Chain Analytics** Marketing and Supply Chain Analytics focuses on applying data science to solve problems relating to marketing and supply chain management using digital technologies. Marketing and supply chain functions are increasingly driven by data. Tasks such as analyzing online social media content, planning advertising campaigns across multiple online channels, designing cutting edge products, and delivering products through complex global supply chains, all require cutting edge data analytics skills. The concentration in Marketing and Supply Chain Analytics prepares students to solve data-driven business problems relating to marketing and supply chain management. Fundamental discipline courses expose students to important principles in business. Core concentration courses include upper-level courses focused on marketing and supply-chain analytics. There is a strong focus on practical project-driven learning in this concentration, with several classes offering the chance to work on projects for local companies and non-profit organizations. <u>Students will take the following 3 Courses:</u> -BQA 4423 Business Decision Analysis -MKT 3013 Principles of Marketing -MKT 3323 International Logistics <u>Students will choose one course from the following:</u>	

following: -BL 2413 Legal Environment of Business -ACC 2013 Financial Accounting -ACC 2023 Managerial Accounting -EC 2113 Macro Economics -EC 2123 Macro Economics -FIN 3123 Financial Management -MGT 3113 Principles of Management Students will choose three courses from the following list. -BIS 4533 Decision Support Systems -MKT 4533 Marketing Research -MKT 4213 Internet Marketing -MKT 4033 International Transportation -MKT 4013 Procurement -MKT 4313 Physical Distribution Management Students will register for one non-business course for which they meet the prerequisites from any of the data science concentrations. Students will choose two courses from the following: -MKT 4333 International Supply Chain Management -BQA 4413 Business Forecasting & Predictive Analytics -BQA 4000 Directed Individual Study in Business Quantitative Analysis **Social Data Analytics** Social Data Analytics focuses on applying data science to understand sociological and political aspects of social media communication. Social Data Analytics prepares students to apply data science to understand sociological and political aspects of social media communication. Fundamental discipline courses lay discipline-specific foundations in social science. Core concentration courses prepare students for more advanced work with social media sources. From the following courses, choose 9 hours, but no more than 6 hours in any one field: -AN 1103 Intro to Anthropology -AN 1143 Intro to Cultural Anthropology -AN 1344 Intro to Bio Anthropology -CO 1403 Intro to Mass Media -GR 2313 Maps and Remote Sensing -PS 1313 Intro to International Relations -PS 1513 Comparative Government -PS 2703 Intro to Public Policy -CRM 1003 Crime and Justice in America		-BL 2413 Legal Environment of Business -ACC 2013 Financial Accounting -ACC 2023 Managerial Accounting -EC 2113 Macro Economics -EC 2123 Macro Economics -FIN 3123 Financial Management -MGT 3113 Principles of Management Students will choose three courses from the following list. -BIS 4533 Decision Support Systems -MKT 4533 Marketing Research -MKT 4213 Internet Marketing -MKT 4033 International Transportation -MKT 4013 Procurement -MKT 4313 Physical Distribution Management Students will register for one non-business course for which they meet the prerequisites from any of the data science concentrations. Students will choose two courses from the following: -MKT 4333 International Supply Chain Management -BQA 4413 Business Forecasting & Predictive Analytics -BQA 4000 Directed Individual Study in Business Quantitative Analysis **Social Data Analytics** Social Data Analytics focuses on applying data science to understand sociological and political aspects of social media communication. Social Data Analytics prepares students to apply data science to understand sociological and political aspects of social media communication. Fundamental discipline courses lay discipline-specific foundations in social science. Core concentration courses prepare students for more advanced work with social media sources. From the following courses, choose 9 hours, but no more than 6 hours in any one field: -AN 1103 Intro to Anthropology -AN 1143 Intro to Cultural Anthropology -AN 1344 Intro to Bio Anthropology -CO 1403 Intro to Mass Media -GR 2313 Maps and Remote Sensing -PS 1313 Intro to International Relations -PS 1513 Comparative Government	

