MISSISSIPPI STATE
UNIVERSITY ™

A MEMORANDUM

DATE: January 11, 2017

TO: UCCC Members

FROM: Dr. Dana Pomykal Franz, Chair

SUBJECT: January 20, 2017 Meeting

Enclosed are the minutes from the meeting on December 13, 2016 and the agenda and proposals for the meeting on Friday, **January 20, 2017 beginning at 1:30 p.m.** The meeting will be held in Room 324 of the Student Union. Please contact the UCCC office if you are unable to attend.

Thank you.

Enclosures: December 13, 2016 Meeting Minutes
               Course/Curriculum Proposals

AGENDA
UNIVERSITY COMMITTEE ON COURSES AND CURRICULA
January 20, 2017

1. **Welcome**
2. **Approval of minutes**
3. **Course proposals by college/school:**

AGRICULTURE AND LIFE SCIENCES

Modification	PO 8011	Graduate Seminar in Poultry Science
Addition	PO 8111	Advanced Graduate Seminar in Poultry Science

ARTS AND SCIENCES

Addition	BIO 2123	Ethical Issues in Biology
Addition	BIO 4563/6563	Evolutionary and Developmental Biology
Deletion	CO 3413	News Gathering
Modification	EC 8423	Public Finance
Addition	EC 8653	Microeconometrics
Addition	FLS 4453/6453	Spanish Culture, 1898-1936
Addition	FLS 4883	Senior Seminar in FLS

BUSINESS

Deletion	ACC 4053/6053	International Accounting
Addition	ACC 8183	International Accounting

ENGINEERING

Addition	CSE 4253	Secure Software Engineering
Addition	CSE 4753	Introduction to Cyber Operations
Addition	CSE 4763	Cyber Law

4. **Degree proposals by college/school**

ARTS AND SCIENCES

Modification	BA	Communication

BUSINESS

Modification	MPA	Business: Accounting

ENGINEERING

Addition	BS	Engineering: Cyber Security and Operations

University Committee on Courses and Curricula
Mississippi State University
December 13, 2016

Present: Amy Adkerson, Shrinidhi Ambinakudige, Tracey Baham, Randy Campbell, Russell Carr, Mike Cox, Amy Crumpton, Dana Franz, Seamus Freyne, Robert Harland, Kevin Hunt, Brenda Kirkland, Pat Matthes, Qingmin Meng, Rob Moore, Kelly Moser, Erika Niemann, Tommy Parker, Andy Perkins, Tommy Phillips, John Rigsby, Pam Sullivan, Jenny Turner, Robert Wolverton

Excused: Trey Howell, Greg Olsen, Emily Owen, Barry Stewart, Chien Yu

Absent: Madelyn Barr, Ben Emmich, Charles Freeman

Guests: Stamatis Agiovlasitis, Anastasia Elder, Cheryl Justice, Jessica Wells

Franz called the meeting to order at 1:30 p.m. on Tuesday, December 13, 2016 in room 324 of the Student Union. Franz announced the committee appointed by Dr. Judy Bonner, Provost, to review the procedures of the UCCC will meet on Thursday, December 15, 2016. Franz also announced that Dr. Susan Seale, interim Center of Distance Education Director, requested the distance requirements be reviewed.

Carr moved to approve the November 18, 2016 UCCC meeting minutes. Crumpton seconded the motion. The minutes were approved unanimously.

Hunt moved to approve the modification of the MS in Counselor Education: School Counseling. Crumpton seconded the motion.   Dr. Cheryl Justice appeared in support of the proposal. A committee member pointed out that the curriculum proposal does not match how the program is outlined in the Graduate Bulletin. The content is the same, but it is not in the same order. Rigsby moved to pass the MS in Counselor Education: School Counseling contingent upon the above concern being addressed. Carr seconded the motion. The motion to pass contingent was approved unanimously.

Carr moved to approve the additions of KI 8543 Postural and Locomotor Rehabilitation, KI 8553 Exercise Management for Persons with Disabilities, KI 8563 Motor Behavior in Special Populations, the modification of KI 8603 Disability, Physical Activity and Health, the modification of the MS in Kinesiology: Disability Studies, and the modification of the Ph.D. in Kinesiology: Exercise Science; Sport Studies. Rigsby seconded the motion. The subcommittee appointed to review these proposals made the following comments: KI 8543 is listed as EP 8543 on the course outline and there is a misspelling in Section V of the syllabus for KI 8543; KI 8553 has four activities listed under Method of Evaluation with the fourth being "Active

participation in class discussions" but there are no points listed for class participation but 50 points listed for a practicum that is not listed as one of the activities; KI 8563 has a Method of Evaluation that lists four activities that are numbered strangely and some of the items should be combined to be consistent with the point values given. Crumpton moved to pass the additions of KI 8543, KI 8553, KI 8563, the modification of KI 8603, the modification of the MS in Kinesiology: Disability Studies, and the modification of the Ph.D. in Kinesiology: Exercise Science; Sport Studies contingent upon the above concerns being addressed. Niemann seconded the motion. The motion to pass contingent was approved unanimously.

