A MEMORANDUM

DATE: November 8, 2021

TO: Academic Deans Council

FROM: Dr. Andy Perkins
UCCC Chair

RE: Change Notice 2

Listed below are curriculum change proposals which have been recommended by the University Committee Courses and Curricula. Under current procedure, members of the Academic Deans Council may question the approval of these proposals at any time prior to 5:00 p.m. on November 19, 2021 by contacting Dr. Andy Perkins (5-0004) or the office of the Vice President for Academic Affairs (5-3742). If no questions have been raised, the proposals will be considered approved automatically.

1. Course Proposals by college/school

AGRICULTURE AND LIFE SCIENCES

Technical Change	ADS 3031	**Approved**	**FROM: ADS 3031 Anatomy and Physiology Laboratory.** (1). Two hours laboratory. Practical application of essential knowledge of anatomy and physiology of domestic species. **TO: ADS 3031 Anatomy and Physiology Laboratory.** (1). (Prerequisite: Prior credit or concurrent enrollment in ADS 3013). Two hours laboratory. Practical application of essential knowledge of anatomy and physiology of domestic species. Effective: Spring 2022
Technical Change	ADS 4412	**Approved**	**FROM: ADS 4412 Managing Livestock Sales I.** (2). (Prerequisites: Instructor approval). Four hours laboratory. Course in preparation, structure and management of livestock sales. Emphasis will be on cattle and horse sales. Students will prepare for and conduct sale. **TO: ADS 4412 Managing Livestock Sales I.** (2). (Prerequisites: Instructor approval). Four hours laboratory. Course in preparation, structure and management of livestock sales. Emphasis will be on livestock sales. Students will prepare for and conduct sale. Effective: Spring 2022
+Online/Distance	FNH 8273	**Approved**	**FNH 8273 Approval to Offer Online Campus 5 for Advanced Clinical Nutrition.** Method of Delivery: O & X Campus: 5 Effective: Spring 2022

ARCHITECUTRE, ART AND DESIGN

Modification ART 2413 (Already approved for Gen. Ed.) (TKI 2413 to ART 2413)	**Approved**	**FROM: TKI 2413 History and Appreciation of the Artcrafts.** (3). Three hours lecture. Growth and Development of the artcrafts through the ages; instructional applications; practical designs; demonstrations, and projects in artmetal, leather, ceramics, and other handicraft areas **TO: ART 2413 History and Appreciation of the Artcrafts.** (3). Three hours lecture. The study of the growth and development of the Art-Crafts through the ages with instructional applications, and practical designs. Method of Instruction: C Method of Delivery: F Campus: 1 CIP: 500799 30 Char: Hi & Appr Artcrafts General Education: Fine Arts Effective: Spring 2022
Addition ART 4023/6023	**Passed Contingent**	**ART 4023/6023 Performance Art and Criticism.**

ARTS AND SCIENCES

Technical Change EN 0103	**Approved**	**FROM: EN 0103 Basic English.** (3). (Prerequisite: A score of 16 or below on the English section of the ACT). Three hours lecture. A study of grammar and mechanics as basic to composition, with emphasis on the sentence and the paragraph. Does not court toward any degree. **TO: EN 0103 Basic English.** (3). (Prerequisite: Score of 16 or below on the English section of the ACT). Three hours lecture. Study of rhetorical and organizational strategies that contribute to effective writing. Emphasis on paragraph and essay development; focus on grammar and mechanics as relevant to composition. Does not count toward any degree. Effective: Spring 2022

Technical Change	EN 1103	**Approved**	**FROM: EN 1103 English Composition I.** (3). (Prerequisite: A score of 17 or above on the English section of the ACT or a final grade of C or higher in EN 0103). Three hours lecture. A study of logical and rhetorical principles and organizational strategies that contribute to effective writing. Honors section available. **TO: EN 1103 English Composition I.** (3). (Prerequisite: Score of 17 or above on the English section of the ACT, final grade of C or higher in EN 0103, or final grade of D in EN 1104). Three hours lecture. Emphasis on critical thinking, rhetorical principles, and organizational strategies for analytical and argumentative essays. Effective: Spring 2022
Technical Change	EN 1113	**Approved**	**FROM: EN 1113 English Composition II.** (3). (Prerequisite: EN 1103 or a final grade of C or higher in EN 1104). Three hours lecture. An expanded study of and practice in stylistics, logic, and research as contributions to analytical writing. **TO: EN 1113 English Composition II.** (3). (Prerequisite: EN 1103 or a final grade of C or higher in EN 1104). Three hours lecture. Expanded study of and practice in stylistics and critical thinking. Focus on analysis, argument, and multi-modality through research. Honors section available. Effective: Spring 2022
Deletion	EN 1163	**Approved**	**EN 1163 Accelerated Composition I.** Effective: Spring 2022
Technical Change	EN 1173	**Approved**	**FROM: EN 1173 Accelerated Composition II.** (3). (Prerequisite: EN 1163 or an ACT sub-score in English of 28 or higher). Three hours lecture. An expanded study of and practice in stylistics, logic, and research as contributions to analytical writing, with emphasis on extensive study of diverse rhetorical models. **TO: EN 1173 Accelerated Composition II.** (3). (Prerequisite: Score of 28 or higher on the English section of the ACT). Three hours lecture. Expanded study of and practice in stylistics and logic. Focus on analysis, argument, and multi-modality through research. Designed for students who exhibit command of basic rhetorical principles. Effective: Spring 2022

Modification EN 3243 (from EN 4243/6243 to EN 3243)	**Approved**	**FROM: EN 4243/6243 Writing Center Tutor Training.** (3). Prerequisite: Grade of B or better in EN 1113 and consent of instructor. Three hours lecture. Introduction to the practices and theories of college writing consultation in Writing Centers. **TO; EN 3243 Writing Center Tutor Training.** (3). (Prerequisite: Grade of B or better in EN 1113 or EN 1173 and 3.0 overall GPA or consent of instructor). Three hours lecture. Introduction to the practices and theories of college writing consultation in Writing Centers. Method of Instruction: C Method of Delivery: F Campus: 1 CIP: 131305 30 Char: Writing Center Tutoring Effective: Spring 2022
Technical Change EN 4111	**Approved**	**FROM: EN 4111 Portfolios and Reflective Writing.** (1). (Prerequisite: Senior standing). One hour lecture. The study and practice of writing application letters/resumes and preparing academic portfolios. **TO: EN 4111 Portfolios and Reflective Writing.** (1). (Prerequisite: Junior or Senior standing). One hour lecture. The study and practice of writing application letters/resumes and preparing academic portfolios. Effective: Spring 2022
Modification HI 4743/6743	**Approved**	**FROM: HI 4743/6743 Evolution of International Politics.** **TO: HI 4743/6743 War and Diplomacy in Europe 1648-1989.** 30 Char: War and Diplomacy in Europe Effective: Spring 2022
Addition MA 4183 /6183 +Online/Distance	**Approved**	**MA 4183/6183 Mathematical Foundations of Machine Learning.** (3). (Prerequisite: MA 2743 and MA 3113). Three hours lecture. Basic machine learning principles and classifiers; gradient-based methods for optimization; data preprocessing techniques; feature selection methods; quadratic programming; Lagrange multipliers and duality; kernel methods; mathematics and applications for deep learning. Method of Instruction: C Method of Delivery: F & O Campus: 1 & 5 CIP: 270303 30 Char: Math Found Machine Learning Effective: Spring 2022

EDUCATION

+ Online/Distance COE 3313	**Approved**	**COE 3313 Approval to Offer Online Campus 5 for COE 3313 Rehabilitation Services.** Method of Delivery: F & O Campus: 1, 2, & 5 Effective: Spring 2022
+Online/Distance COE 4013/6013	**Approved**	**COE 4013/6013 Approval to Offer Online Campus 5 for Facilitative Skills Development.** Method of Delivery: F & O Campus: 1, 2, & 5 Effective: Spring 2022
Modification EP 4143	**Passed Contingent**	**EP 4143 Aging and Disability.**
+Online/Distance PE 1091	**Approved**	**PE 1091 Approval to Offer Online Campus 5 for Contemporary Dance.** Method of Delivery: F & O Campus: 1, 2, & 5 Effective: Spring 2022
+Online/Distance PE 1263	**Approved**	**PE 1263 Approval to Offer Online Campus 5 for Methods of Teaching Rhythms.** Method of Delivery: F & O Campus: 1 & 5 Effective: Spring 2022
Modification PE 1323 +Online/Distance	**Approved**	**PE 1323 Approval to Offer Online Campus 5 for History and Appreciation of Dance.** Method of Instruction: C Method of Delivery: F & O Campus: 1, 2, & 5 Effective: Spring 2022

ENGINEERING

Addition CSE 1013 +Online/Distance +Gulf Coast	**Approved**	**CSE 1013 CSE AP Credit.** (3). Credit for Advanced Placement Computer Science Principles. Requires a score of 3 or higher on the AP Computer Science Principles exam. Method of Instruction: C Method of Delivery: F Campus: 1, 5, & 6 CIP: 110701 30 Char: CSE AP Credit Grade Mode: Pass/Fail Effective: Spring 2022
Addition CSE 4263/6263 +Online/Distance +Gulf Coast	**Passed Contingent**	**CSE 4263/6263 Web Application Security.**

Addition +Online/Distance +Gulf Coast	CSE 4683/6683	**Passed Contingent**	**CSE 4683/6683 Machine Learning and Soft Computing.**
Modification +Online/Distance	ECE 4512	**Passed Contingent**	**ECE 4512 EE Design I.**
+Online/Distance	ECE 4522	**Passed Contingent**	**ECE 4522 EE Design II.**
+Online/Distance	ECE 8673	**Approved**	**ECE 8673 Approval to Offer Computer Methods in Power System Analysis.** Method of Instruction: F & O Campus: 1, 2, 5, & 6 Effective: Spring 2022
Addition +Online/Distance	GE 8311	**Approved**	**GE 8311 MIL MENG Disaster Relief.** (1). (One hour lecture). An interdisciplinary perspective on the field of disaster management and humanitarian assistance while providing a broad-based understanding of the complexities of the disaster management cycle with a specific focus on risk reduction and resiliency. The course emphasizes skills and knowledge relevant to engineering focused students. Method of Instruction: C Method of Delivery: O Campus: 1 & 5 CIP: 140801 30 Char: MIL MENG Disaster Relief Effective: Spring 2022
Addition +Online/Distance	GE 8321	**Approved**	**GE 8321 MIL MENG Bridge Assessment for Military Operations.** (1). One hour lecture. Introduction of the many unique challenges associated with bridge engineering and assessment in support of military operations, which are significantly different to the civilian sector. Method of Instruction: C Method of Delivery: 0 Campus: 1 & 5 CIP: 140101 30 Char: MIL MENG Bridge Assessment Effective: Spring 2022

Addition GE 8331 +Online/Distance	**Approved**	**GE 8331 MIL MENG Intermodal Transportation Systems.** (1). One hour lecture. This course will utilize engineering concepts and logistics to address mobility concerns in military engineering, analyze the connectivity of these systems and discuss the ability of the military to push through lines of communication. Method of Instruction: C Method of Delivery: O Campus: 1 & 5 CIP: 140801 30 Char: MIL MENG Intermodal Trans Sys Effective: Spring 2022
Addition IE 4683/6683 +Online/Distance +Gulf Coast	**Approved**	**IE 4683/6683 Machine Learning with Industrial Engineering Applications.** (3). (Prerequisite: IE 4613/6613: Engineering Statistics I or equivalent; an approved computer programing elective course). Three hours lecture. An introduction to machine learning model design and development for use in IE applications. The topics will include the foundation of Python computational tools, regression, classification, and unsupervised learning. Method of Instruction: C Method of Delivery: F & O Campus: 1, 5, & 6 CIP: 143501 30 Char: Machine Learning with IE Appli Effective: Spring 2022

FOREST RESOURCES

Addition FO 8533 +Online/Distance	**Approved**	**FO 8533 Forest Stand Dynamics.** (3). Three hours lecture. Graduate course surrounding the study of changes in forest stand structure through time including during and after disturbances. Method of Instruction: C Method of Delivery: F & O Campus: 1 & 5 CIP: 030502 30 Char: Forest Stand Dynamics Effective: Spring 2022

VETERINARY MEDICINE

Addition CVM 4991/6991	**Tabled**	**CVM 4991/6991 Preparations for Study Abroad in Uganda.**

2. Program Proposals by college/school

ARTS AND SCIENCES

Modification	**Degree:** BA **Major:** Philosophy **Concentration:** Religion	**Approved**	Added REL 3033 to count for the writing requirement. Effective: Spring 2022

BUSINESS

Modification	**Degree:** Minor (Undergraduate) **Major:** Business Analytics	**Passed Contingent**	
Modification	**Degree:** Minor (Graduate) **Major:** Business Analytics	**Approved**	See proposal for list of revisions. Approved by the Graduate Council. Effective: Spring 2022
Modification	**Degree:** BBA **Major:** Business Administration, Business Economics, Business Information Systems, Finance, Management, Marketing, Supply Chain Logistics **Concentrations:** All concentrations	**Approved**	See proposal for a list of revisions. Effective: Spring 2022
Modification	**Degree:** BACC **Major:** Accounting **Concentrations:** All concentrations	**Approved**	See proposal for a list of revisions. Effective: Spring 2022

ENGINEERING

Modification	**Degree:** BS **Major:** Cybersecurity	**Approved**	See proposal for a list of revisions. Effective: Spring 2022
Modification	**Degree:** BS **Major:** Computer Science **Concentrations:** Systems, Artificial Intelligence, Computational Science, Human and Visual Computing	**Approved**	See proposal for a list of revisions. Effective: Spring 2022

All of the proposals were approved with the exception of the following:

Proposals**

_____

_____

Peter L. Ryan
Dr. Peter L. Ryan
Executive Vice Provost for Academic Affairs

November 19th, 2021
Date

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: Arts and Sciences **Department: Philosophy and Religion**

Contact Person: Joseph Witt **Mail Stop: 9577** **E-mail: jwitt@philrel.msstate.edu**

Nature of Change: Concentration course requirement change **Date Initiated: August 16, 2021**

Effective Date: Spring 2022

Current Degree Program Name: Bachelor of Arts in Philosophy

Major: Philosophy **Concentration: Religion**

New Degree Program Name: No Change

Major: No Change **Concentration: No Change**

Summary of Proposed Changes: Adding the course REL 3033 , Theory and Method in Religion, to count for the Writing Requirement for Philosophy majors with Religion concentration in the curriculum and academic rules on Banner.