-SO 1003 Intro to Sociology -SO 1103 Contemporary Social Problems <u>Choose 15 hours from the following 3-hour courses:</u> -AN 3343 Intro to Forensic Anthropology -AN 4173 Environment and Society -AN 4163 Anthropology of International Development -AN 4323 Plagues and People -CO 4213 Political Communication -CO 4283 Health Communication -CRM 4253 White Collar and Computer Crime -GR 3303 Survey of Geospatial Technologies -GR 4123 Urban Geography -PS 4243 State Election Policy and Politics -PS 4283 Public Opinion -PS 4293 Political Behavior -PS 4343 International Conflict and Security -PS 4373 International Terrorism -PS 4464 Political Analysis -PS 4523 Democracy and Inequality -PS 4613 Civil Wars and Intra-State Conflict -SO 3303 Rural Sociology -SO 4113 Social Organization and Change -SO 4123 Poverty, Analysis: People, Organization, and Program -SO 4173 Environment and Society <u>Required:</u> -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science **Psychoinformatics** Psychoinformatics is a subfield of phycology for the acquisition, organization, and synthesis of data collected from psychology to reveal information about psychological traits such as personality and mood. Psychology has historically relied on experiments and questionnaires to collect data. These methods face several disadvantages such as small number of participants and bias and unreliable memory. Psychoinformatics solves these problems by storing Big Data related to psychology (such as communications on smartphones or social		-PS 2703 Intro to Public Policy -CRM 1003 Crime and Justice in America -SO 1003 Intro to Sociology -SO 1103 Contemporary Social Problems <u>Choose 15 hours from the following 3-hour courses:</u> -AN 3343 Intro to Forensic Anthropology -AN 4173 Environment and Society -AN 4163 Anthropology of International Development -AN 4323 Plagues and People -CO 4213 Political Communication -CO 4283 Health Communication -CRM 4253 White Collar and Computer Crime -GR 3303 Survey of Geospatial Technologies -GR 4123 Urban Geography -PS 4243 State Election Policy and Politics -PS 4283 Public Opinion -PS 4293 Political Behavior -PS 4343 International Conflict and Security -PS 4373 International Terrorism -PS 4464 Political Analysis -PS 4523 Democracy and Inequality -PS 4613 Civil Wars and Intra-State Conflict -SO 3303 Rural Sociology -SO 4113 Social Organization and Change -SO 4123 Poverty, Analysis: People, Organization, and Program -SO 4173 Environment and Society <u>Required:</u> -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science **Psychoinformatics** Psychoinformatics is a subfield of phycology for the acquisition, organization, and synthesis of data collected from psychology to reveal information about psychological traits such as personality and mood. Psychology has historically relied on experiments and questionnaires to collect data. These methods face several disadvantages such as small number of participants and bias and unreliable memory. Psychoinformatics solves these problems by storing Big Data related to psychology (such as communications on	

media websites) and then data mining for relevant psychological information. This concentration prepares students to apply data science to the field of psychology. Fundamental discipline courses lay discipline-specific foundations in psychology. Core concentration courses prepare students for more advanced work with cognitive science and psychology. Students in the Psychology concentration are recommended to take PSY 1013 as their second required social science general education course. <u>Required:</u> -PSY 1021 Careers in Psychology -PSY 3104 Introductory Psychological Stats -PSY 3314 Experimental Psychology <u>Choose 9 hours from the following 3-hour courses:</u> -PSY 3343 Psychology of Learning -PSY 3623 Social Psychology -PSY 3713 Cognitive Psychology -PSY 3803 Intro to Developmental Psych -PSY 4403 Biological Psychology <u>Choose 6 hours from among any of the 4000 level Psychology courses.</u> <u>Required:</u> -PSY 4000 Directed Individual Study in Psychology *Students must perform research in a laboratory and present their capstone project at the Undergraduate Research Symposium.* **Statistical Modeling** The Statistical Modeling concentration prepares students to apply advanced statistical methods to build analytical and statistical models. Core concentration courses prepare students for more advanced work in statistics. The concentration focuses on statistical models and methods that are needed to discover and validate patterns in Big Data. It includes upper-levels statistics and mathematics courses and a two-semester practicum to apply the theoretical machinery of quantitative methods to the solution of real-world problems involving		smartphones or social media websites) and then data mining for relevant psychological information. This concentration prepares students to apply data science to the field of psychology. Fundamental discipline courses lay discipline-specific foundations in psychology. Core concentration courses prepare students for more advanced work with cognitive science and psychology. Students in the Psychology concentration are recommended to take PSY 1013 as their second required social science general education course. <u>Required:</u> -PSY 1021 Careers in Psychology -PSY 3104 Introductory Psychological Stats -PSY 3314 Experimental Psychology <u>Choose 9 hours from the following 3-hour courses:</u> -PSY 3343 Psychology of Learning -PSY 3623 Social Psychology -PSY 3713 Cognitive Psychology -PSY 3803 Intro to Developmental Psych -PSY 4403 Biological Psychology <u>Choose 6 hours from among any of the 4000 level Psychology courses.</u> <u>Required:</u> -PSY 4000 Directed Individual Study in Psychology *Students must perform research in a laboratory and present their capstone project at the Undergraduate Research Symposium.* **Statistical Modeling** The Statistical Modeling concentration prepares students to apply advanced statistical methods to build analytical and statistical models. Core concentration courses prepare students for more advanced work in statistics. The concentration focuses on statistical models and methods that are needed to discover and validate patterns in Big Data. It includes upper-levels statistics and mathematics courses and a two-semester practicum to apply the theoretical machinery of quantitative methods to the solution of real-world problems involving Big-Data.	