Crumpton moved to approve the modification of the MS in Educational Psychology: General Education Psychology. Moser seconded the motion. Dr. Anastasia Elder appeared in support of the proposal. Committee members discussed why more credit hours are required for the thesis track of the degree than the non-thesis track and if the thesis track should be called a research project.   Committee members also discussed separating the information about the thesis and non-thesis tracks, so the requirements are clearer. Rigsby moved to pass the modification of the MS in Educational Psychology: General Education Psychology contingent upon the above concerns being addressed. Hunt seconded the motion. The motion to pass contingent was approved unanimously.

Hunt moved to approve the modification of the BS in Poultry Science. Crumpton seconded the motion. Committee members were concerned that the chemistry laboratory courses were not included to help complete the general education requirements, marketing courses were added to the program of study but there is no letter of support from the Marketing Department, and suggested that program advisors know the requirements/prerequisites for the chemistry courses. Carr moved to pass the modification of the BS in Poultry Science contingent upon the above concerns being addressed. Rigsby seconded the motion. The motion to pass contingent was approved unanimously.

Moser moved to adjourn. Crumpton seconded the motion. The motion to adjourn was approved unanimously.

The meeting was adjourned at 2:30 p.m.

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, along with all required copies, to UCCC, Garner Hall, Room 279, Mail Stop 9702.

College: Arts & Sciences   Department: Communication

Contact Person: Frances McDavid   Mail Stop: 9574   E-mail: fom1@comm.msstate.edu

Nature of Change: Modification   **Date:** November 15, 2016

Program will be offered at: Starkville (Campus 1)

Current Degree Program Name: Bachelor of Art   **Effective Date:** Fall 2017

Major: Communication   **Concentration:** Broadcasting; Communication Studies; Journalism; Public Relations; Theatre

New Degree Program Name: Bachelor of Art

Major: Communication   **Concentration:** Broadcasting and Digital Journalism; Communication Studies; Print and Digital Journalism; Public Relations; Theatre

Summary of Proposed Changes:

We propose to modify the Broadcasting and Journalism concentrations to reflect that modern journalists work across broadcast, print, and digital platforms. The new Broadcast and Digital Journalism concentration and the new Print and Digital Journalism concentration will each have 13 hours of specialized media courses, 21 hours in common of media-related courses, 6 hours of core Communication courses, 6 hours of Communication courses that meet other Arts and Sciences requirements, and 3 hours of upper division Communication electives. No changes are being made to the Communication Studies, Public Relations, and Theatre concentrations.

Department Head	11/7/16
Chair, College or School Curriculum Committee	13 Dec 2016
Dean of College or School	12/16/16
Chair, University Committee on Courses and Curricula	
Chair, Graduate Council (if applicable)	
Chair, Deans Council	

SACS Letter Sent

1.   CATALOG DESCRIPTION

Current Catalog Description

Department of Communication

Major Advisors: John Forde, Department Head; Emily Cain, Advising/Recruiting
Coordinator
Office: 130 McComas Hall

The Bachelor of Arts degree in Communication is offered. The department offers
concentrations in Broadcasting, Communication Studies, Journalism, Public
Relations, and Theatre. Students may choose more than one concentration. Minors
are available in all areas. In addition, the department offers numerous online
courses throughout the year. Contact specific advisors for additional information.

The total major consists of 45-49 hours in Communication courses: 12 hours of the
departmental core; and 33-37 hours of additional specified work in the
concentration areas(s). In addition, students complete the Arts & Sciences core
curriculum and electives for a total of 124 semester hours leading to the B.A. Degree.

1. A minimum grade of C in all Communication courses (or approved substitutes) is
required. Students earning a grade lower than C in a Communication course must
retake that course.

2. Incoming freshmen must earn a score of 20 or higher on the ACT Enhanced
English sub-scale before entering the major. Students who believe that the ACT does
not accurately assess their language ability and who can present evidence of above
average language skills (excellent English grades, extensive writing samples, etc.)
will be given the opportunity to satisfactorily complete a screening test and gain
admission to the major.

3. No transfer student, either from another institution or within the university, will
be accepted who has not earned a minimum of 2.0 GPA on all college work
attempted prior to entering the major.

Prospective students are reminded that Communication is a language intensive
discipline. Students with only minimal oral and written language competency
should expect to be at a competitive disadvantage in classes as well as in careers
after graduation. Transfer students with less than a C in English composition
courses may have difficulty with the advanced writing courses required in this
major.

Computer and Camera Requirements

The Department of Communication requires incoming B.A. Communication majors to purchase certain technology and equipment necessary for production and presentation of projects within departmental courses. All incoming students are required to purchase a personal laptop computer and software. Each concentration in the Department provides specific guidelines for hardware and software and a suggested timetable for purchases. The required computer and software must be selected from an approved departmental list of minimum hardware and software requirements available on the Department of Communication website.