Approved: | **Date:**

Department Head	8/17/21
Chair, College or School Curriculum Committee	8/26/21
Dean of College or School	9/3/21
Chair, University Committee on Courses and Curricula	11/9/21
Chair, Graduate Council(if applicable)	
Chair, Deans Council	November 19th, 2021

MISSISSIPPI STATE UNIVERSITY

COLLEGE OF ARTS & SCIENCES
Department or Philosophy & Religion
P.O. Box JS
233 Lee Blvd
MS State, MS 39762
P. 662.325.2382
www.philosophyandreligion.msstate.edu

August 16, 2021

To the Chair of the University Committee on Courses and Curriculum,

Please accept this letter of support on behalf of the Department of Philosophy and Religion Curriculum Committee regarding a proposed modification to the Philosophy major, Religion concentration requirements. Historically, Philosophy majors (including Religion concentration students) have been required to take PHI 3133 Seminar in Philosophy to fulfill the major's writing requirement. However, this course is generally only offered once a year. We are thus proposing the addition of REL 3033 Theory & Method in Religion as a second option to fulfill this writing requirement for Religion concentration students. To fulfill this major requirement, students would be able to choose between PHI 3133 or REL 3033. REL 3033 has already been formally added to the university course catalogue and addresses the same general writing objectives as the PHI 3133 course. Because PHI 3133 is typically only offered once a year, including REL 3033 in each alternate semester will provide students will more flexibility in meeting major requirements. This modification will also give students who are interested in the academic study of religion a more discipline-specific course option to meet the writing requirement for the major. The Department of Philosophy and Religion Curriculum Committee fully supports this modification. If you have any questions, please contact Dr. Joseph Witt.

Sincerely,

Department of Philosophy and Religion Curriculum Committee

Dr. Joseph Witt (chair) Joseph Witt
Associate Professor of Religion

Dr. Bart Moffat Barton Moffatt
Associate Professor of Philosophy

Dr. Robert Thompson
Associate Professor of Philosophy and Department Head

1. **Catalogue Description**

Religion refers to the basic human impulse to seek coherence in life, and to experience a sacred reality that guides and orders human existence. As an academic discipline the study of religion involves consideration of those writings, customs, and rituals that have historically served to form and distinguish religious groups. It includes examination of primitive religions and sectarian developments as well as study of the major world religions of both the east and west.

The Department of Philosophy and Religion offers a concentration in religion leading to the Bachelor of Arts degree in philosophy. This degree is an accepted major for graduate school, or for a career in a professional ministry or teaching. The religion concentration has a special pastoral track for students who wish to prepare for graduate seminary studies. The broad historical and cultural orientation of the philosophy degree with a religion concentration makes it an excellent preparation for any career. It is highly appropriate as a double major, or as a minor in association with another field of study.

The major with the concentration in religion has a requirement of 30 hours. Of these, nine hours are required in philosophy. The philosophy component may be satisfied by taking either a) Introduction to Philosophy, Introduction to Logic, and the Seminar in Philosophy, or b) History of Western Philosophy I and II, and the Seminar in Philosophy. The remaining 21 hours must include Introduction to Religion, World Religions I and II, six hours of REL courses, and six hours of REL or PHI courses which are to be selected in consultation with, approved by, the Religion advisor.

The Department also offers a minor in Religion, with the requirement being 15 hours of any REL courses.

2. **Curriculum Outline**

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 Arts in Philosophy Major: Philosophy Concentration: Religion	**Degree: Bachelor of Arts in Philosophy** Major: Philosophy Concentration: Religion
Philosophy is the study of the basic concepts—such as reality, truth, and goodness—which underlie the more specialized pursuits of science, art, education, religion, etc. Although students often study philosophy for its own sake, the general perspective it provides, and the critical thinking skills it develops, are of immense practical value in any profession. The baccalaureate degree in philosophy is the accepted major for those planning to enter graduate school in philosophy. It is, however, an excellent pre-law and pre-seminary degree and, because of its general nature, philosophy is highly appropriate as a double major with any other concentrated field of study. The standard program leading to the Bachelor of Arts degree in philosophy has a major requirement of 30 hours, including Introduction to Philosophy,	No change

Introduction to Logic, Introduction to Ethics, History of Western Philosophy parts I and II, and Seminar in Philosophy. The final 12 hours, including six that must be PHI courses, are to be selected in consultation with, and with approval by, the major advisor. The department also offers a minor in philosophy, with the requirements being 15 hours of PHI courses. Students considering either a major or minor in philosophy should meet with one of the department's advisors as early in their careers as possible.	
Concentration Description: Religion refers to the basic human impulse to seek coherence in life, and to experience a sacred reality that guides and orders human existence. As an academic discipline the study of religion involves consideration of those writings, customs, and rituals that have historically served to form and distinguish religious groups. It includes examination of primitive religions and sectarian developments as well as study of the major world religions of both the east and west. The Department of Philosophy and Religion offers a concentration in religion leading to the Bachelor of Arts degree in philosophy. This degree is an accepted major for graduate school, or for a career in a professional ministry or teaching. The religion concentration has a special pastoral track for students who wish to prepare for graduate seminary studies. The broad historical and cultural orientation of the philosophy degree with a religion concentration makes it an excellent preparation for any career. It is highly appropriate as a double major, or as a minor in association with another field of study. The major with the concentration in religion has a requirement of 30 hours. Of these, nine hours are required in philosophy. The philosophy component may be satisfied by taking either a) Introduction to Philosophy, Introduction to Logic, and the Seminar in Philosophy, or b) History of Western Philosophy I and II, and the Seminar in Philosophy. The remaining 21 hours must include Introduction to Religion, World Religions I and II, six hours of REL courses, and six hours of REL or PHI courses which are to be selected in consultation with, approved by, the Religion advisor. The Department also offers a minor in Religion, with the requirement being 15 hours of any REL courses.	Concentration Description: Religion refers to the basic human impulse to seek coherence in life, and to experience a sacred reality that guides and orders human existence. As an academic discipline the study of religion involves consideration of those writings, customs, and rituals that have historically served to form and distinguish religious groups. It includes examination of primitive religions and sectarian developments as well as study of the major world religions of both the east and west. The Department of Philosophy and Religion offers a concentration in religion leading to the Bachelor of Arts degree in philosophy. This degree is an accepted major for graduate school, or for a career in a professional ministry or teaching. The religion concentration has a special pastoral track for students who wish to prepare for graduate seminary studies. The broad historical and cultural orientation of the philosophy degree with a religion concentration makes it an excellent preparation for any career. It is highly appropriate as a double major, or as a minor in association with another field of study. The major with the concentration in religion has a requirement of 30 hours. Of these, nine hours are required in philosophy. The philosophy component may be satisfied by taking either a) Introduction to Philosophy, Introduction to Logic, and either the Seminar in Philosophy or Theory & Method in Religion, or b) History of Western Philosophy I and II, and either the Seminar in Philosophy or Theory & Method in Religion. The remaining 21 hours must include Introduction to Religion, World Religions I and II, six hours of REL courses, and six hours of REL or PHI courses which are to be selected in consultation with, approved by, the Religion advisor. The Department also offers a minor in Religion, with the requirement being 15 hours of any REL courses.

CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
English Composition:	6	English Composition:	6

EN 1103 English Comp I Or EN 1163 Accelerated Comp I EN 1113 English Comp II Or EN 1173 Accelerated Comp II		No Change	
Foreign Language: 3 semesters – one Foreign Language	9	Foreign Language: No Change	9
Humanities: Literature – see University/A&S Core History – see University/A&S Core Philosophy Elective – see major Humanities Elective – see major. Must be from 2 different areas – see A&S Core	 3 3 3 9	Humanities: No Change	 3 3 3 9
Math: MA 1313 College Algebra MA 1323 Trigonometry Or ST 2113 Intro to Stats	 3 3	Math: No Change	 3 3
Fine Arts: See University/A&S Requirements	3	Fine Arts: No Change	3
Natural Sciences: Physical Sciences w/lab (CH, GG, PH) Biological Sciences w/lab (BIO, EPP, PO) Natural Science Elective	 3 3 3	Natural Sciences: No Change	 3 3 3
Social Sciences: See A&S requirements Social Sciences Electives	 6 12	Social Sciences: No Change	 6 12
Concentration Core: REL 1103 Introduction to Religion REL 3213 World Religions I REL 3223 World Religions II Choose one of the following combinations: PHI 1103 Intro to Philosophy & PHI 1113 Intro to Logic PHI 3023 History of Western Philosophy I & 3033 History of Western Philosophy II	 3 3 3 6	Concentration Core: No Change	 3 3 3 6
Electives: REL/PHI Electives	12	Electives: No Change	12
Oral Communication Requirement: CO 1003 Fundamentals of Public Speaking	3	Oral Communication Requirement: No Change	3
Writing Requirement: PHI 3133 Seminar in Philosophy	3	Writing Requirement: PHI 3133 Seminar in Philosophy Or REL 3033 Theory & Method in Religion	3

Computer Literacy: **Choose one of the following:** TKT 1273 Computer Applications BIS 1012 Introduction to Business Information Systems CSE 1233 Computer Programming with C CSE 1273 Computer Programming with Java	3	**Computer Literacy:** **No Change**	3
General Electives: Consult advisor	19	General Electives: No Change	19
Total Hours	124	Total Hours	124

3. Justification and Student Learning Outcomes

The Writing Requirement is a fundamental component of the official Philosophy Major and Religion Concentration curricula. This requirement has previously been met by passing the course, PHI 3133 Seminar in Philosophy--a course generally offered only once a year. In PHI 3133, students produce a lengthy research paper that is then reviewed by the professor, with an opportunity for the student to revise and improve their final work. The learning objective is to provide students with concrete experience, guided by the professor, in producing academic research and writing in philosophy or religious studies. This curriculum modification proposal seeks to add the course REL 3033 Theory & Method in Religion as an option for students to fulfill this writing requirement in the official curriculum and the academic rules on Banner. REL 3033 is already an officially approved course in the university catalogue. While focused on a different discipline, REL 3033 also asks students to produce a lengthy research paper that is then reviewed by the professor and revised accordingly by the student. The class thus addresses the same fundamental learning objective as PHI 3133. The benefit of adding REL 3033 as a writing requirement option is that it provides students with a second class to meet this requirement, thus allowing more flexibility in their schedules when they previously had only one opportunity per year to take a required course. Such a change improves the ability of students to graduate in a timely manner, particularly those who might add the major late in their academic careers. It also provides those students with academic interest in religion (religion concentration students) with a more discipline-specific guide to academic research and writing.

-Will this program change meet local, state, regional, and national educational and cultural needs? NO
-Will this program change result in duplication in the System? NO
-Will this program change/advance student diversity within the discipline? NO
-Will this program change result in an increase in the potential placement of graduates in MS, the Southeast, and the U.S.? NO
-Will this program change result in an increase in the potential salaries of graduates in MS< the Southeast, and the U.S.? NO

4. Support

A letter of support from the Department of Philosophy and Religion curriculum committee is attached.

5. Effective Date

Spring 2022

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: College of Business Department: Marketing, Quantitative Analysis, and Business Law

Contact Person: Stephen L. France Mail Stop:9582 E-mail: sfrance@business.msstate.edu
Nature of Change: Additional Elective Courses Date Initiated: 08/06/2021
Effective Date: Spring 2022
Current Degree Program Name: Graduate Minor in Business Analytics

Major: N/A Concentration: N/A

New Degree Program Name: Minor in Business Analytics

Major: N/A Concentration: N/A

Summary of Proposed Changes:

The Graduate Minor in Business Analytics is in its third year of operation. We do not propose to make any major changes to the minor. There are two minor changes that will give more flexibility make it easier for students to complete the minor. These are described below.

The first change is to add an elective in "Business Decision Analysis" (BQA 6423). This is a split-level course that was not available when the minor was originally created. It will provide an elective option for non-business students. The second change is to add an elective in "Microcomputers and Networks" (BIS 6513). This course will teach students useful, practical skills needed by analytics professionals.

The minor is approved for online delivery, but thus far, students have been unable to take the minor online due to a lack of online options. Both added class are taught online and will provide additional "online available" electives.

Approved:	Date:
Department Head	10/1/21
Chair, College or School Curriculum Committee	10-5-21
Dean of College or School	10/6/21
Chair, University Committee on Courses and Curricula	10/27/21
Chair, Graduate Council(if applicable)	10/29/2021
Chair, Deans Council	November 19, 2024

GRADUATE DEGREE MODIFICATION OUTLINE FORM

Use the chart below to make modifications to an existing Graduate Degree. All deleted courses and information should be shown in *italics* and all new courses and information in **bold**. Please include the course prefix, number, and title in both columns. Expand rows as needed.