Big-Data. <u>Required:</u> -MA 2923 Intro. to Modern Scientific Computing -MA 4183 Math. Found. of Machine Learning -MA 4133 Discrete Mathematics -MA 4143 Graph Theory -ST 4213 Nonparametric -ST 4313 Intro to Spatial Statistics -ST 4543 Intro to Mathematical Statistics I -ST 4243 Data Analysis I -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science **Computational Intelligence** Computational Intelligence focuses on understanding artificial intelligence and machine learning approaches to develop effective strategies to solve large-scale data science problems. This includes creation of new software tools, algorithms, and using existing programs and libraries. The concentration includes foundational courses in software development, algorithms, artificial intelligence, and machine learning. These ideas are then applied in various computer science-related contexts in upper-level courses and in a two-semester practicum. <u>Required:</u> -CSE 2213 Methods & Tools in Software Development -CSE 4163 Designing Parallel Algorithms -CSE 4683 Machine Learning and Soft Computing -CSE 4833 Introduction to Algorithms -CSE 4643 AI Robotics -CSE 4623 Computational Biology -CSE 4653 Cognitive Science -CSE 4293 Artificial Intelligence for Cybersecurity -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science **Geoinformatics** The Geoinformatics concentration includes courses in three categories within the		<u>Required:</u> -MA 2923 Intro. to Modern Scientific Computing -MA 4183 Math. Found. of Machine Learning -MA 4133 Discrete Mathematics -MA 4143 Graph Theory -ST 4213 Nonparametric -ST 4313 Intro to Spatial Statistics -ST 4543 Intro to Mathematical Statistics I -ST 4243 Data Analysis I -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science **Computational Intelligence** Computational Intelligence focuses on understanding artificial intelligence and machine learning approaches to develop effective strategies to solve large-scale data science problems. This includes creation of new software tools, algorithms, and using existing programs and libraries. The concentration includes foundational courses in software development, algorithms, artificial intelligence, and machine learning. These ideas are then applied in various computer science-related contexts in upper-level courses and in a two-semester practicum. <u>Required:</u> -CSE 2213 Methods & Tools in Software Development -CSE 4163 Designing Parallel Algorithms -CSE 4683 Machine Learning and Soft Computing -CSE 4833 Introduction to Algorithms -CSE 4643 AI Robotics -CSE 4623 Computational Biology -CSE 4653 Cognitive Science -CSE 4293 Artificial Intelligence for Cybersecurity -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science **Geoinformatics** The Geoinformatics concentration includes courses in three categories within the Department of Geosciences, comprising a total of 30 hours, with a focus on geospatial	