Financial aid that includes this requirement may be available by contacting the MSU Student Financial Aid and Scholarship office.

Additionally, upon enrollment in CO 3403 Photographic Communication, students will be required to purchase a digital single-lens reflex (dSLR) camera. The required camera must be selected from an approved departmental list of minimum specifications. The approved list is available on the Department of Communication website.

Communication Lab Fees

Additional fees associated with class materials and technology are associated with certain classes in the Department and are automatically assessed to the students upon enrollment in those courses.

Broadcasting

The Broadcasting concentration prepares students for work in television, radio, multi-media and other areas. Graduates work in front of and behind the camera, from anchorperson to camera technician. Broadcasting graduates also find positions in extension service, university relations, government, and industry.

Communication Studies

The career track for this area is aimed at positions in corporate and public communications offices. Students preparing for graduate school or teaching in Communication and other areas often choose the Communication Studies curriculum.

Journalism

In addition to filling positions for newspapers, magazines, and digital publications in the state and around the country, graduates of the Journalism concentration obtain news-related jobs in universities, business, and industrial relations.

Public Relations

The Public Relations concentration prepares students for a variety of professional positions. In addition to work with public relations and advertising firms, graduates are employed by colleges and schools, newspapers and broadcasting organizations, banks, churches, hospitals, insurance companies, businesses and corporations, charitable and political groups, and state and federal governments.

Theatre

Students choosing the Theatre concentration find positions with regional and repertory companies, community theatres (both on stage and off stage), and professional theatres in educational institutions, broadcasting, and film.

Communication Minors

Minors in each of the concentration areas (Broadcasting, Communication Studies. Journalism, Public Relations, and Theatre) are available. Because of the differences between and among the disciplines in the department, students considering a minor are advised to meet with the department head or advising coordinator prior to making a decision regarding a minor. The Department of Communication endeavors to work with individual students so that the minor field combines appropriately with his/her major field of study. Students with majors in business, agriculture, social sciences, and the humanities are especially encouraged to consider a minor in one of the related areas.

Professional Societies and Scholarships

Students in any of the departmental concentration areas with superior averages after completing certain courses may qualify for membership in the Theta Alpha Chapter of Lambda Pi Eta, the official honor society of the National Communication Association. Students in Theatre may be tapped for Alpha Psi Omega honorary after completing certain work in theatrical productions.

Proposed Catalog Description

Department of Communication

Major Advisors: John Forde, Department Head; Emily Cain, Advising/Recruiting Coordinator
Office: 130 McComas Hall

The Bachelor of Arts degree in Communication is offered. The department offers concentrations in Broadcast and Digital Journalism, Communication Studies, Print and Digital Journalism, Public Relations, and Theatre. Students may choose more than one concentration. Minors are available in all areas. In addition, the

department offers numerous online courses throughout the year. Contact specific advisors for additional information.

The total major consists of 48-49 hours in Communication courses: 12 hours of the departmental core; and 36-37 hours of additional specified work in the concentration areas(s). In addition, students complete the Arts & Sciences core curriculum and electives for a total of 124 semester hours leading to the B.A. Degree.

1. A minimum grade of C in all Communication courses (or approved substitutes) is required. Students earning a grade lower than C in a Communication course must retake that course.

2. Incoming freshmen must earn a score of 20 or higher on the ACT Enhanced English sub-scale before entering the major. Students who believe that the ACT does not accurately assess their language ability and who can present evidence of above average language skills (excellent English grades, extensive writing samples, etc.) will be given the opportunity to satisfactorily complete a screening test and gain admission to the major.

3. No transfer student, either from another institution or within the university, will be accepted who has not earned a minimum of 2.0 GPA on all college work attempted prior to entering the major.

Prospective students are reminded that Communication is a language intensive discipline. Students with only minimal oral and written language competency should expect to be at a competitive disadvantage in classes as well as in careers after graduation. Transfer students with less than a C in English composition courses may have difficulty with the advanced writing courses required in this major.

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Broadcast and Digital Journalism

The Broadcast and Digital Journalism concentration prepares students for work in television, radio, multi-media and other areas. Graduates work in front of and behind the camera. In addition to the expected journalistic jobs, graduates also find positions in extension service, university relations, government, and industry.

Communication Studies

The career track for this area is aimed at positions in corporate and public communications offices. Students preparing for graduate school or teaching in Communication and other areas often choose the Communication Studies curriculum.

Print and Digital Journalism

In addition to filling positions for newspapers, magazines, and digital publications in the state and around the country, graduates of the Print and Digital Journalism concentration obtain news-related jobs in universities, business, and industrial relations.

Public Relations

The Public Relations concentration prepares students for a variety of professional positions. In addition to work with public relations and advertising firms, graduates are employed by colleges and schools, newspapers and broadcasting organizations, banks, churches, hospitals, insurance companies, businesses and corporations, charitable and political groups, and state and federal governments.