CURRENT Degree Description		PROPOSED Degree Description	
Degree: Graduate Minor in Business Analytics Concentrations: This minor is available as a concentration in the MBA program.		Degree: Graduate Minor in Business Analytics **for Master's level students.** Concentrations: This minor is available as a concentration in the MBA program.	
The College of Business offers a minor in Business Analytics to help MSU students prepare for careers in analytics across business disciplines. This minor offers interdisciplinary coursework in information systems, business quantitative analysis, and accounting. Each course in the minor goes beyond traditional business courses by focusing aspects of the learning on important nuances associated with a successful analytics career. The graduate business analytics minor is available to any MSU student, regardless of major. The Minor in Business Analytics is primarily designed to complement the Masters of Business Administration, Masters of Science in Information Systems, Masters of Public Accountancy, and Masters of Taxation.		The College of Business offers a minor in Business Analytics to help MSU students prepare for careers in analytics across business disciplines. This minor offers interdisciplinary coursework in information systems, business quantitative analysis, and accounting. Each course in the minor goes beyond traditional business courses by focusing aspects of the learning on important nuances associated with a successful analytics career. The graduate business analytics minor is available to any **master's level** MSU student, regardless of major. The Minor in Business Analytics is primarily designed to complement the Masters of Business Administration, Masters of Science in Information Systems, Masters of Public Accountancy, and Masters of Taxation.	
CURRENT CURRICULUM OUTLINE	Required Hours	**PROPOSED CURRICULUM OUTLINE**	Required Hours
Required Courses BIS 8413 Data Analytics BQA 6413 Business Forecasting and Predictive Analytics	6	**Required Courses** BIS 8413 Data Analytics BQA 6413 Business Forecasting and Predictive Analytics	6
Elective Courses ACC 8043 Fraud Examination BIS 8313 Advanced Database Design Administration EC 6643 Econ Forecasting & Analysis	3	**Elective Courses** ACC 8043 Fraud Examination **BIS 6513 Microcomputers and Networks** BIS 8313 Advanced Database Design Administration **BQA 6423 Business Decision Analysis** EC 6643 Econ Forecasting & Analysis	3
Total Hours	9	Total Hours	9

CURRENT Degree Description	PROPOSED Degree Description
Degree: Graduate Minor in Business Analytics Concentrations: This minor is available as a concentration in the MBA program.	Degree: Graduate Minor in Business Analytics **for Ph.D. level students.**
The College of Business offers a minor in Business Analytics to help MSU students prepare for careers in analytics across business disciplines. This minor offers interdisciplinary coursework in information systems, business quantitative analysis, and accounting. Each course in the minor goes beyond traditional business courses by focusing aspects of the learning on important nuances associated with a successful analytics career. The graduate business analytics minor is available to any MSU student, regardless of major. The Minor in Business Analytics is primarily designed to complement the Masters of Business Administration, Masters of Science in Information Systems, Masters of Public Accountancy, and Masters of Taxation.	The College of Business offers a minor in Business Analytics to help MSU students prepare for **academic careers in analytics across disciplines**. This minor offers interdisciplinary coursework in information systems, business quantitative analysis, and accounting. Each course in the minor goes beyond traditional business courses by focusing aspects of the learning on important nuances associated with a successful analytics career. **The Ph.D. level business analytics minor is available to any MSU Ph.D. student, regardless of major.** **Minor Field Preliminary Examination(s)—A four-hour written examination is required of students taking the minor.**

CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
Required Courses BIS 8413 Data Analytics BQA 6413 Business Forecasting and Predictive Analytics	6	**Required Courses** BIS 8413 Data Analytics BQA 6413 Business Forecasting and Predictive Analytics	6
Elective Courses ACC 8043 Fraud Examination BIS 8313 Advanced Database Design Administration EC 6643 Econ Forecasting & Analysis	3	**Elective Courses*** ACC 8043 Fraud Examination **BIS 6513 Microcomputers and Networks** BIS 8313 Advanced Database Design Administration **BQA 6423 Business Decision Analysis** EC 6643 Econ Forecasting & Analysis ***Students may replace one of the elective courses with an approved analytics focused graduate level independent study course in any business discipline.**	6
Total Hours	9	Total Hours	12

MISSISSIPPI STATE UNIVERSITY

Department of Management and Information Systems
College of Business

To: University Committee on Courses and Curricula

From: BIS Faculty, Management & Information Systems Department

Date: July 19, 2021

The BIS faculty have reviewed the proposed modification to the graduate minor in business analytics. We support this proposal and appreciate your consideration of it. If you have any questions, or need any additional information, please contact Dr. Robert Otondo at rotondo@business.msstate.edu.

Thank you for your time in considering this request.

Dr. Laura Marler, Department Head

Dr. Dae Youp Kang

Dr. Kent Marett

Dr. Robert Otondo

Dr. David Sikolia

Dr. Merrill Warkentin

Mr. Steve Canfield

302 McCool Hall • Box 9581 • Mississippi State, MS 39762 • (662)325-3928 • (662)325-8651 Fax • http://business.msstate.edu

To: University Committee on Courses and Curricula

From: BQA Faculty, Marketing, Quantitative Analysis and Business Law Department

Date: July 21, 2021

The Business Quantitative Analysis faculty have reviewed the proposed modifications to the Graduate Minor in Business Analytics.

We support these proposed modifications and appreciate your consideration of it. If you have any questions, or need any additional information, please contact Dr. Stephen L. France at sfrance@business.msstate.edu.

Dr. Melissa Moore, Department Head

Dr. Stephen L. France, Associate Professor

Dr. Yueran Zhuo, Assistant Professor

Dr. Iva Ballard, Lecturer

Dr. Sheida Riahi, Lecturer

France, Stephen

From: Moore, Robert
Sent: Friday, July 23, 2021 12:15 PM
To: France, Stephen
Subject: Letter of support

Dear Stephen,

Here are the support letter approvals from our colleagues!

Rob

From: Zhuo, Yueran <yzhuo@business.msstate.edu>
Sent: Thursday, July 22, 2021 7:20 PM
To: Moore, Robert <RMoore@business.msstate.edu>; Riahi, Sheida <sr1315@msstate.edu>; Ballard, Iva <IBallard@business.msstate.edu>
Cc: France, Stephen <sfrance@business.msstate.edu>; Moore, Melissa <mmoore@business.msstate.edu>
Subject: RE: Graduate Minor Change

Dear Dr. Moore,

I have no objections to the minor changes proposed in this draft.

All best,
Yueran

From: Sheida Riahi <sr1315@msstate.edu>
Sent: Thursday, July 22, 2021 3:44 PM
To: Ballard, Iva <IBallard@business.msstate.edu>
Cc: Moore, Robert <RMoore@business.msstate.edu>; Zhuo, Yueran <yzhuo@business.msstate.edu>; France, Stephen <sfrance@business.msstate.edu>; Moore, Melissa <mmoore@business.msstate.edu>
Subject: Re: Graduate Minor Change

Dear Dr. Moore,

Thank you for the email. I have no objections to the changes for the Business Analytics minor.

Best regards,
Sheida

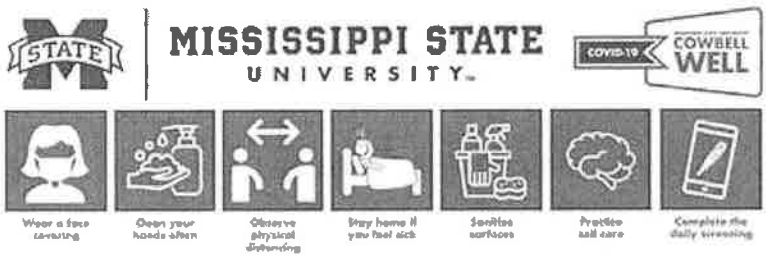
From: Ballard, Iva <IBallard@business.msstate.edu>
Sent: Thursday, July 22, 2021 1:30 PM
To: Moore, Robert <RMoore@business.msstate.edu>; Zhuo, Yueran <yzhuo@business.msstate.edu>; Riahi, Sheida <sr1315@msstate.edu>
Cc: France, Stephen <sfrance@business.msstate.edu>; Moore, Melissa <mmoore@business.msstate.edu>
Subject: Re: Graduate Minor Change

Dr. Moore,

I approve of the changes for the Business Analytics minor.

All the best,
Iva B. Ballard

Robert S. Moore, Ph.D.
Hunter Henry Fellow & Professor of Marketing
Department of Marketing, Quantitative Analysis & Business Law
324 H McCool
Call/text via cell
(662) 312-6520



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: Business Department: n/a

Contact Person: Kevin Rogers Mail Stop: 9588 E-mail: kevin.rogers@msstate.edu
Nature of Change: Modification Date Initiated: Fall 2021 Effective Date: Spring 2022

Current Degree Program Name: Bachelor of Business Administration
Major: Business Administration, Business Economics, Business Information Systems, Finance, Management, Marketing, Supply Chain Logistics
Concentration: applies to all concentrations

New Degree Program Name: Bachelor of Business Administration
Major: Business Administration, Business Economics, Business Information Systems, Finance, Management, Marketing, Supply Chain Logistics
Concentration: applies to all concentrations

Summary of Proposed Changes:

- Add EN 1104 as an alternative to EN 1103
- Add MA 1713 as an alternative to MA 1613
- Add MA 2113 and ST 2113 as alternatives to BQA 2113
- Add TECH 1273 as an alternative to BIS 1012
- Convert Non-business electives to Free electives based on AACSB changes

Approved: Date:

Ken Rogers — 10/1/21
Department Head

[signature] — 10-5-21
Chair, College or School Curriculum Committee

Ken Rogers — 10/6/21
Dean of College or School

[signature] — 11/9/21
Chair, University Committee on Courses and Curricula

Peter L. Ryan — November 19th, 2021
Chair, Deans Council

1. CATALOG DESCRIPTION
   No changes to catalog description

2. CURRICULUM OUTLINE

CURRENT Degree Description		PROPOSED Degree Description	
Degree: Bachelor of Business Administration Major: Business Administration, Business Economics, Business Information Systems, Finance, Management, Marketing, Supply Chain Logistics Concentration: applies to all concentrations		Degree: Bachelor of Business Administration Major: Business Administration, Business Economics, Business Information Systems, Finance, Management, Marketing, Supply Chain Logistics Concentration: applies to all concentrations	
No changes to catalog description		No changes to catalog description	
CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
English EN 1103 or EN 1163 EN 1113 or EN 1173	6	English EN 1103 or EN 1163 **or EN 1104** EN 1113 or EN 1173	6
Mathematics MA 1313 MA 1613 BQA 2113	9	Mathematics MA 1313 MA 1613 **or MA 1713** BQA 2113 **or MA 2113 or ST 2113**	9
Fine Arts (General Education):	3	Fine Arts (General Education):	3
Science 2 Lab Sciences from Gen Ed	6	Science 2 Lab Sciences from Gen Ed	6
Humanities (General Education):	6	Humanities (General Education):	6
Social/Behavioral Sciences PS 1113 Choose one from General Education courses excluding AEC and EC	6	Social/Behavioral Sciences PS 1113 Choose one from General Education courses excluding AEC and EC	6
College Core	44	College Core	44

BQA 3123 ACC 2013 ACC 2023 EC 2113 EC 2123 BL 2413 BIS 3233 MKT 3323 FIN 3123 MKT 3013 MGT 3113 BUS 4853 Oral Communication Requirement CO 1003 or CO 1013 Computer Literacy Requirement BIS 1012 Writing Requirement MGT 3213		BQA 3123 ACC 2013 ACC 2023 EC 2113 EC 2123 BL 2413 BIS 3233 MKT 3323 FIN 3123 MKT 3013 MGT 3113 BUS 4853 Oral Communication Requirement CO 1003 or CO 1013 Computer Literacy Requirement BIS 1012 **or TECH 1273** Writing Requirement MGT 3213	
Major Core & Electives Varies by major and concentration Business Administration *Non-Business electives 13* Free electives *3* Business Economics *Non-Business electives 12* Free electives *10* Finance (& RMI conc) *Non-Business electives 13* Free electives *3* Management *Non-Business electives 15* Free electives *4* Marketing *Non-Business electives 13* Free electives *6* Supply Chain Logistics *Non-Business electives 13* Free electives *6*	43	Major Core & Electives Varies by major and concentration Business Administration Free electives **16** Business Economics Free electives **22** Finance (& RMI conc) Free electives **16** Management Free electives **19** Marketing Free electives **19** Supply Chain Logistics Free electives **19**	43
Total Hours	123	Total Hours	123

3. JUSTIFICATION AND STUDENT LEARNING OUTCOMES

All of the majors and concentrations under the Bachelor of Business Administration, share common English, math, and computer literacy requirements. It has been the practice to allow students to apply similar courses in place of the prescribed courses. This modification formalizes the acceptable alternatives so that they can be documented and included in current and future degree audit systems.

Additionally, for at least 20 years, most of the undergraduate majors in the College of Business have listed both "Non-business electives" and "Free electives" in programs of study. The non-business elective designation is a relic of AACSB standards 2-3 versions ago. The current AACSB standards no longer require this designation, so all of these elective hours can now be grouped as free electives. This modification combines non-business and free electives into just free electives so that they can be documented and included in current and future degree audit systems.

Student Learning Outcomes

- Critical Thinking: Students will be able to analyze and integrate information to solve problems and make business decisions.
- Data Analysis Using Information Technology: Students will demonstrate proficiency in the use of information technology tools and concepts vital to productivity.
- Communication: Students will demonstrate proficiency in written and spoken communication skills.
- Ethics: Students will demonstrate an understanding of the ethical and legal ramifications of business decisions.
- Diversity: Students will understand the impact of a demographically and culturally diverse business environment.