Department of Geosciences, comprising a total of 30 hours, with a focus on geospatial data acquisition and analysis. This includes nine hours of required coursework related to: (1) statistical analysis of geospatial data, (2) analysis and visualization of spatial data using Geographic Information Systems (GIS), and (3) acquisition of spatial information from remote sensing platforms. A further 15 hours will consist of courses in meteorology/climatology, geospatial science, and/or geology, with specific courses chosen based on student interest. These courses serve as the basis for attaining core knowledge on the nature and processes related to geoscience data, which is critical for applying data science skills in an appropriate and representative way with respect to geospatial information. The courses also act to showcase the specific applications of data science within the geoscience community, which will help students define future research strategies and interests as well as prepare them for careers as data scientists and geoinformatics professionals. The final six-hour capstone course will provide a means to apply general and discipline-specific data science skills by working directly with one or more geoscience research faculty. The course will involve designing and completing a research-based project that requires acquiring, analyzing, and interpreting geospatial information using sound scientific principles and critical thinking. By completing the Geoinformatics concentration within the Data Science BS, students will learn not only the skills and techniques required to be successful data scientists within the geospatial community, but also the knowledge necessary to make critical and relevant decisions within the scientific fields that rely on the collection and interpretation of spatial information. <u>Required:</u> -GR 4303 Principles of GIS2 -GR 4633 Statistical Climatology <u>Choose one of the following:</u> -GR 4333 Remote Sensing of the Physical Environment2 -GR 4783 Satellite Meteorology -GR 4883 Radar Meteorology		data acquisition and analysis. This includes nine hours of required coursework related to: (1) statistical analysis of geospatial data, (2) analysis and visualization of spatial data using Geographic Information Systems (GIS), and (3) acquisition of spatial information from remote sensing platforms. A further 15 hours will consist of courses in meteorology/climatology, geospatial science, and/or geology, with specific courses chosen based on student interest. These courses serve as the basis for attaining core knowledge on the nature and processes related to geoscience data, which is critical for applying data science skills in an appropriate and representative way with respect to geospatial information. The courses also act to showcase the specific applications of data science within the geoscience community, which will help students define future research strategies and interests as well as prepare them for careers as data scientists and geoinformatics professionals. The final six-hour capstone course will provide a means to apply general and discipline-specific data science skills by working directly with one or more geoscience research faculty. The course will involve designing and completing a research-based project that requires acquiring, analyzing, and interpreting geospatial information using sound scientific principles and critical thinking. By completing the Geoinformatics concentration within the Data Science BS, students will learn not only the skills and techniques required to be successful data scientists within the geospatial community, but also the knowledge necessary to make critical and relevant decisions within the scientific fields that rely on the collection and interpretation of spatial information. <u>Required:</u> -GR 4303 Principles of GIS2 -GR 4633 Statistical Climatology <u>Choose one of the following:</u> -GR 4333 Remote Sensing of the Physical Environment2 -GR 4783 Satellite Meteorology -GR 4883 Radar Meteorology <u>Elective courses (15 hours – choose 5 from the following)</u> -GR 4733 Synoptic Meteorology	

<u>Elective courses (15 hours – choose 5 from the following)</u> -GR 4733 Synoptic Meteorology -GR 4643 Physical Meteorology and Climatology I -GR 4693 Physical Meteorology and Climatology II -GR 4613 Applied Climatology -GR 4783 Satellite Meteorology1 -GR 4883 Radar Meteorology1 •-GR 4553 Computer Methods in Meteorology -GR 4313 Advanced GIS2 -GR 4323 Cartographic Sciences2 -GR 4333 Remote Sensing of the Physical Environment1,2 -GR 4343 Advanced Remote Sensing2 -GR 4363 GIS Programming2 -GR 4123 Urban Geography -GG 3613 Water Resources -GG 4233 Applied Geophysics -GG 4413 Structural Geology -GG 4503 Geomorphology -GG 4523 Coastal Environments -GG 4543 Community Engagement in Geosciences -GG 4613 Physical Hydrogeology 1 Can be used as remaining hours if not already used for the required concentration 2 Counts towards the Geospatial and Remote Sensing Minor <u>Required:</u> -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science		-GR 4643 Physical Meteorology and Climatology I -GR 4693 Physical Meteorology and Climatology II -GR 4613 Applied Climatology -GR 4783 Satellite Meteorology1 -GR 4883 Radar Meteorology1 •-GR 4553 Computer Methods in Meteorology -GR 4313 Advanced GIS2 -GR 4323 Cartographic Sciences2 -GR 4333 Remote Sensing of the Physical Environment1,2 -GR 4343 Advanced Remote Sensing2 -GR 4363 GIS Programming2 -GR 4123 Urban Geography -GG 3613 Water Resources -GG 4233 Applied Geophysics -GG 4413 Structural Geology -GG 4503 Geomorphology -GG 4523 Coastal Environments -GG 4543 Community Engagement in Geosciences -GG 4613 Physical Hydrogeology *1 Can be used as remaining hours if not already used for the required concentration* *2 Counts towards the Geospatial and Remote Sensing Minor* <u>Required:</u> -DSCI 4553: Capstone Project 1 for Bachelor of Science in Data Science -DSCI 4663: Capstone Project 2 for Bachelor of Science in Data Science **Sports Science** **The Sports Science concentration focuses on applying data science to understand the physiological and neuromechanical stresses on athletes. Students will apply data science techniques with foundational exercise science knowledge to assess physiological and neuromechanical variables and then interpret findings to improve training and performance. Students completing the Sports Science concentration will be prepared for careers working with individuals in a wide variety of sport and performance settings.** **<u>Required:</u>** **-BIO 1004: Anatomy and Physiology****	