Theatre

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Numerous scholarships are available in the Department of Communication. See the department's website for a complete list of available scholarships. Applicants may pick up necessary forms in the department office or by contacting the Scholarship Committee Chair, P.O. Box PF, Mississippi State, MS 39762.

Professional societies are available for students in most of the concentration areas. The Public Relations Student Society of America, the Public Relations Association of Mississippi, and the Southern Public Relations Federation provide pre-professional experience and contacts for students of Public Relations. Blackfriars is available to students of Theatre. The Student Broadcasting Association services students in the Broadcasting concentration; this group is directly involved in the production of several television programs.

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	Degree: Bachelor of Arts
Major: Communication	Major: Communication
Concentration: *Broadcasting*, Communication Studies, *Journalism*, Public Relations, and Theatre	Concentration: **Broadcast and Digital Journalism,** Communication Studies, **Print and Digital Journalism,**

	Public Relations, and Theatre
The Bachelor of Arts degree in Communication is offered. The department offers concentrations in *Broadcasting*, Communication Studies, *Journalism*, Public Relations, and Theatre. Students may choose more than one concentration. Minors are available in all areas. In addition, the department offers numerous online courses throughout the year. Contact specific advisors for additional information. The total major consists of *45*-49 hours in Communication courses: 12 hours of the departmental core; and *33*-37 hours of additional specified work in the concentration areas(s). In addition, students complete the Arts & Sciences core curriculum and electives for a total of 124 semester hours leading to the B.A. Degree. 1. A minimum grade of C in all Communication courses (or approved substitutes) is required. Students earning a grade lower than C in a Communication course must retake that course. 2. Incoming freshmen must earn a score of 20 or higher on the ACT Enhanced English sub-scale before entering the major. Students who believe that the ACT does not accurately assess their language ability and who can present evidence of above average language skills (excellent English grades, extensive writing samples, etc.) will be given the opportunity to satisfactorily complete a screening test and gain admission to the major. 3. No transfer student, either from another institution or within the university, will be accepted who has not earned a minimum of 2.0 GPA on all college work attempted prior to entering the major. Prospective students are reminded that Communication is a language intensive discipline. Students with only minimal oral and written language competency should expect to be at a competitive disadvantage in classes as well as in careers after graduation. Transfer students with less than a C in English composition courses may have difficulty with the advanced writing courses required in this major. Computer and Camera Requirements The Department of Communication requires incoming B.A. Communication majors to purchase certain technology and equipment necessary for production and presentation of projects within departmental courses. All incoming students are required to purchase a personal laptop computer and software. Each concentration in the Department provides specific	The Bachelor of Arts degree in Communication is offered. The department offers concentrations in **Broadcast and Digital Journalism**, Communication Studies, **Print and Digital Journalism**, Public Relations, and Theatre. Students may choose more than one concentration. Minors are available in all areas. In addition, the department offers numerous online courses throughout the year. Contact specific advisors for additional information. The total major consists of **48**-49 hours in Communication courses: 12 hours of the departmental core; and **36**-37 hours of additional specified work in the concentration areas(s). In addition, students complete the Arts & Sciences core curriculum and electives for a total of 124 semester hours leading to the B.A. Degree. 1. A minimum grade of C in all Communication courses (or approved substitutes) is required. Students earning a grade lower than C in a Communication course must retake that course. 2. Incoming freshmen must earn a score of 20 or higher on the ACT Enhanced English sub-scale before entering the major. Students who believe that the ACT does not accurately assess their language ability and who can present evidence of above average language skills (excellent English grades, extensive writing samples, etc.) will be given the opportunity to satisfactorily complete a screening test and gain admission to the major. 3. No transfer student, either from another institution or within the university, will be accepted who has not earned a minimum of 2.0 GPA on all college work attempted prior to entering the major. Prospective students are reminded that Communication is a language intensive discipline. Students with only minimal oral and written language competency should expect to be at a competitive disadvantage in classes as well as in careers after graduation. Transfer students with less than a C in English composition courses may have difficulty with the advanced writing courses required in this major. Computer and Camera Requirements The Department of Communication requires incoming B.A. Communication majors to purchase certain technology and equipment necessary for production and presentation of projects within departmental courses. All incoming students are required to purchase a personal laptop computer and software. Each concentration in the Department provides specific guidelines for hardware and software and a suggested timetable for purchases. The required computer and software must be selected from an