4. SUPPORT

5. PROPOSED 4-LETTER ABBREVIATION
   Majors included: BIS, BUAD, ECO, FINA, MGT, MKT, SCLO

6. EFFECTIVE DATE
   Spring 2022

From: Punday, Dan
To: Rogers, Kevin
Subject: Re: support for UCCC proposal - applying EN 1104 in business and accounting degrees
Date: Tuesday, October 5, 2021 9:51:58 AM

I support allowing EN 1104 as an alternative to EN 1103 in the BBA and BACC degrees. Let me know if you need anything more formal that this email in support of this proposal.

Dan

On Oct 5, 2021, at 9:07 AM, Rogers, Kevin <KRogers@business.msstate.edu> wrote:

Dr. Punday,
I am requesting a letter of support for two UCCC proposals, one for the Bachelor of Business Administration (BBA) degree and one for the Bachelor of Accountancy (BACC) degree.

The specific issue relevant to the Department of English, is for the BBA and BACC degrees to allow EN 1104 as an alternative to EN 1103. The Registrar's office is asking us to make this formal through a UCCC proposal so that it can be documented and added to CAPP and the new degree audit system being built.

If you support this proposal, you can just reply to this email to confirm. That should be sufficient documentation for the UCCC process.

Thanks for your consideration,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

<BBA modification 10.21.pdf><BACC modification 10.21.pdf>

From: Razzaghi, Mohsen
To: Rogers, Kevin
Subject: RE: support for UCCC proposal-MA courses in business and accounting degrees
Date: Tuesday, October 5, 2021 3:51:48 PM

Dr. Rogers,

The Department of Mathematics and Statistics supports the two UCCC proposals in the following email.

Best regards,
Mohsen

Mohsen Razzaghi
Giles Distinguished Professor
Head, Department of Mathematics and Statistics
Mississippi State University
(662) 325-3414 Department
(662) 325-7132 Office

From: Rogers, Kevin <KRogers@business.msstate.edu>
Sent: Tuesday, October 5, 2021 8:57 AM
To: Razzaghi, Mohsen <razzaghi@math.msstate.edu>
Subject: support for UCCC proposal-MA courses in business and accounting degrees

Dr. Razzaghi,
I am requesting a letter of support for two UCCC proposals, one for the Bachelor of Business Administration (BBA) degree and one for the Bachelor of Accountancy (BACC) degree.

The specific issue relevant to the Department of Mathematics and Statistics, is for the BBA and BACC degrees to allow:

- MA 1713 Calculus I as an alternative to MA 1613 Business Calculus
- MA/ST 2113 Introduction to Statistics as an alternative to BQA 2113 Business Statistical Methods I

For at least the past 10 years, we have allowed these substitutions. Some students start in a non-business major and already have one or both of these courses when changing to the BBA or BACC. Also, many transfer students take one or both of these before enrolling in the BBA or BACC at MSU. We have always believed it is unnecessary to make a student take MA 1613 if they already completed 1713, or BQA 2113 if they already completed MA/ST 2113. The Registrar's office is asking us to make this formal through a UCCC proposal so that it can be documented and added to CAPP and the new degree audit system being built.

If you support this proposal, you can just reply to this email to confirm. That should be sufficient documentation for the UCCC process.

Thanks for your consideration,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

From: Bray, Marty
To: Rogers, Kevin
Subject: Re: support for UCCC proposal-TECH 1273 in business and accounting
Date: Tuesday, October 5, 2021 2:13:35 PM

Kevin:
I checked with my faculty as well as Associate Dean and they are good with the proposal. I am also fine with it.
Many thanks!
Marty

Dr. Marty Bray
Associate Professor and Department Head
Instructional Systems and Workforce Development
Mississippi State University

From: Rogers, Kevin <KRogers@business.msstate.edu>
Date: Tuesday, October 5, 2021 at 9:03 AM
To: Bray, Marty <mbray@colled.msstate.edu>
Subject: support for UCCC proposal-TECH 1273 in business and accounting

Dr. Bray,
I am requesting a letter of support for two UCCC proposals, one for the Bachelor of Business Administration (BBA) degree and one for the Bachelor of Accountancy (BACC) degree.

The specific issue relevant to the Department of Instructional Systems and Workforce Development, is for the BBA and BACC degrees to allow TECH 1273 as an alternative to our course BIS 1012. For at least the past 10 years, we have allowed this substitution. Some students start in a non-business major and already have this course (or TKT 1273 previously) when changing to the BBA or BACC. Also, many transfer students take this course before enrolling in the BBA or BACC at MSU. We have always believed it is unnecessary to make a student take BIS 1012 if they already completed TECH 1273. The Registrar's office is asking us to make this formal through a UCCC proposal so that it can be documented and added to CAPP and the new degree audit system being built.

If you support this proposal, you can just reply to this email to confirm. That should be sufficient documentation for the UCCC process.

Thanks for your consideration,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

MISSISSIPPI STATE UNIVERSITY

COLLEGE OF BUSINESS
Office of the Dean

P.O. Box 5288
114 McCool Hall
Mississippi State, MS 39762

P. 662.325.2580
F. 662.325.2410
www.business.msstate.edu

Date: October 6, 2021

To: University Committee on Courses and Curricula

From: College of Business Curriculum Committee

Subject: Letter of Support for modification of the BBA

We support the proposal to modify the BBA

Faculty:	Support	Do not support
_____see attached email_____ Randall Campbell, Professor of Economics	_____	_____
_____ see attached email _____ Kulraj Singh, Assistant Professor of Management	_____	_____
_____ see attached email _____ Rob Moore, Professor of Marketing	_____	_____
_____ see attached email _____ Brad Lang, Assistant Professor of Accounting	_____	_____
_____ see attached email _____ Yingge Qu, Associate Professor of Marketing	_____	_____

From: Campbell, Randall
To: Rogers, Kevin
Subject: RE: Modification to BBA - letter of support
Date: Wednesday, October 6, 2021 8:40:16 AM

I support the proposed modification to the BBA.

Randy Campbell

From: Rogers, Kevin <KRogers@business.msstate.edu>
Sent: Wednesday, October 6, 2021 8:38 AM
To: Campbell, Randall <RCampbell@business.msstate.edu>; Moore, Robert <RMoore@business.msstate.edu>; Singh, Kulraj <kulraj.singh@msstate.edu>; Lang, Brad <blang@business.msstate.edu>; Qu, Yingge <yqu@meridian.msstate.edu>
Subject: Modification to BBA - letter of support

I have compiled everything for the proposal to modify the BBA, except a letter of support from the faculty. Can each of you reply to this email and state whether you support or do not support the modification to the BBA?
Thanks,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

From: Singh, Kulraj
To: Rogers, Kevin
Subject: Re: Modification to BBA - letter of support
Date: Wednesday, October 6, 2021 11:46:46 AM

Hi Kevin:

I support the modification.

Regards,
Kulraj

From: "Rogers, Kevin" <KRogers@business.msstate.edu>
Date: Wednesday, October 6, 2021 at 6:38 AM
To: "Campbell, Randall" <RCampbell@business.msstate.edu>, "Moore, Robert" <RMoore@business.msstate.edu>, "Singh, Kulraj" <kulraj.singh@msstate.edu>, "Lang, Brad" <blang@business.msstate.edu>, "Qu, Yingge" <yqu@meridian.msstate.edu>
Subject: Modification to BBA - letter of support

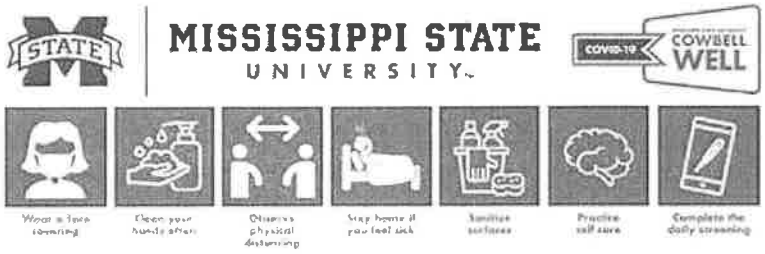
I have compiled everything for the proposal to modify the BBA, except a letter of support from the faculty. Can each of you reply to this email and state whether you support or do not support the modification to the BBA?
Thanks,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

From: Moore, Robert
To: Rogers, Kevin
Subject: RE: Modification to BBA - letter of support
Date: Wednesday, October 6, 2021 11:25:15 AM

I support the modification.

Robert S. Moore, Ph.D.
Hunter Henry Fellow & Professor of Marketing
Department of Marketing, Quantitative Analysis & Business Law
324 H McCool
Office: (662) 325-8648



From: Rogers, Kevin
Sent: Wednesday, October 6, 2021 8:38 AM
To: Campbell, Randall <RCampbell@business.msstate.edu>; Moore, Robert <RMoore@business.msstate.edu>; Singh, Kulraj <kulraj.singh@msstate.edu>; Lang, Brad <blang@business.msstate.edu>; Qu, Yingge <yqu@meridian.msstate.edu>
Subject: Modification to BBA - letter of support

I have compiled everything for the proposal to modify the BBA, except a letter of support from the faculty. Can each of you reply to this email and state whether you support or do not support the modification to the BBA?
Thanks,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

From: Lang, Brad
To: Rogers, Kevin
Subject: RE: Modification to BBA - letter of support
Date: Wednesday, October 6, 2021 9:24:54 AM

Hi Kevin,

I support the modification.

R,
Brad Lang

From: Rogers, Kevin <KRogers@business.msstate.edu>
Sent: Wednesday, October 6, 2021 8:38 AM
To: Campbell, Randall <RCampbell@business.msstate.edu>; Moore, Robert <RMoore@business.msstate.edu>; Singh, Kulraj <kulraj.singh@msstate.edu>; Lang, Brad <blang@business.msstate.edu>; Qu, Yingge <yqu@meridian.msstate.edu>
Subject: Modification to BBA - letter of support

I have compiled everything for the proposal to modify the BBA, except a letter of support from the faculty. Can each of you reply to this email and state whether you support or do not support the modification to the BBA?
Thanks,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

From: Qu, Yingge
To: Rogers, Kevin
Subject: RE: Modification to BBA - letter of support
Date: Wednesday, October 6, 2021 8:40:22 AM

Hello, Dr. Rogers,

Thank you for sending the proposal. I support the modification.

Yingge

From: Rogers, Kevin <KRogers@business.msstate.edu>
Sent: Wednesday, October 6, 2021 8:38 AM
To: Campbell, Randall <RCampbell@business.msstate.edu>; Moore, Robert <RMoore@business.msstate.edu>; Singh, Kulraj <kulraj.singh@msstate.edu>; Lang, Brad <blang@business.msstate.edu>; Qu, Yingge <yqu@meridian.msstate.edu>
Subject: Modification to BBA - letter of support

I have compiled everything for the proposal to modify the BBA, except a letter of support from the faculty. Can each of you reply to this email and state whether you support or do not support the modification to the BBA?
Thanks,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

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: Business **Department:** n/a

Contact Person: Kevin Rogers **Mail Stop:** 9588 **E-mail:** kevin.rogers@msstate.edu
Nature of Change: Modification **Date Initiated:** Fall 2021 **Effective Date:** Spring 2022

Current Degree Program Name: Bachelor of Accountancy
Major: Accounting **Concentration:** applies to all concentrations

New Degree Program Name: Bachelor of Accountancy
Major: Accounting **Concentration:** applies to all concentrations

Summary of Proposed Changes:

- Add EN 1104 as an alternative to EN 1103
- Add MA 1713 as an alternative to MA 1613
- Add MA 2113 and ST 2113 as alternatives to BQA 2113
- Add TECH 1273 as an alternative to BIS 1012

Approved:	Date:
Department Head	10.5.21
Chair, College or School Curriculum Committee	10/5/21
Dean of College or School	10/6/21
Chair, University Committee on Courses and Curricula	11/9/21
Chair, Deans Council	November 19th, 2021

1. CATALOG DESCRIPTION
   No changes to catalog description

2. CURRICULUM OUTLINE

CURRENT Degree Description		PROPOSED Degree Description	
Degree: Bachelor of Accountancy Major: Accounting Concentration: applies to all concentrations		Degree: Bachelor of Accountancy Major: Accounting Concentration: applies to all concentrations	
No changes to catalog description		No changes to catalog description	
CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
English EN 1103 or EN 1163 EN 1113 or EN 1173	6	English EN 1103 or EN 1163 **or EN 1104** EN 1113 or EN 1173	6
Mathematics & Statistics MA 1313 MA 1613	6	Mathematics & Statistics MA 1313 MA 1613 **or MA 1713**	6
Fine Arts (General Education):	3	Fine Arts (General Education):	3
Natural Science 2 Lab Sciences from Gen Ed	6	Science 2 Lab Sciences from Gen Ed	6
Humanities (General Education):	6	Humanities (General Education):	6
Social/Behavioral Sciences PS 1113 Choose one from General Education courses excluding AEC and EC	6	Social/Behavioral Sciences PS 1113 Choose one from General Education courses excluding AEC and EC	6
Accounting Major Requirements		Accounting Major Requirements	
Oral Communication Requirement CO 1003 or CO 1013	3	Oral Communication Requirement CO 1003 or CO 1013	3
Computer Literacy (grade of C or higher)		Computer Literacy (grade of C or higher)	

BIS 1012		BIS 1012 **or TECH 1273**	
International Elective	3	International Elective	3
BIS 1012 ACC 2013 ACC 2023 BQA 2113 EC 2113 EC 2123 BL 2413	2 3 3 3 3 3 3	BIS 1012 **or TECH 1273** ACC 2013 ACC 2023 BQA 2113 **or MA 2113 or ST 2113** EC 2113 EC 2123 BL 2413	2 3 3 3 3 3 3
Business Ethics PHI 3013	3	Business Ethics PHI 3013	3
Writing/Communications Course Choose one of the following: EN 3303 EN 4223 CO 2253 CO 3213 EN 3313 EDF 3413	3	Writing/Communications Course Choose one of the following: EN 3303 EN 4223 CO 2253 CO 3213 EN 3313 EDF 3413	3
Upper-level Business Courses MGT 3113 MGT 3213 BQA 3123 BL 3223 MKT 3013 BIS 3233 FIN 3123 BUS 4853	24	Upper-level Business Courses MGT 3113 MGT 3213 BQA 3123 BL 3223 MKT 3013 BIS 3233 FIN 3123 BUS 4853	24
Upper-level Accounting Courses ACC 3003 ACC 3013 ACC 3023 ACC 3033 ACC 3053 ACC 4013 ACC 4033 ACC 4023 ACC 4043 Free Electives (Consult Advisor)	27 7	Upper-level Accounting Courses ACC 3003 ACC 3013 ACC 3023 ACC 3033 ACC 3053 ACC 4013 ACC 4033 ACC 4023 ACC 4043 Free Electives (Consult Advisor)	27 7
Total Hours	123	Total Hours	123

3. JUSTIFICATION AND STUDENT LEARNING OUTCOMES

For a number of years, the Bachelor of Accountancy has allowed for the substitution of similar courses to meet general education requirements in English, math, statistics, and computer literacy. This modification formalizes the acceptable alternatives so that they can be documented and included in current and future degree audit systems.