		-EP 3233: Anatomical Kinesiology **-EP 3304: Exercise Physiology** **-EP 4504: Mechanical Analysis** **Human Performance Emphasis** **<u>Choose one of the following:</u>** **-PE 3163: Sport Psychology** **-SS 4003: Sport Philosophy** **<u>Required:</u>** **-PE 4283: Sport Biomechanics** **-PE 3313: Sport Physiology** **-EP 4153: Training and Cond for Sport *** **-DSCI 4663: Data Science Capstone 2** *** Serves as requirement for DSCI 4553 Data Science Capstone 1** **** If taken as a general education credit, an additional Sports Science course will be added.**	
Total Hours	123	Total Hours	123

Concentration Coursework

JUSTIFICATION – Sports Science

There are several reasons why adding a sports science concentration in data science would be justified:

1. **Opportunities for innovation: Sports science and data science are both fields that are constantly evolving. By combining the two, there is potential for innovation in areas such as player performance analysis and injury prevention. Students who pursue a concentration in sports science and data science would be well-positioned to contribute to these exciting developments.**

2. **Collaboration across disciplines: The intersection of sports science and data science requires collaboration across multiple disciplines, including computer science, statistics, and sports medicine. By offering a concentration in sports science and data science, universities can foster collaboration and encourage students to think creatively across disciplinary boundaries.**

3. **Job market opportunities: The sports industry is a large and growing market, with many opportunities for graduates with skills in sports science and data science. By adding a concentration in this area, universities can help students gain a competitive edge in the job market and prepare them for careers in sports analytics, sports technology, and other related fields.**

Overall, adding a sports science concentration in data science would be a relevant and valuable addition to university curricula, given the increasing demand for data-driven decision-making in sports and the potential for innovation in this field.

JUSTIFICATION – BIS update

These changes were required to ensure that the MSU College of Business maintains its full accreditation of all programs by AACSB International, which has oversight over all programs that include more than 30 credit hours of business coursework.

STUDENT LEARNING OUTCOMES AND ASSESSMENT

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Apply theory, techniques, and tools throughout the data science lifecycle and employ the resulting knowledge to satisfy stakeholders' needs.
7. Describe how to create a culture and leadership environment for innovation that puts the practice of data science at the core source of the economic and cultural vitality of an organization to ensure success in the process of digital transformation.
8. Construct, evaluate, and choose data-enabled predictive models using state-of-the-art artificial intelligence, machine learning, statistical modeling, and model evaluation methods.

Assessment will be realized through the Institutional Effectiveness report process. External reviewers will also be identified to conduct periodic self-studies and, when possible, to seek accreditation through the ABET Computing Accrediting Commission or other accreditation bodies relevant to establishing the overall quality of the program.

SUPPORT – Letters of support from the Department of Kinesiology, College of Education, and College of Business
PROPOSED 4-LETTER ABBREVIATION DSCI
EFFECTIVE DATE Fall 2023
CIP NIMBER 30.7001

TO: Dr. Andy Perkins Chair, University Committee on Courses and Curricula
FROM: University Data Science Committee

RE: Approval of Degree Modification to BS in Data Science to revise BIS and add Sports Science Concentrations

DATE: April 12, 2023

This letter of support is offered by the University Data Science Committee in support of the following degree program modifications for the BS degree in Data Science:

1. Revise Business Information Systems concentration
2. Add Sports Science concentration

Sincerely,
University Data Science Committee Members

TO: Dr. Andy Perkins

FROM: Chair, University Committee on Courses and Curricula University Data Science Committee

RE: Addition of Sports Science concentration and Update of Business Information Systems concentration

DATE: April 11, 2023

This letter of support is offered by the University Data Science Committee in support of the addition of the Sports Science concentration as well as the update to the Business Information Systems concentration within the Bachelor of Science in Data Science degree program.