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Concentration Description *Broadcasting* The *Broadcasting* concentration prepares students for work in television, radio, multi-media and other areas. Graduates work in front of and behind the camera, *from anchorperson to camera technician.* Broadcasting graduates also find positions in extension service, university relations, government, and industry. Communication Studies The career track for this area is aimed at positions in corporate and public communications offices. Students preparing for graduate school or teaching in Communication and other areas often choose the Communication Studies curriculum. *Journalism* In addition to filling positions for newspapers, magazines, and digital publications in the state and around the country, graduates of the Journalism concentration obtain news-related jobs in universities, business, and industrial relations. Public Relations The Public Relations concentration prepares students for a variety of professional positions. In addition to work with public relations and advertising firms, graduates are employed by colleges and schools, newspapers and broadcasting organizations, banks, churches, hospitals, insurance companies, businesses and corporations, charitable and political groups, and state and federal governments. Theatre	Concentration Description **Broadcast and Digital Journalism** The **Broadcast and Digital Journalism** concentration prepares students for work in television, radio, multi-media and other areas. Graduates work in front of and behind the camera. **In addition to the expected journalistic jobs,** graduates also find positions in extension service, university relations, government, and industry. Communication Studies The career track for this area is aimed at positions in corporate and public communications offices. Students preparing for graduate school or teaching in Communication and other areas often choose the Communication Studies curriculum. **Print and Digital Journalism** In addition to filling positions for newspapers, magazines, and digital publications in the state and around the country, graduates of the **Print and Digital** Journalism concentration obtain news-related jobs in universities, business, and industrial relations. Public Relations The Public Relations concentration prepares students for a variety of professional positions. In addition to work with public relations and advertising firms, graduates are employed by colleges and schools, newspapers and broadcasting organizations, banks, churches, hospitals, insurance companies, businesses and corporations, charitable and political groups, and state and federal governments. Theatre

Students choosing the Theatre concentration find positions with regional and repertory companies, community theatres (both on stage and off stage), and professional theatres in educational institutions, broadcasting, and film.

CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
English Composition EN 1103 English Composition I or EN 1163 Accelerated Composition I EN 1113 English Composition II or EN 1173 Accelerated Composition II	6	English Composition EN 1103 English Composition I or EN 1163 Accelerated Composition I EN 1113 English Composition II or EN 1173 Accelerated Composition II	6
Foreign Language 3 semesters - one Foreign Language (see advisor)	9	Foreign Language 3 semesters - one Foreign Language (see advisor)	9
Humanities (General Education): English Literature - see General Education courses History - see General Education courses Philosophy - see General Education courses	9	Humanities (General Education): English Literature - see General Education courses History - see General Education courses Philosophy - see General Education courses	9
Humanities Elective[1]	9	Humanities Elective[1]	9
Math (General Education): MA 1313 College Algebra MA 1323 Trigonometry or ST 2113 Introduction to Statistics	6	Math (General Education): MA 1313 College Algebra MA 1323 Trigonometry or ST 2113 Introduction to Statistics	6
Fine Arts (General Education: CO 1503 Introduction to Theatre (required unless student has completed acceptable Fine Arts other than Theatre course prior to declaring CO major)	3	Fine Arts (General Education): CO 1503 Introduction to Theatre (required unless student has completed acceptable Fine Arts other than Theatre course prior to declaring CO major)	3
Natural Sciences (2 labs required from Gen Ed): Physical Science w/Lab[2] Life Science w/Lab[3]	6-8	Natural Sciences (2 labs required from Gen Ed): Physical Science w/Lab[2] Life Science w/Lab[3]	6-8
Extra Science Natural Science Elective	3-4	Extra Science Natural Science Elective	3-4
Social/Behavioral Sciences (Gen Ed)[4]: PSY 1013 General Psychology SO 1003 Introduction to Sociology GR 1123 Introduction to World Geography CO 1403 Introduction to Mass Media	18	Social/Behavioral Sciences (Gen Ed)[4]: PSY 1013 General Psychology SO 1003 Introduction to Sociology GR 1123 Introduction to World Geography CO 1403 Introduction to Mass Media	18