Student Learning Outcomes

- Critical Thinking: Students will be able to analyze and integrate information to solve problems and make business decisions.
- Data Analysis Using Information Technology: Students will demonstrate proficiency in the use of information technology tools and concepts vital to productivity.
- Communication: Students will demonstrate proficiency in written and spoken communication skills.
- Ethics: Students will demonstrate an understanding of the ethical and legal ramifications of business decisions.
- Diversity: Students will understand the impact of a demographically and culturally diverse business environment.

4. SUPPORT

5. PROPOSED 4-LETTER ABBREVIATION
   Majors included: ACC

6. EFFECTIVE DATE
   Spring 2022

From: Punday, Dan
To: Rogers, Kevin
Subject: Re: support for UCCC proposal - applying EN 1104 in business and accounting degrees
Date: Tuesday, October 5, 2021 9:51:58 AM

I support allowing EN 1104 as an alternative to EN 1103 in the BBA and BACC degrees. Let me know if you need anything more formal that this email in support of this proposal.

Dan

On Oct 5, 2021, at 9:07 AM, Rogers, Kevin <KRogers@business.msstate.edu> wrote:

Dr. Punday,
I am requesting a letter of support for two UCCC proposals, one for the Bachelor of Business Administration (BBA) degree and one for the Bachelor of Accountancy (BACC) degree.

The specific issue relevant to the Department of English, is for the BBA and BACC degrees to allow EN 1104 as an alternative to EN 1103. The Registrar's office is asking us to make this formal through a UCCC proposal so that it can be documented and added to CAPP and the new degree audit system being built.

If you support this proposal, you can just reply to this email to confirm. That should be sufficient documentation for the UCCC process.

Thanks for your consideration,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

<BBA modification 10.21.pdf><BACC modification 10.21.pdf>

From: Razzaghi, Mohsen
To: Rogers, Kevin
Subject: RE: support for UCCC proposal-MA courses in business and accounting degrees
Date: Tuesday, October 5, 2021 3:51:48 PM

Dr. Rogers,

The Department of Mathematics and Statistics supports the two UCCC proposals in the following email.

Best regards,
Mohsen

Mohsen Razzaghi
Giles Distinguished Professor
Head, Department of Mathematics and Statistics
Mississippi State University
(662) 325-3414 Department
(662) 325-7132 Office

From: Rogers, Kevin <KRogers@business.msstate.edu>
Sent: Tuesday, October 5, 2021 8:57 AM
To: Razzaghi, Mohsen <razzaghi@math.msstate.edu>
Subject: support for UCCC proposal-MA courses in business and accounting degrees

Dr. Razzaghi,
I am requesting a letter of support for two UCCC proposals, one for the Bachelor of Business Administration (BBA) degree and one for the Bachelor of Accountancy (BACC) degree.

The specific issue relevant to the Department of Mathematics and Statistics, is for the BBA and BACC degrees to allow:

- MA 1713 Calculus I as an alternative to MA 1613 Business Calculus
- MA/ST 2113 Introduction to Statistics as an alternative to BQA 2113 Business Statistical Methods I

For at least the past 10 years, we have allowed these substitutions. Some students start in a non-business major and already have one or both of these courses when changing to the BBA or BACC. Also, many transfer students take one or both of these before enrolling in the BBA or BACC at MSU. We have always believed it is unnecessary to make a student take MA 1613 if they already completed 1713, or BQA 2113 if they already completed MA/ST 2113. The Registrar's office is asking us to make this formal through a UCCC proposal so that it can be documented and added to CAPP and the new degree audit system being built.

If you support this proposal, you can just reply to this email to confirm. That should be sufficient documentation for the UCCC process.

Thanks for your consideration,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

From: Bray, Marty
To: Rogers, Kevin
Subject: Re: support for UCCC proposal-TECH 1273 in business and accounting
Date: Tuesday, October 5, 2021 2:13:35 PM

Kevin:
I checked with my faculty as well as Associate Dean and they are good with the proposal. I am also fine with it.
Many thanks!
Marty

Dr. Marty Bray
Associate Professor and Department Head
Instructional Systems and Workforce Development
Mississippi State University

From: Rogers, Kevin <KRogers@business.msstate.edu>
Date: Tuesday, October 5, 2021 at 9:03 AM
To: Bray, Marty <mbray@colled.msstate.edu>
Subject: support for UCCC proposal-TECH 1273 in business and accounting

Dr. Bray,
I am requesting a letter of support for two UCCC proposals, one for the Bachelor of Business Administration (BBA) degree and one for the Bachelor of Accountancy (BACC) degree.

The specific issue relevant to the Department of Instructional Systems and Workforce Development, is for the BBA and BACC degrees to allow TECH 1273 as an alternative to our course BIS 1012. For at least the past 10 years, we have allowed this substitution. Some students start in a non-business major and already have this course (or TKT 1273 previously) when changing to the BBA or BACC. Also, many transfer students take this course before enrolling in the BBA or BACC at MSU. We have always believed it is unnecessary to make a student take BIS 1012 if they already completed TECH 1273. The Registrar's office is asking us to make this formal through a UCCC proposal so that it can be documented and added to CAPP and the new degree audit system being built.

If you support this proposal, you can just reply to this email to confirm. That should be sufficient documentation for the UCCC process.

Thanks for your consideration,
Kevin

Kevin Rogers
Paul and Mary Jo Karre Associate Dean
Professor of Economics
Mississippi State University
PO Box 5288
Mississippi State, MS 39762
662-325-2580

October 6, 2021

To the University Courses & Curriculum Committee:

The faculty of the Adkerson School of Accountancy support the modification of the Bachelor in Accountancy curriculum.

Nathan Berglund

Joshua Hunt

Casey Camors

Brad Lang

Kevin Ennis

Shawn Mauldin

Joseph Faello

Lauren Milbach

Victor Ferguson

Mike Truelson

Emily Hunt

October 6, 2021

To the University Courses & Curriculum Committee:

The faculty of the Adkerson School of Accountancy support the modification of the Bachelor in Accountancy curriculum.

Nathan Berglund

Joshua Hunt

Casey Camors

Brad Lang

Kevin Ennis

Shawn Mauldin

Joseph Faello

Joseph Faello

Lauren Milbach

Victor Ferguson

Mike Truelson

Emily Hunt

From: Berglund, Nathan
To: Rogers, Kevin
Subject: FW: Respond With Support for Curriculum Changes
Date: Thursday, October 21, 2021 5:12:35 PM
Attachments: image001.png
image002.png
image003.png
image004.png
Faello Signatures.pdf
Starkville Signatures.pdf

Kevin,
Attached is the signature page for all Starkville faculty and a page for Joseph Faello at Meridian. I have not yet received a signature from Kevin Ennis at Meridian, but his email approval is below.

Nathan Berglund

From: Ennis, Kevin
Sent: Thursday, October 7, 2021 12:22 PM
To: Berglund, Nathan <nberglund@business.msstate.edu>
Subject: RE: Respond With Support for Curriculum Changes

From Kevin Ennis- MSU-Meridian.
I support the changes.
Kevin

From: Berglund, Nathan <nberglund@business.msstate.edu>
Sent: Thursday, October 7, 2021 10:49 AM
To: Camors, Casey <ccamors@business.msstate.edu>; Ennis, Kevin <KEnnis@meridian.msstate.edu>; Ferguson, Victor <vcf22@msstate.edu>; Hunt, Emily <ehunt@business.msstate.edu>; Hunt, Joshua <jhunt@business.msstate.edu>; Truelson, Mike <mtruelson@business.msstate.edu>
Subject: RE: Respond With Support for Curriculum Changes
Importance: High

Please respond with your support decision so I can get the word to Kevin ASAP.

Thanks!

From: Berglund, Nathan
Sent: Wednesday, October 06, 2021 11:32 AM
To: Camors, Casey <ccamors@business.msstate.edu>; Ennis, Kevin <KEnnis@meridian.msstate.edu>; Faello, Joseph <jfaello@meridian.msstate.edu>; Ferguson, Victor <vcf22@msstate.edu>; Hunt, Emily <ehunt@business.msstate.edu>; Hunt, Joshua <jhunt@business.msstate.edu>; Lang, Brad <blang@business.msstate.edu>; Mauldin, Shawn <smauldin@business.msstate.edu>; Milbach, Lauren <lmilbach@business.msstate.edu>; Truelson, Mike <mtruelson@business.msstate.edu>
Subject: Respond With Support for Curriculum Changes

Faculty,
We are working to synergize approved substitute classes across the college of business curriculum, advising, and program planning lists. See the attached .pdf document with proposed additions. We require a letter of support from tenured and tenure-track faculty. **Please respond immediately to let me know if you**

support the changes. Within the next week, please sign the support document in the copy room.

Reach out to myself or Trina with any questions. Thank you!

Nathan R Berglund, PhD, CPA
Associate Professor of Accountancy
Adkerson School of Accountancy
College of Business
McCool Hall 300 O
Mississippi State, MS 39762
O: 662-325-1638
https://www.business.msstate.edu/directory/nb965

MISSISSIPPI STATE UNIVERSITY™
RICHARD C. ADKERSON
SCHOOL OF ACCOUNTANCY

MISSISSIPPI STATE UNIVERSITY™

COVID-19 COWBELL WELL

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: Bagley College of Engineering

Department: Computer Science and Engineering

Contact Person: Dr. George Trawick

Mail Stop: 9637 E-mail: trawick@cse.msstate.edu

Nature of Change: Degree modification

Date Initiated: 01/15/2021 Effective Date: Spring 2021

Current Degree Program Name: BS

Major: Cybersecurity

Concentration:

New Degree Program Name: BS

Major: Cybersecurity

Concentration:

Summary of Proposed Changes: This modification is being made to bring the BS in Cybersecurity into alignment with the BS in Computer Science and BS in Software Engineering curricula, which were changed in 2020. The modification is also begin made to accommodate recently-developed accreditation criteria for cybersecurity programs. Proposed changes include:

1. Adding additional options for science electives
2. Reducing the credit hours of CSE 1002
3. Adding CSE 2213 and CSE 3183 Systems Programming to enable students to learn core computing concepts earlier in the curriculum
4. Adding CSE 3723 Computer Organization to cover hardware requirements necessary for accreditation
5. Adding a statistics requirement as required for accreditation
6. Removing public speaking requirement to bring degree into alignment with other degrees in the CSE department, as that topic is addressed in other courses, such as CSE 2213.
7. Changing the level of CSE 4763 Ethical & Legal Issues to CSE 3763 to enable students to take the course earlier in the curriculum

Approved: Date:

Department Head 9/23/2021

Dr. John Ball Digitally signed by Dr. John Ball Date: 2021.10.11 14:25:37 -05'00' 10/11/2021

Chair, College or School Curriculum Committee

Kari Babski-Reeves for Jason Keith Digitally signed by Kari Babski-Reeves for Jason Keith Date: 2021.10.11 14:46:20 -05'00'

Dean of College or School

11/9/21

Chair, University Committee on Courses and Curricula

Chair, Graduate Council (if applicable)

Peter L. Regan November 19th, 2021

Chair, Deans Council

1. CATALOG DESCRIPTION - The catalog description remains unchanged.

The Bachelor of Science in Cyber Security is designed for students who wish to help meet the challenges posed by increasing cyber-threats. Using a multidisciplinary approach, the program is designed to provide students with a focused education for evaluating, understanding, and solving cyber security problems.

The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.

2. CURRICULUM OUTLINE

CURRENT Degree Description	PROPOSED Degree Description
Degree: BS Major: Cybersecurity Concentration:	Degree: BS Major: Cybersecurity Concentration:
The Bachelor of Science in Cyber *Security and Operations* is designed for students who wish to help meet the challenges posed by increasing cyber-threats. Using a multidisciplinary approach, the program is designed to provide students with a focused education for evaluating, understanding, and solving cyber security problems. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.	The Bachelor of Science in Cyber**security** is designed for students who wish to help meet the challenges posed by increasing cyber-threats. Using a multidisciplinary approach, the program is designed to provide students with a focused education for evaluating, understanding, and solving cyber security problems. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.