Sincerely,
University Data Science Committee Members

Melanie Loehwing, Chair

Kimberly Hall, Curriculum Subcommittee Chair

Bimal Balakrishnan

Jonathan Barlow

Brad Brazzeal

Will Davis

Stephen France

Dan adke

Alta Knizley

Duane McLemore

Bindu Nanduri

Mimmo Parisi

Andy Perkins

Mohammad Sepehrifar

Bruno Kanieski da Silva

Da d Smith

Guiming Wang

Merrill Warkentin

Li Zhang

Xin Zhang

MISSISSIPPI STATE UNIVERSITY™

COLLEGE OF EDUCATION
Office of the Dean

P.O. Box 9710
309 Allen Hall
175 President Circle
Mississippi State, MS 39762

P. 662.325.3717
F. 662.325.8784
www.educ.msstate.edu

March 20, 2023

To Whom It May Concern:

This letter of support is offered by the College of Education Data Science Committee in support of adding the Concentration in Sport Science to the Data Science degree program.

Sincerely,
College of Education Data Science Committee Members

3/21/23
Dan Gadke

3-21-23
Kim Hall

Kasia Gallo Digitally signed by Kasia Gallo DN: cn=Kasia Gallo, o=MS State Univ, ou=CEPF, email=kgallo@colled.msstate.edu, c=US Date: 2023.03.21 10:58:55 -05'00'
Kasia Gallo

Richard Human

Rebecca R. Robichaux-Davis Digitally signed by Rebecca R. Robichaux-Davis Date: 2023.03.21 08:40:29 -05'00'
Rebecca Robicahux-Davis

JohnEric W. Smith, PhD Digitally signed by JohnEric W. Smith, PhD Date: 2023.03.20 19:38:20 -05'00'
JohnEric Smith

Christa Winkler Digitally signed by Christa Winkler Date: 2023.03.21 09:18:58 -05'00'
Christa Winkler

Digitally signed by Weichieh Yu Date: 2023.03.21 12:29:11 -04'00'
Wei-Chieh Yu

MISSISSIPPI STATE UNIVERSITY

DEPARTMENT OF KINESIOLOGY
P.O. Box 6186
216 McCarthy Gym
Mississippi State, MS 39762

P. 662.325.2963
F. 662.325.4525
www.kinesiology.msstate.edu

October 17th, 2022

Dear Dr. Brown:

The purpose of this letter is to confirm that the curriculum committee for the Exercise Science Division of the Department of Kinesiology has approved a "Sports Science Concentration" within the Data Science Bachelor's Degree Program.

Sincerely,

Dr. JohnEric Smith

Associate Professor

Stan Brown
approved

Kinesiology Curriculum Committee:

Stamatis Agiovlasitis		Adam Knight	
Harish Chander		John Lamberth	John Lamberth
Chia Chia Chen		Zhujun Pan	
Zachary Gillen		JohnEric Smith	
Erin Grant-Butler		Benjamin Wax	
Megan Holmes		Holly Wiley	
LeeAnn Joe			

MISSISSIPPI STATE UNIVERSITY

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www.business.msstate.edu

February 15, 2023

TO: Dr. Andy Perkins
Chair, UCCC

FROM: Kevin Rogers
Associate Dean, College of Business

RE: Modifications to the Data Science major-BIS concentration

The College of Business supports including the following business courses in the proposed modifications to the BS in Data Science, Business Information Systems concentration:

- Required major core courses: BIS 3233
- Business Information Systems concentration courses:
  - Two courses from: BL 2413, ACC 2013, ACC 2023, EC 2113, EC 2123, FIN 3123, MGT 3113, MKT 3013, MKT 3323
  - BQA 4423
  - BIS 4533
  - BIS 4113
  - BIS 4753
  - One 4000-level business elective
  - BIS 4763
  - BQA 4413

This is the maximum allowable business courses for a 123 hour non-business major based on AASCB standards. No additional business courses should be added to this curriculum beyond those listed above.

Sincerely,

Kevin Rogers
Associate Dean and Professor
College of Business