or CO 1223 Introduction to Communication Theory[5] Electives: 6 hours		or CO 1223 Introduction to Communication Theory[5] Electives: 6 hours	
Major Core Students should check for prerequisites for all courses. Consult advisor or course descriptions in catalog. CO 1003 Fundamental of Public Speaking[6] CO 1223 Introduction to Communication Theory[5] or CO 1403 Introduction to Mass Media	6	Major Core Students should check for prerequisites for all courses. Consult advisor or course descriptions in catalog. CO 1003 Fundamental of Public Speaking[6] CO 1223 Introduction to Communication Theory[5] or CO 1403 Introduction to Mass Media	6
Choose one or more of the following concentrations: *Broadcasting Concentration (BCST)* CO 2333 Television Production CO 2413 Introduction to News Writing and Reporting CO 3313 News Writing for Electronic Media *or CO 3343 Writing for the Media* CO 3333 Advanced Television Production *CO 3833 Interviewing in Communication* CO 4313 Mass Media Law *CO 4323 Mass Media and Society* *CO 4373 Practicum in Television News* *CO Elective – Upper Division suggested* *Upper Division Electives – see advisor* General electives[1] [1] May need to be taken at Upper Division level to meet A&S UD requirement. Communication Studies Concentration (CMGT) CO 2253 Fundamentals of Interpersonal Communication CO 3213 Small Group Communication CO 4203 Nonverbal Communication CO 4213 Political Communication CO 4223 Advanced Communication Theory CO 4243 Rhetorical Theory CO 4253 Elements of Persuasion CO 4313 Mass Media Law or CO 4323 Mass Media and Society Upper-Division CO Electives - see advisor General Electives[1] [1] May need to be taken at Upper Division level to meet A&S UD requirement. Journalism Concentration (JOUR)	3 3 3 3 *3* 3 *3* *3* *3* 6 *13-16* 46-49	Choose one or more of the following concentrations: **Broadcast and Digital Journalism Concentration (BCST)** CO 2413 Intro to News Writing and Reporting CO 2333 Television Production CO 3313 News Writing for Electronic Media CO 3333 Advanced TV Production **CO 3403 Photographic Communication** **CO 3713 Digital Communication** CO 4313/6313 Mass Media Law **CO 4343 Backpack Video Journalism** **CO 4394 Broadcast Capstone** **CO 4403/6403 Journalism Ethics** **CO 4713 Digital Communication II** **Upper Division CO elective – see advisor** General electives[1] [1] May need to be taken at Upper Division level to meet A&S UD requirement. Communication Studies Concentration (CMGT) CO 2253 Fundamentals of Interpersonal Communication CO 3213 Small Group Communication CO 4203 Nonverbal Communication CO 4213 Political Communication CO 4223 Advanced Communication Theory CO 4243 Rhetorical Theory CO 4253 Elements of Persuasion CO 4313 Mass Media Law or CO 4323 Mass Media and Society Upper-Division CO Electives - see advisor General Electives[1] [1] May need to be taken at Upper Division level to meet A&S UD requirement.	3 3 3 3 **3** **3** 3 **3** **4** **3** **3** **3** **9-12** 46-49

CO 2413 Introduction to News Writing and Reporting	3	
CO 2423 News Editing, Typography and Makeup	*3*	
CO 3403 Photographic Communication	3	
CO 3423 Feature Writing	3	
CO 3443 Advanced News Writing and Reporting	3	
CO 4313 Mass Media Law	3	
CO 4403 Journalism Ethics	3	
CO Elective – Upper Division suggested	*3*	
Upper Division Electives – see advisor	*9*	
General electives[1]	13-16	

[1] May need to be taken at Upper Division level to meet A&S UD requirement.

Public Relations Concentration

CO 2333 Television Production or CO 3403 Photographic Communication or CO 3713 Digital Communication	46-49
CO 2413 Introduction to News Writing and Reporting	
CO 3803 Principles of Public Relations	
CO 3813 Public Relations Case Problems	
CO 3853 Public Relations Writing	
CO 3863 Public Relations Production	
CO 4253 Elements of Persuasion	
CO 4313 Mass Media Law or CO 4323 Mass Media and Society	
CO 4803 Research in Public Relations and Advertising	
CO 4813 Public Relations in Organizations	
CO Upper-Division Electives	
General Electives[1]	

[1] May need to be taken at Upper Division level to meet A&S UD requirement.

Theatre Concentration (THEA)

CO 1533 Theatre Practicum #3 or CO 1543 Theatre Practicum #4 or CO 1553 Theatre Practicum #5 or CO 1563 Theatre Practicum #6	46-49
CO 2013 Voice and Articulation	
CO 2613 Introduction to Oral Interpretation	
CO 2503 Acting	
CO 2524 Stagecraft and Lighting	
CO 4504 History of Theatre	
CO 2544 Makeup and Costuming	
CO 4524 Directing	
CO 4573 Theatre Management	

Print and Digital Journalism Concentration (JOUR)

CO 2413 Intro to News Writing and Reporting	3
CO 2333 Television Production	**3**
CO 3403 Photographic Communication	3
CO 3713 Digital Communication	**3**
CO 4313/6313 Mass Media Law	3
CO 4403/6403 Journalism Ethics	3
CO 4713 Digital Communication II	**3**
CO 3433 Editing and Design	**3**
CO 3423 Feature Writing	3
CO 3443 Advanced News Writing and Reporting	3
CO 4494 Bulldog Online Newsroom	**4**
Upper Division CO elective – see advisor	**3**
General electives[1]	**9-12**

[1] May need to be taken at Upper Division level to meet A&S UD requirement.

Public Relations Concentration

CO 2333 Television Production or CO 3403 Photographic Communication or CO 3713 Digital Communication	46-49
CO 2413 Introduction to News Writing and Reporting	
CO 3803 Principles of Public Relations	
CO 3813 Public Relations Case Problems	
CO 3853 Public Relations Writing	
CO 3863 Public Relations Production	
CO 4253 Elements of Persuasion	
CO 4313 Mass Media Law or CO 4323 Mass Media and Society	
CO 4803 Research in Public Relations and Advertising	
CO 4813 Public Relations in Organizations	
CO Upper Division Electives	
General Electives[1]	

[1] May need to be taken at Upper Division level to meet A&S UD requirement.