CURRENT CURRICULUM OUTLINE	Required Hours	**PROPOSED CURRICULUM OUTLINE**	Required Hours
EN 1103 English Composition I EN 1113 English Composition II	3 3	EN 1103 English Composition I EN 1113 English Composition II	3 3
Fine Arts (any General Education course in this Category)	3	Fine Arts (General Education):	3
Natural Sciences: *BIO 1134 Biological Science I* CH 1213 Chemistry I CH 1211 Chemistry Lab *PH 2213 Physics I* Science Elective: PH 2223 Physics II, or CH 1223 Chemistry II & CH 1221, or BIO 1144 Biology II	 *4* 3 1 *3* *3-4*	Natural Sciences: CH 1213 Chemistry I CH 1211 Chemistry Lab Science Elective: **BIO 1134 Biological Science I, or PH 2213 Physics I, or** PH 2223 Physics II, or CH 1223 Chemistry II & CH 1221, or BIO 1144 Biology II	 3 1 **6**

Math: MA 1713 Calculus I MA 1723 Calculus II MA 3113 Linear Algebra Math Elective: MA 2733 Calculus III, or MA 3053 Foundations of Math, or MA 4143 Graph Theory, or MA 4173 Number Theory	 3 3 3 3	Math: MA 1713 Calculus I MA 1723 Calculus II MA 3113 Linear Algebra Math Elective: MA 2733 Calculus III, or MA 3053 Foundations of Math, or MA 4143 Graph Theory, or MA 4173 Number Theory	 3 3 3 3
Humanities (any General Education course in this Category)	6	Humanities (General Education):	6
Social/Behavioral Sciences (any General Education course in this Category)	6	Social/Behavioral Sciences (Gen Ed):	6
Major Core Courses: *CSE 1002 Intro to CSE* CSE 1284 Intro Computer Prog CSE 1384 Intermediate Comp Prog CSE 2383 Data Structures & Analysis of Algorithms CSE 4153 Data Comm & Networks CSE 4173 Cryptography *CSE 4763 Ethical & Legal Issues* CSE 4733 Operating Systems I CSE 4243 Info & Comp Security *ECE 3714 Digital Devices* *ECE 3724 Microprocessors* *ECE 4713 Computer Architecture* Communications Requirements: GE 3513 Technical Writing *CO 1003 Public Speaking, or* *CO 1013 Intro to Communications* Cyber Security Electives: BIS 4113 BIS Security CSE 4363 Software Reverse Engineering CSE 4743 Operating Systems II CSE 4773 Intro to Cyber Operations CSE 4253 Secure Software Engineering CSE 4383 Network Security CSE 4273 Digital Forensics	 *2* 4 4 3 3 3 *3* 3 3 *4* *4* *3* 3 *3* 15	Major Core Courses: **CSE 1011 Intro to CSE** CSE 1284 Intro Computer Prog CSE 1384 Intermediate Comp Prog **CSE 2213 Methods & Tools in SW Development** CSE 2383 Data Structures & Analysis of Algorithms **CSE 3183 Systems Programming** CSE 4153 Data Comm & Networks CSE 4173 Cryptography **CSE 3763 Ethical & Legal Issues** CSE 4733 Operating Systems I CSE 4243 Info & Comp Security **CSE 3723 Computer Organization** Communications Requirements: GE 3513 Technical Writing **IE 4613 Engineering Statistics I or MA 4523 Intro to Prob or MA 4543 Intro to Math Stat 1 or BQA 2113 Bus Stats Methods** Cyber Security Electives: BIS 4113 BIS Security CSE 4363 Software Reverse Engineering CSE 4743 Operating Systems II CSE 4773 Intro to Cyber Operations CSE 4253 Secure Software Engineering CSE 4383 Network Security CSE 4273 Digital Forensics	 **1** 4 4 **3** 3 **3** 3 3 **3** 3 3 **3** 3 **3** 15

Technical Electives: Any upper-level course in CS, ECE, or MA that is not already required	*9*	**Technical Electives:** Any upper-level course in CS, ECE, or MA that is not already required	**18**
Free Electives:	*6*	**Free Electives:**	**10**
Total Hours	*125*	Total Hours	**128**

3. JUSTIFICATION AND STUDENT LEARNING OUTCOMES

This modification is being made to bring the BS in Cybersecurity into alignment with the BS in Computer Science and BS in Software Engineering curricula, which were changed in 2020. These changes were made to provide a more flexible curriculum for our students, enabling them to take more courses in a specialized area of their choosing, which is particularly appropriate for the Cybersecurity degree. The curriculum revision also introduces lower level CSE courses that students will take as freshmen and sophomores in order to better prepare them for higher level CSE courses. This is resulting from a longitudinal study of student outcomes since 2011, and will positively affect retention in that students will develop skills earlier that enables them to be confident in their technical abilities earlier and to be more successful in higher level CSE coursework. The modification is also begin made to accommodate recently-developed accreditation criteria for cybersecurity programs.

- Will this program change meet local, state, regional, and national educational and cultural needs? **Yes**
- Will this program change result in duplication in the System? **No**
- Will this program change/advance student diversity within the discipline? **No**
- Will this program change result in an increase in the potential placement of graduates in MS, the
- Southeast, and the U.S.? **No**
- Will this program change result in an increase in the potential salaries of graduates in MS, the
- Southeast, and the U.S.? **No**

The learning outcomes of this program, listed below, remain the same:

1. Graduates will demonstrate an ability to apply knowledge of mathematics, science, and engineering
2. Graduates will demonstrate an ability to design and conduct experiments, as well as to analyze and interpret data
3. Graduates will demonstrate an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
4. Graduates will demonstrate an ability to function on multidisciplinary teams
5. Graduates will demonstrate an ability to identify, formulate, and solve engineering problems
6. Graduates will demonstrate an understanding of professional and ethical responsibility
7. Graduates will demonstrate an ability to communicate effectively
8. Graduates will demonstrate the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
9. Graduates will demonstrate a recognition of the need for, and an ability to engage in life-long learning
10. Graduates will demonstrate a knowledge of contemporary issues
11. Graduates will demonstrate an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

4. SUPPORT – A letter of support from the CSE curriculum committee is attached.

5. PROPOSED 4-LETTER ABBREVIATION – CYSO

6. EFFECTIVE DATE – Spring 2022

MISSISSIPPI STATE UNIVERSITY
JAMES WORTH BAGLEY
COLLEGE OF ENGINEERING

DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

September 19, 2021

Dr. Andy Perkins, Chair
University Committee on Courses and Curricula
PO Box 5268
Mississippi State, MS 39762

Dr. Perkins:

The Computer Science and Engineering Faculty voted unanimously in favor of the below curriculum changes at a faculty meeting on September 17, 2021.

- Modification to the BS in Computer Science to introduce a number of concentrations
- Modification to the BS in Cybersecurity to bring the degree requirements into alignment with the current Computer Science and Software Engineering degree requirements
- Addition of CSE 1013 CSE AP Credit
- Addition of CSE 4263/6263 Web Application Security
- Addition of CSE 4683/6683 Machine Learning and Soft Computing

Please feel free to contact me if there are any questions or concerns.

Sincerely,

Cindy Bethel, Ph.D.
CSE Courses and Curricula Committee Chair
Professor

Jingdao Chen, Ph.D.
CSE Courses and Curricula Committee Member
Assistant Professor

Joshua Crowson
CSE Courses and Curricula Committee Member
Instructor

Kortni Neal
CSE Courses and Curricula Committee Member
Instructor

To: University Committee on Courses and Curricula

From: BQA Faculty, Marketing, Quantitative Analysis and Business Law Department

The Business Quantitative Analysis faculty have reviewed the proposed addition of BQA 2113 Business Statistics I to the BS in Cybersecurity degree.

We support these proposed modification. If you have any questions, or need any additional information, please contact Dr. Stephen L. France at sfrance@business.msstate.edu.

Dr. Melissa Moore, Department Head

Dr. Stephen L. France, Associate Professor

Dr. Yueran Zhuo, Assistant Professor

Dr. Iva Ballard, Lecturer

Dr. Sheida Riahi, Lecturer

MISSISSIPPI STATE UNIVERSITY
JAMES WORTH BAGLEY
COLLEGE OF ENGINEERING

DEPARTMENT OF INDUSTRIAL
& SYSTEMS ENGINEERING

Dr. Kari Babski-Reeves
Professor, Head and Larry G Brown Endowed Professor
kari@ise.msstate.edu

September 20, 2021

To Whom it May Concern,

ISE is fully supportive of the CSE department's listing of IE 4613 as a statistics elective for the BS in Cybersecurity. This course is currently an option for the CS and SE degree programs and this will align the three degree program statistics offerings.

We are pleased to provide this support. If you have any questions, please do not hesitate to contact me.

Sincerely,

Kari Babski-Reeves
Professor and Head, Department of Industrial and Systems Engineering
Larry G. Brown Endowed Professor
Associate Dean, Bagley College of Engineering

September 22, 2021

To Whom it may concern,

I am writing you in regards to the program modification to the Bachelor's of Science degree with a concentration in Cybersecurity, housed in the Department of Computer Science and Engineering. The department would like to add a statistics course from the Department of Mathematics and Statistics to their program. Namely, they would now like to require students to take MA 4523: Introduction to Probability or MA 4543: Introduction to Mathematical Statistics I. The prerequisites for either course is exactly the same. Many of their students already take these courses and so any enrollment change would be very minor. I am in full support of these additions to their program as technology advances more and more mathematics is necessary to discuss these advances. Please accept this letter of support for the following course proposal.

Sincerely yours,

Dr. Matt McBride
Associate Professor and Undergraduate Coordinator
Department of Mathematics and Statistics
Mississippi State University
Mississippi State, MS 39762

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: Bagley College of Engineering Department:

Contact Person: Dr. Shahram Rahimi Mail Stop: 9637 E-mail: rahimi@cse.msstate.edu
Nature of Change: Program Modification Date Initiated: 9/19/2021 Effective Date: Spring 2022
Current Degree Program Name: BS

Major: Computer Science Concentration: None

New Degree Program Name: BS

Major: Computer Science Concentration: Systems, Artificial Intelligence, Computational Science, Human and Visual Computing,

Summary of Proposed Changes: The Computer Science and Engineering faculty recently modified the BS in Computer Science to increase the amount of flexibility in course selections, including significantly increasing the number of technical electives required for the program. This current proposal is to introduce a number of concentrations to the program by allowing students to select nine hours of technical electives from topics in artificial intelligence, computer systems, computational science, or human and visual computing.

Approved: Date:

Department Head 9/23/2021

Dr. John Ball Digitally signed by Dr. John Ball Date: 2021.10.11 14:24:38 -05'00' 10/11/2021

Chair, College or School Curriculum Committee

Kari Babski-Reeves for Jason Keith Digitally signed by Kari Babski-Reeves for Jason Keith Date: 2021.10.11 14:47:21 -05'00'

Dean of College or School

11/9/21

Chair, University Committee on Courses and Curricula

Chair, Graduate Council(if applicable)

Peter L. Lyon

Chair, Deans Council

November 19th, 2021

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: BS Major: Computer Science Concentration: **N/A**	Degree: BS Major: Computer Science Concentration: **General**
Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows: 1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession. 2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies. 3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional. 4. The graduate will successfully interact with others of different backgrounds, educations, and cultures. 5. The graduate will demonstrate effective communication skills in their profession. Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a number of other computer-related jobs. A minor in computer science is available to students with major programs of study in other fields at the University. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science,	Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows: 1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession. 2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies. 3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional. 4. The graduate will successfully interact with others of different backgrounds, educations, and cultures. 5. The graduate will demonstrate effective communication skills in their profession. Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a number of other computer-related jobs. A minor in computer science is available to students with major programs of study in other fields at the University. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering

and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.		courses attempted.	
		The general concentration in computer science allows students the flexibility to take a broad range of courses. Students are not required to focus on a specific topic area, and may take a variety of courses in areas that fit their individual interests.	
CURRENT CURRICULUM OUTLINE	Required Hours	**PROPOSED CURRICULUM OUTLINE**	Required Hours
English EN 1103 English Composition I EN 1113 English Composition II	 3 3	English EN 1103 English Composition I EN 1113 English Composition II	 3 3
Fine Arts (any General Education course in this category)	3	Fine Arts (any General Education course in this category)	3
Humanities (any General Education course in this category)	6	Humanities (any General Education course in this category)	6
Social Science (any General Education course in this category)	6	Social Science (any General Education course in this category)	6
Math MA 1713 Calculus I MA 1723 Calculus II MA 3113 Linear Algebra Math elective: Choose from MA 2733 Calculus III MA 3053 Foundations of Math MA 4143 Graph Theory MA 4173 Number Theory	 3 3 3 3	Math MA 1713 Calculus I MA 1723 Calculus II MA 3113 Linear Algebra Math elective: Choose from MA 2733 Calculus III MA 3053 Foundations of Math MA 4143 Graph Theory MA 4173 Number Theory	 3 3 3 3
Science CH 1213 Chemistry I CH 1211 Chemistry I Lab Science electives: Choose from PH 2213 Physics I PH 2223 Physics II CH 1223 Chemistry II & CH 1221 BIO 1134 Biological Science I BIO 1144 Biological Science II	 3 1 6	Science CH 1213 Chemistry I CH 1211 Chemistry I Lab Science electives: Choose from PH 2213 Physics I PH 2223 Physics II CH 1223 Chemistry II & CH 1221 BIO 1134 Biological Science I BIO 1144 Biological Science II	 3 1 6
Major Core Courses Statistics requirement: Choose from IE 4613 Engineering Statistics I MA 4523 Intro to Probability MA 4543 Intro to Math Stat I BQA 2113 Business Stats Methods	 3	Major Core Courses Statistics requirement: Choose from IE 4613 Engineering Statistics I MA 4523 Intro to Probability MA 4543 Intro to Math Stat I BQA 2113 Business Stats Methods	 3

Writing requirement: GE 3513 Technical Writing	3	Writing requirement: GE 3513 Technical Writing	3
CSE 1011 Intro to CSE	1	CSE 1011 Intro to CSE	1
CSE 1284 Intro to Comp Prog	4	CSE 1284 Intro to Comp Prog	4
CSE 1384 Intermediate Comp Prog	4	CSE 1384 Intermediate Comp Prog	4
CSE 2213 Methods & Tools in SW Dev	3	CSE 2213 Methods & Tools in SW Dev	3
CSE 2383 Data Str & Analysis of Alg	3	CSE 2383 Data Str & Analysis of Alg	3
CSE 2813 Discrete Structures	3	CSE 2813 Discrete Structures	3
CSE 3183 Systems Programming	3	CSE 3183 Systems Programming	3
CSE 3723 Computer Organization	3	CSE 3723 Computer Organization	3
CSE 3763 Ethical & Legal Issues	3	CSE 3763 Ethical & Legal Issues	3
CSE 4714 Theory & Implementation of Programming Languages	4	CSE 4714 Theory & Implementation of Programming Languages	4
CSE 4733 Operating Systems I	3	CSE 4733 Operating Systems I	3
CSE 4833 Intro to Analysis of Alg	3	CSE 4833 Intro to Analysis of Alg	3
Technical Electives *Choose from:* *IE 3913 Engineering Economy* *IE 4113 Human Factors Engineering* *IE 4123 Psychology of HCI* *IE 4333 Production Control Systems* *IE 4513 Engineering Administration* *IE 4533 Project Management* *IE 4573 Process Improvement Engineering* *IE 4623 Engineering Statistics II* *IE 4653 Industrial Quality Control I* *IE 4713 Operations Research* *IE 4733 Linear Programming I* *IE 4773 Simulation* *BIS 4533 Decision Support Systems* *BIS 4523 Business programming with COBOL* *Any upper-level CSE, ECE, or MA course*	*27*		
Free Electives	*15*		
		Concentration Courses **Technical Electives** **Choose from:** **IE 3913 Engineering Economy** **IE 4113 Human Factors Engineering** **IE 4123 Psychology of HCI** **IE 4333 Production Control Systems** **IE 4513 Engineering Administration** **IE 4533 Project Management** **IE 4573 Process Improvement Engineering** **IE 4623 Engineering Statistics II** **IE 4653 Industrial Quality Control I** **IE 4713 Operations Research** **IE 4733 Linear Programming I**	**27**

		IE 4773 Simulation **BIS 4533 Decision Support Systems** **BIS 4523 Business programming with COBOL** **Any upper-level CSE, ECE, or MA course** **Free Electives**	**15**
Total Hours	128	Total Hours	128

CURRENT Degree Description	PROPOSED Degree Description
Degree: BS Major: Computer Science Concentration: **N/A**	Degree: BS Major: Computer Science Concentration: **Systems**
Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows: 1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession. 2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies. 3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional. 4. The graduate will successfully interact with others of different backgrounds, educations, and cultures. 5. The graduate will demonstrate effective communication skills in their profession. Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a	Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows: 1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession. 2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies. 3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional. 4. The graduate will successfully interact with others of different backgrounds, educations, and cultures. 5. The graduate will demonstrate effective communication skills in their profession. Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a number of other computer-related jobs. A minor in computer science is available to

number of other computer-related jobs. A minor in computer science is available to students with major programs of study in other fields at the University. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.	students with major programs of study in other fields at the University. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.
N/A	**Computer systems are the hardware and software that provide computing capability for digital devices. Computer systems can be for embedded applications, multi-core, or distributed platforms. These help to support high performance, real-time, secure systems, and analysis of digital media for forensic purposes. Computer systems research at MSU includes investigating the use of alternate hardware architectures to improve computational speed, secure networking, develop model-driven software architectures, improve energy efficiency, and improve system robustness and resiliency.**

CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
English		English	
EN 1103 English Composition I	3	EN 1103 English Composition I	3
EN 1113 English Composition II	3	EN 1113 English Composition II	3
Fine Arts (any General Education course in this category)	3	Fine Arts (any General Education course in this category)	3
Humanities (any General Education course in this category)	6	Humanities (any General Education course in this category)	6
Social Science (any General Education course in this category)	6	Social Science (any General Education course in this category)	6
Math		Math	
MA 1713 Calculus I	3	MA 1713 Calculus I	3
MA 1723 Calculus II	3	MA 1723 Calculus II	3
MA 3113 Linear Algebra	3	MA 3113 Linear Algebra	3
Math elective:	3	Math elective:	3
Choose from		Choose from	
MA 2733 Calculus III		MA 2733 Calculus III	
MA 3053 Foundations of Math		MA 3053 Foundations of Math	
MA 4143 Graph Theory		MA 4143 Graph Theory	
MA 4173 Number Theory		MA 4173 Number Theory	
Science		Science	
CH 1213 Chemistry I	3	CH 1213 Chemistry I	3
CH 1211 Chemistry I Lab	1	CH 1211 Chemistry I Lab	1
Science electives:	6	Science electives:	6
Choose from		Choose from	
PH 2213 Physics I		PH 2213 Physics I	
PH 2223 Physics II		PH 2223 Physics II	
CH 1223 Chemistry II & CH 1221		CH 1223 Chemistry II & CH 1221	

BIO 1134 Biological Science I BIO 1144 Biological Science II		BIO 1134 Biological Science I BIO 1144 Biological Science II	
Major Core Courses Statistics requirement: Choose from IE 4613 Engineering Statistics I MA 4523 Intro to Probability MA 4543 Intro to Math Stat I BQA 2113 Business Stats Methods Writing requirement: GE 3513 Technical Writing CSE 1011 Intro to CSE CSE 1284 Intro to Comp Prog CSE 1384 Intermediate Comp Prog CSE 2213 Methods & Tools in SW Dev CSE 2383 Data Str & Analysis of Alg CSE 2813 Discrete Structures CSE 3183 Systems Programming CSE 3723 Computer Organization CSE 3763 Ethical & Legal Issues CSE 4714 Theory & Implementation of Programming Languages CSE 4733 Operating Systems I CSE 4833 Intro to Analysis of Alg *Technical Electives* *Free Electives*	 3 3 1 4 4 3 3 3 3 3 3 4 3 3 27 15	Major Core Courses Statistics requirement: Choose from IE 4613 Engineering Statistics I MA 4523 Intro to Probability MA 4543 Intro to Math Stat I BQA 2113 Business Stats Methods Writing requirement: GE 3513 Technical Writing CSE 1011 Intro to CSE CSE 1284 Intro to Comp Prog CSE 1384 Intermediate Comp Prog CSE 2213 Methods & Tools in SW Dev CSE 2383 Data Str & Analysis of Alg CSE 2813 Discrete Structures CSE 3183 Systems Programming CSE 3723 Computer Organization CSE 3763 Ethical & Legal Issues CSE 4714 Theory & Implementation of Programming Languages CSE 4733 Operating Systems I CSE 4833 Intro to Analysis of Alg	 3 3 1 4 4 3 3 3 3 3 3 4 3 3
		Concentration Courses **Choose from** **CSE 4153 Data Comm and Networks** **CSE 4163 Designing Parallel Alg** **CSE 4503 Database Management Sys** **CSE 4723 Compiler Construction** **CSE 4743 Operating Systems II** **Technical Electives** **Free Electives**	 **9** **18** **15**
Total Hours	128	Total Hours	128

CURRENT Degree Description	PROPOSED Degree Description
Degree: BS Major: Computer Science Concentration: **N/A**	Degree: BS Major: Computer Science Concentration: **Artificial Intelligence**

Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows: 1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession. 2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies. 3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional. 4. The graduate will successfully interact with others of different backgrounds, educations, and cultures. 5. The graduate will demonstrate effective communication skills in their profession. Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a number of other computer-related jobs. A minor in computer science is available to students with major programs of study in other fields at the University. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.	Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows: 1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession. 2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies. 3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional. 4. The graduate will successfully interact with others of different backgrounds, educations, and cultures. 5. The graduate will demonstrate effective communication skills in their profession. Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a number of other computer-related jobs. A minor in computer science is available to students with major programs of study in other fields at the University. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.
N/A	**Artificial intelligence is a branch of computer science that is concerned with developing algorithms and techniques that will allow computers to behave more like humans in the future. Artificial intelligence is a broad term that incorporates a wide range of disciplines, including expert systems, natural language**

		processing, computer vision, and robotics. Artificial intelligence is having a profound impact on a wide range of businesses. The Artificial Intelligence concentration at MSU prepares students to take the next step into the field of artificial intelligence by supporting them in acquiring the information and abilities essential to improve their professional careers in the field. Instructors and students use these strategies to solve challenges in fields such as reasoning under uncertainty, bioinformatics, cybersecurity, geometric learning and human-machine interfaces.	
CURRENT CURRICULUM OUTLINE	Required Hours	**PROPOSED CURRICULUM OUTLINE**	Required Hours
English EN 1103 English Composition I EN 1113 English Composition II	 3 3	English EN 1103 English Composition I EN 1113 English Composition II	 3 3
Fine Arts (any General Education course in this category)	3	Fine Arts (any General Education course in this category)	3
Humanities (any General Education course in this category)	6	Humanities (any General Education course in this category)	6
Social Science (any General Education course in this category)	6	Social Science (any General Education course in this category)	6
Math MA 1713 Calculus I MA 1723 Calculus II MA 3113 Linear Algebra Math elective: Choose from MA 2733 Calculus III MA 3053 Foundations of Math MA 4143 Graph Theory MA 4173 Number Theory	 3 3 3 3	Math MA 1713 Calculus I MA 1723 Calculus II MA 3113 Linear Algebra Math elective: Choose from MA 2733 Calculus III MA 3053 Foundations of Math MA 4143 Graph Theory MA 4173 Number Theory	 3 3 3 3
Science CH 1213 Chemistry I CH 1211 Chemistry I Lab Science electives: Choose from PH 2213 Physics I PH 2223 Physics II CH 1223 Chemistry II & CH 1221 BIO 1134 Biological Science I BIO 1144 Biological Science II	 3 1 6	Science CH 1213 Chemistry I CH 1211 Chemistry I Lab Science electives: Choose from PH 2213 Physics I PH 2223 Physics II CH 1223 Chemistry II & CH 1221 BIO 1134 Biological Science I BIO 1144 Biological Science II	 3 1 6
Major Core Courses Statistics requirement: Choose from IE 4613 Engineering Statistics I MA 4523 Intro to Probability MA 4543 Intro to Math Stat I BQA 2113 Business Stats Methods	 3	Major Core Courses Statistics requirement: Choose from IE 4613 Engineering Statistics I MA 4523 Intro to Probability MA 4543 Intro to Math Stat I BQA 2113 Business Stats Methods	 3

Writing requirement: GE 3513 Technical Writing	3	Writing requirement: GE 3513 Technical Writing	3
CSE 1011 Intro to CSE	1	CSE 1011 Intro to CSE	1
CSE 1284 Intro to Comp Prog	4	CSE 1284 Intro to Comp Prog	4
CSE 1384 Intermediate Comp Prog	4	CSE 1384 Intermediate Comp Prog	4
CSE 2213 Methods & Tools in SW Dev	3	CSE 2213 Methods & Tools in SW Dev	3
CSE 2383 Data Str & Analysis of Alg	3	CSE 2383 Data Str & Analysis of Alg	3
CSE 2813 Discrete Structures	3	CSE 2813 Discrete Structures	3
CSE 3183 Systems Programming	3	CSE 3183 Systems Programming	3
CSE 3723 Computer Organization	3	CSE 3723 Computer Organization	3
CSE 3763 Ethical & Legal Issues	3	CSE 3763 Ethical & Legal Issues	3
CSE 4714 Theory & Implementation of Programming Languages	4	CSE 4714 Theory & Implementation of Programming Languages	4
CSE 4733 Operating Systems I	3	CSE 4733 Operating Systems I	3
CSE 4833 Intro to Analysis of Alg	3	CSE 4833 Intro to Analysis of Alg	3
Technical Electives	27		
Free Electives	15		
		Concentration Courses	
		Choose from **CSE 4623 Artificial Intelligence** **CSE 4643 AI Robotics** **CSE 4653 Cognitive Science** **CSE 4673 Machine Learning and Soft Computing**	**9**
		Technical Electives	**18**
		Free Electives	**15**
Total Hours	128	Total Hours	128

CURRENT Degree Description	PROPOSED Degree Description
Degree: BS Major: Computer Science Concentration: **N/A**	Degree: BS Major: Computer Science Concentration: **Computational Science**
Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows:	Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows: 1. The graduate will demonstrate an understanding of