Theatre Concentration (THEA)

CO 1533 Theatre Practicum #3 or CO 1543 Theatre Practicum #4 or CO 1553 Theatre Practicum #5 or CO 1563 Theatre Practicum #6	46-49
CO 2013 Voice and Articulation	
CO 2613 Introduction to Oral Interpretation	
CO 2503 Acting	

CO 4533 Advanced Acting CO 4583 Playwriting General Electives[1] [1] May need to be taken at Upper Division level to meet A&S UD requirement.		CO 2524 Stagecraft and Lighting CO 4504 History of Theatre CO 2544 Makeup and Costuming CO 4524 Directing CO 4573 Theatre Management CO 4533 Advanced Acting CO 4583 Playwriting General Electives[1] [1] May need to be taken at Upper Division level to meet A&S UD requirement.	
Total Hours	124	Total Hours	124
General Education and College Requirements [1] Must be selected from 2 different areas. Not required to be selected from core listing; may have to be taken at Upper Division level to meet 31 hours A&S UD requirement [2] CH, GG, or PH; see General Education courses. [3] BIO, EPP, or PO; see General Education courses. [4] Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Not required to be selected from core listing; may have to be taken at Upper Division level to meet 31 hours A&S UD requirement. Only one Economics allowed. [5] CO 1223 or CO 1403 will count as 3 additional Social Science hours to reach 12 hour elective total. The course not counted as a Social Science will be required additionally in the major. [6] CO 1003 is required unless student has completed CO 1013 prior to declaring CO major. This course satisfies the Oral Communication requirement.		General Education and College Requirements [1] Must be selected from 2 different areas. Not required to be selected from core listing; may have to be taken at Upper Division level to meet 31 hours A&S UD requirement [2] CH, GG, or PH; see General Education courses. [3] BIO, EPP, or PO; see General Education courses. [4] Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Not required to be selected from core listing; may have to be taken at Upper Division level to meet 31 hours A&S UD requirement. Only one Economics allowed. [5] CO 1223 or CO 1403 will count as 3 additional Social Science hours to reach 12 hour elective total. The course not counted as a Social Science will be required additionally in the major. [6] CO 1003 is required unless student has completed CO 1013 prior to declaring CO major. This course satisfies the Oral Communication requirement.	

3.   JUSTIFICATION AND LEARNING OUTCOMES

Program Review/Assessment

1.   Comparison with leading academic program in the discipline
The Broadcasting and Journalism concentrations suffer from a lack of visibility, given that for many years they have existed under the shadow of comparable programs at the University of Mississippi. Part of this lack of visibility can be attributed to the concentrations' inability to compete with a similar program in the state. The University of Mississippi's Meek School of Journalism and New Media offers 3 degree programs – Bachelor of Arts in Journalism, Bachelor of Science in Integrated Marketing and Communications, and Master of Arts in Journalism, which prepare students for professional careers in journalism through education and hands-on experience. Mississippi State University's Broadcasting and Journalism concentrations, by comparison, offers 1 degree program – a Bachelor of Arts in Communication, and houses no graduate program. Broadcasting and Journalism at MSU also suffer from an outdated curriculum that does not reflect the multimedia skills necessary to succeed in the media industry.

     The academic programs at MSU and UM do share some similarities. In both programs, students gain an understanding of how to organize information, how to ask questions and interview to seek information, what the purpose of news is, how news is produced and created, as well as the impact it can have once it is disseminated. Students are taught to appreciate the power of the message they may send and to conduct themselves ethically as they provide those messages. Both programs offer students the opportunity for publication in a campus newspaper and access to valuable internships throughout the Southeast and across the country.

     The differences between the programs, however, are striking. The Meek School offers courses in specialized reporting, advanced broadcast production, journalism practicum, journalism innovation, and depth reporting that are not offered at MSU due to a lack of faculty and a curriculum in need of updating. The Meek School employs 17 full- or part-time journalism faculty, while the Journalism concentration at MSU employs 6 full- or part-time faculty. Meek School students also have the opportunity to write, produce and perform in daily television news shows, as do students in peer and peer-plus programs at Auburn University, the University of Alabama, the University of Georgia, and Troy University. MSU only offers a once-per-week news show.

     MSU can gain a relative advantage through the proposed curriculum revision by establishing capstone courses in Broadcasting and Journalism concentrations, functioning as digital newsrooms, unlike any offered at UM.

2. *External review assessment and feedback of the degree program*

The Department commissioned an external review of all its concentrations in June 2014. The thorough review was highly critical of the Broadcasting and Journalism concentrations, but offered specific solutions for improving the program. The proposed degree changes directly address the review's recommendations, which are even more crucial now than they were two years ago. The review called for two principle measures: (1) A curriculum revision to recognize the growing importance of multimedia and increased convergence between print and broadcast journalism, and (2) Developing or designating capstone courses.