1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession. 2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies. 3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional. 4. The graduate will successfully interact with others of different backgrounds, educations, and cultures. 5. The graduate will demonstrate effective communication skills in their profession. Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a number of other computer-related jobs. A minor in computer science is available to students with major programs of study in other fields at the University. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.	computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession. 2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies. 3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional. 4. The graduate will successfully interact with others of different backgrounds, educations, and cultures. 5. The graduate will demonstrate effective communication skills in their profession. Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a number of other computer-related jobs. A minor in computer science is available to students with major programs of study in other fields at the University. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.
N/A	**Computational science is concerned with constructing mathematical models, quantitative analysis techniques, numerical simulations, and optimization to solve scientific problems using computers. It is now widely regarded as a third mode of scientific discovery, after theory and experiment. Faculty members in this area are participating in projects that involve algorithm development for performance optimization in scientific computing, software synthesis for computational field simulations on high-end computing platforms, distributed interactive simulation frameworks, resource allocation on high-end computing platforms, autonomic computing, uncertainty analysis in simulations, medical imaging analysis, and biological modeling.**

CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
English		English	
EN 1103 English Composition I	3	EN 1103 English Composition I	3
EN 1113 English Composition II	3	EN 1113 English Composition II	3
Fine Arts (any General Education course in this category)	3	Fine Arts (any General Education course in this category)	3
Humanities (any General Education course	6	Humanities (any General Education course	6

in this category)		in this category)	
Social Science (any General Education course in this category)	6	Social Science (any General Education course in this category)	6
Math MA 1713 Calculus I MA 1723 Calculus II MA 3113 Linear Algebra Math elective: Choose from MA 2733 Calculus III MA 3053 Foundations of Math MA 4143 Graph Theory MA 4173 Number Theory	 3 3 3 3	Math MA 1713 Calculus I MA 1723 Calculus II MA 3113 Linear Algebra Math elective: Choose from MA 2733 Calculus III MA 3053 Foundations of Math MA 4143 Graph Theory MA 4173 Number Theory	 3 3 3 3
Science CH 1213 Chemistry I CH 1211 Chemistry I Lab Science electives: Choose from PH 2213 Physics I PH 2223 Physics II CH 1223 Chemistry II & CH 1221 BIO 1134 Biological Science I BIO 1144 Biological Science II	 3 1 6	Science CH 1213 Chemistry I CH 1211 Chemistry I Lab Science electives: Choose from PH 2213 Physics I PH 2223 Physics II CH 1223 Chemistry II & CH 1221 BIO 1134 Biological Science I BIO 1144 Biological Science II	 3 1 6
Major Core Courses Statistics requirement: Choose from IE 4613 Engineering Statistics I MA 4523 Intro to Probability MA 4543 Intro to Math Stat I BQA 2113 Business Stats Methods Writing requirement: GE 3513 Technical Writing CSE 1011 Intro to CSE CSE 1284 Intro to Comp Prog CSE 1384 Intermediate Comp Prog CSE 2213 Methods & Tools in SW Dev CSE 2383 Data Str & Analysis of Alg CSE 2813 Discrete Structures CSE 3183 Systems Programming CSE 3723 Computer Organization CSE 3763 Ethical & Legal Issues CSE 4714 Theory & Implementation of Programming Languages CSE 4733 Operating Systems I CSE 4833 Intro to Analysis of Alg *Technical Electives* *Free Electives*	 3 3 1 4 4 3 3 3 3 3 3 4 3 3 27 15	Major Core Courses Statistics requirement: Choose from IE 4613 Engineering Statistics I MA 4523 Intro to Probability MA 4543 Intro to Math Stat I BQA 2113 Business Stats Methods Writing requirement: GE 3513 Technical Writing CSE 1011 Intro to CSE CSE 1284 Intro to Comp Prog CSE 1384 Intermediate Comp Prog CSE 2213 Methods & Tools in SW Dev CSE 2383 Data Str & Analysis of Alg CSE 2813 Discrete Structures CSE 3183 Systems Programming CSE 3723 Computer Organization CSE 3763 Ethical & Legal Issues CSE 4714 Theory & Implementation of Programming Languages CSE 4733 Operating Systems I CSE 4833 Intro to Analysis of Alg	 3 3 1 4 4 3 3 3 3 3 3 4 3 3

		Concentration Courses **Choose from** **CSE 4163 Designing Parallel Alg** **CSE 4623 Computational Biology** **MA 4243 Data Analysis I** **MA 4313 Numerical Analysis I** **MA 3253 Differential Equations I** **Technical Electives** **Free Electives**	 **9** **18** **15**
Total Hours	128	Total Hours	128

CURRENT Degree Description	PROPOSED Degree Description
Degree: BS Major: Computer Science Concentration: **N/A**	Degree: BS Major: Computer Science Concentration: **Human and Visual Computing**
Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows: 1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession. 2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies. 3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional. 4. The graduate will successfully interact with others of different backgrounds, educations, and cultures. 5. The graduate will demonstrate effective communication skills in their profession. Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems	Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions. The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows: 1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession. 2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies. 3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional. 4. The graduate will successfully interact with others of different backgrounds, educations, and cultures. 5. The graduate will demonstrate effective communication skills in their profession. Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a number of other computer-

programmers, computer system engineers and in a number of other computer-related jobs. A minor in computer science is available to students with major programs of study in other fields at the University. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.	related jobs. A minor in computer science is available to students with major programs of study in other fields at the University. The Bachelor of Science degree requires the completion of a total of 128 credit hours of general studies, computer science, mathematics and science, and supporting technical courses. To graduate, a student must have a "C" average in all MSU computer science and engineering courses attempted.
N/A	**Humans, individually or in groups, are involved in all stages of computing. From interacting with robots, using novel virtual and extended reality methods, or analyzing data with visualization, humans are central to computing. A student in the Human & Visualization Computing concentration studies the social, cognitive, and perceptual aspects of computing through the lens of design, graphical display, an advanced interaction modalities.**

CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
English		English	
EN 1103 English Composition I	3	EN 1103 English Composition I	3
EN 1113 English Composition II	3	EN 1113 English Composition II	3
Fine Arts (any General Education course in this category)	3	Fine Arts (any General Education course in this category)	3
Humanities (any General Education course in this category)	6	Humanities (any General Education course in this category)	6
Social Science (any General Education course in this category)	6	Social Science (any General Education course in this category)	6
Math		Math	
MA 1713 Calculus I	3	MA 1713 Calculus I	3
MA 1723 Calculus II	3	MA 1723 Calculus II	3
MA 3113 Linear Algebra	3	MA 3113 Linear Algebra	3
Math elective:	3	Math elective:	3
Choose from		Choose from	
MA 2733 Calculus III		MA 2733 Calculus III	
MA 3053 Foundations of Math		MA 3053 Foundations of Math	
MA 4143 Graph Theory		MA 4143 Graph Theory	
MA 4173 Number Theory		MA 4173 Number Theory	
Science		Science	
CH 1213 Chemistry I	3	CH 1213 Chemistry I	3
CH 1211 Chemistry I Lab	1	CH 1211 Chemistry I Lab	1
Science electives:	6	Science electives:	6
Choose from		Choose from	
PH 2213 Physics I		PH 2213 Physics I	
PH 2223 Physics II		PH 2223 Physics II	
CH 1223 Chemistry II & CH 1221		CH 1223 Chemistry II & CH 1221	
BIO 1134 Biological Science I		BIO 1134 Biological Science I	
BIO 1144 Biological Science II		BIO 1144 Biological Science II	

Major Core Courses		Major Core Courses	
Statistics requirement: Choose from IE 4613 Engineering Statistics I MA 4523 Intro to Probability MA 4543 Intro to Math Stat I BQA 2113 Business Stats Methods	3	Statistics requirement: Choose from IE 4613 Engineering Statistics I MA 4523 Intro to Probability MA 4543 Intro to Math Stat I BQA 2113 Business Stats Methods	3
Writing requirement: GE 3513 Technical Writing	3	Writing requirement: GE 3513 Technical Writing	3
CSE 1011 Intro to CSE	1	CSE 1011 Intro to CSE	1
CSE 1284 Intro to Comp Prog	4	CSE 1284 Intro to Comp Prog	4
CSE 1384 Intermediate Comp Prog	4	CSE 1384 Intermediate Comp Prog	4
CSE 2213 Methods & Tools in SW Dev	3	CSE 2213 Methods & Tools in SW Dev	3
CSE 2383 Data Str & Analysis of Alg	3	CSE 2383 Data Str & Analysis of Alg	3
CSE 2813 Discrete Structures	3	CSE 2813 Discrete Structures	3
CSE 3183 Systems Programming	3	CSE 3183 Systems Programming	3
CSE 3723 Computer Organization	3	CSE 3723 Computer Organization	3
CSE 3763 Ethical & Legal Issues	3	CSE 3763 Ethical & Legal Issues	3
CSE 4714 Theory & Implementation of Programming Languages	4	CSE 4714 Theory & Implementation of Programming Languages	4
CSE 4733 Operating Systems I	3	CSE 4733 Operating Systems I	3
CSE 4833 Intro to Analysis of Alg	3	CSE 4833 Intro to Analysis of Alg	3
Technical Electives	27		
Free Electives	15		
		Concentration Courses	
		Choose from **CSE 4413 Introduction to Graphics** **CSE 4443 Game Design** **CSE 4653 Cognitive Science** **CSE 4663 Human Comp Interaction** **IE 4113 Human Factors Engineering**	**9**
		Technical Electives	**18**
		Free Electives	**15**
Total Hours	128	Total Hours	128

3. JUSTIFICATION AND STUDENT LEARNING OUTCOMES

The Computer Science and Engineering faculty recently modified the BS in Computer Science to increase the amount of flexibility in course selections, including significantly increasing the number of technical electives required for the program. This current proposal is to introduce a number of concentrations to the program by allowing students to select nine hours of technical electives from topics in artificial intelligence, computer systems, computational science, or human and visual computing.

- Will this program change meet local, state, regional, and national educational and cultural needs? **No**
- Will this program change result in duplication in the System? **No**

- Will this program change/advance student diversity within the discipline? **No**
- Will this program change result in an increase in the potential placement of graduates in MS, the Southeast, and the U.S.? **No**
- Will this program change result in an increase in the potential salaries of graduates in MS, the Southeast, and the U.S.? **No**

The learning outcomes of the program, listed below, remain the same:

1. The graduate will demonstrate an understanding of computer science principles and an ability to solve unstructured computer science problems through the successful entrance into and advancement in the computer science profession.
2. The graduate will demonstrate an appreciation for lifelong learning and for the value of continuing professional development through participation in graduate education, professional education or continuing education opportunities, attainment of professional licensure, or membership in professional societies.
3. The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional.
4. The graduate will successfully interact with others of different backgrounds, educations, and cultures.
5. The graduate will demonstrate effective communication skills in their profession.

3. SUPPORT

A letter of support from the Department of Computer Science and Engineering Curriculum Committee chair is attached.

4. EFFECTIVE DATE

Spring 2022

MISSISSIPPI STATE UNIVERSITY
JAMES WORTH BAGLEY
COLLEGE OF ENGINEERING

DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

September 19, 2021

Dr. Andy Perkins, Chair
University Committee on Courses and Curricula
PO Box 5268
Mississippi State, MS 39762

Dr. Perkins:

The Computer Science and Engineering Faculty voted unanimously in favor of the below curriculum changes at a faculty meeting on September 17, 2021.

- Modification to the BS in Computer Science to introduce a number of concentrations
- Modification to the BS in Cybersecurity to bring the degree requirements into alignment with the current Computer Science and Software Engineering degree requirements
- Addition of CSE 1013 CSE AP Credit
- Addition of CSE 4263/6263 Web Application Security
- Addition of CSE 4683/6683 Machine Learning and Soft Computing

Please feel free to contact me if there are any questions or concerns.

Sincerely,

Cindy Bethel, Ph.D.
CSE Courses and Curricula Committee Chair
Professor

Jingdao Chen, Ph.D.
CSE Courses and Curricula Committee Member
Assistant Professor

Joshua Crowson
CSE Courses and Curricula Committee Member
Instructor

Kortni Neal
CSE Courses and Curricula Committee Member
Instructor

MISSISSIPPI STATE UNIVERSITY
JAMES WORTH BAGLEY
COLLEGE OF ENGINEERING

DEPARTMENT OF INDUSTRIAL & SYSTEMS ENGINEERING

Dr. Kari Babski-Reeves
Professor, Head and Larry G Brown Endowed Professor
kari@ise.msstate.edu

September 20, 2021

To Whom it May Concern,

ISE is fully supportive of the CSE department's listing of IE 4113 Human Factors Engineering as an elective within a concentration for their BS degree. The course is listed as an elective under their current degree program and this change is formalizing the elective to align with concentrations as CSE deems appropriate.

We are pleased to provide this support. If you have any questions, please do not hesitate to contact me.

Sincerely,

Kari Babski-Reeves
Professor and Head, Department of Industrial and Systems Engineering
Larry G. Brown Endowed Professor
Associate Dean, Bagley College of Engineering

September 22, 2021

To Whom it may concern,

I am writing you in regards to the program modification to the Bachelor's of Science degree with Computer Science concentrating on Scientific Computing, housed in the Department of Computer Science and Engineering. The department would like to add numerous courses from the Department of Mathematics and Statistics to their program. Namely, they would now like to require students to take MA 3253: Differential Equations I, MA 4313: Numerical Analysis, and MA 4243: Data Analysis I. Many of their students already take these courses and so any enrollment change would be very minor. I am in full support of these additions to their program as technology advances more and more mathematics is necessary to discuss these advances. Please accept this letter of support for the following course proposal.

Sincerely yours,

Dr. Matt McBride
Associate Professor and Undergraduate Coordinator
Department of Mathematics and Statistics
Mississippi State University
Mississippi State, MS 39762