A curriculum revision to reflect today's multimedia world is necessary to give students the educational experience they need to compete in today's market. The current Journalism concentration is most closely associated with print. While certain fundamental skills, such as clear and concise writing, evidence-based reporting, deadline orientation, and editing are being adequately taught, many technical skills that enhance knowledge and practice of production and publishing in a digital environment are being ignored in the current curriculum. An updated curriculum will reflect necessary skills such as digital publishing and platform integration, both of which are requirements of today's media environment.

The Broadcasting concentration is most closely aligned with television news production. While these skills, such as broadcast writing, videography, editing, producing, and performance are still important, the current curriculum does not provide students with necessary skills in digital news production, web video production, and backpack video journalism. The proposed curriculum modifications are in direct response to requirements of today's media environment.

As part of the proposed changes, Broadcast and Journalism concentrations will add capstone courses, which will give students and faculty the opportunity to apply digital news and production skills and showcase their work to the community, campus and beyond, in a converged, digital newsroom setting.

A movement away from separate broadcast and journalism concentrations and toward multimedia journalism as outlined in the proposed curriculum better prepares students for the job market and increases exposure for the department through the recruitment, development, and retention of better-trained students.

The Department of Communication Advisory Board, which consists of alumni, industry professionals, and donors, was consulted regarding curriculum modification. The board understands the need for such changes and supports them fully.

The program modification proposal must also address the following questions:

1. Will this program change meet local, state, regional and national educational and cultural needs? If so, please explain.

Yes. Revising the Broadcast and Journalism programs will better prepare students for employment opportunities in today's multimedia market. The current curriculum does not offer digital skills training and immersion in a digital news environment, both of which are necessary for students seeking entry-level (and beyond) employment. The proposed changes also increase the potential for cross-college cooperation, as the construction and deployment of an on-campus, digital studio, along with the instruction necessary to operate such a facility, stands to benefit students from other disciplines who could benefit from exposure to current industry standards.

2. Will this program change result in duplication in the System. If so, please describe

No. Revising the Broadcasting and Journalism programs will continue the same duplication in the System that has existed for decades, but will not add to such duplication. Similar programs exist concurrently at Jackson State University, the University of Mississippi, and the University of Southern Mississippi, and changes to MSU's Broadcasting and Journalism concentrations will have no impact on the function, reach or mission of other institutions. Such changes will, however, assist Mississippi State University in its mission to provide access and opportunity for students from all sectors of the state's diverse population, as well as from other states and countries.

3. Will this program/change advance student diversity in the discipline? If so, please describe.

Yes. MSU's Broadcast and Journalism concentrations are already diverse, in that 63% of students in these concentrations are female and 38% are African American. An updated curriculum will undoubtedly attract more students to the discipline who reflect this diversity. Consequently, updates to the curriculum will produce better-prepared graduates who can advance diversity within the media marketplace – a marketplace that both needs and stands to benefit from increased diversity.

4. Will the program change result in an increase in the potential placement of graduates in MS, the Southeast, and the U.S.? If so, please describe.

Yes. The proposed program changes will provide undergraduates with more relevant and intensive training that better reflects the current media marketplace. Such training will make graduates better suited for the job market by equipping them with skills today and tomorrow's media professionals must have, thus increasing the potential for placement of graduates across the state, region and nation. The department has long-established relationships with professional broadcasters and journalists and will be better able to capitalize on these

relationships – especially in terms of job placement -- by sending more highly trained graduates into the workforce.

5.   Will this program change result in an increase in the potential salaries of graduates in MS, the Southeast, and the U.S.? If so, please describe.

Yes. Better, more intensive training for students leads to graduates better equipped to contribute to the media marketplace and thus more likely to advance in their field. Such advancement means better opportunities with more attractive publications, organizations, and destinations, and higher potential salaries earlier in career tracks.

4.   SUPPORT
A letter of support is attached.

5.   PROPOSED 4-LETTER ABBREVIATION

CO (Unchanged)

6.   EFFECTIVE DATE

Fall 2017

November 11, 2016

Dear Curriculum Committees:

The curriculum committee of the Department of Communication has met and approved the Degree Modification Program for the Journalism and Broadcasting concentrations in the Department of Communication.

In summary, both concentrations will be undergoing a name change (Journalism to 'Print and Digital Journalism' and Broadcasting to 'Broadcasting and Digital Journalism') and will now share a common core of classes before diverging into media specific courses and separate capstones. This change will reflect that modern journalists work across broadcast, print, and digital platforms. The new Broadcast and Digital Journalism concentration and the new Print and Digital Journalism concentration will each have 13 hours of specialized media courses, 21 hours in common of media-related courses, 6 hours of core Communication courses, 6 hours of Communication courses that meet other Arts and Sciences requirements, and 3 hours of upper division Communication electives.

With this change several courses will be deleted, modified or added to the curriculums in question. These changes have also been reviewed and approved by the curriculum committee of the Department of Communication. Details and justifications for the course modifications and additions can be found on the individual course proposals.

The course CO 3413: News Gathering will be deleted from the curriculum. This course has never been taught in the department and the skills and knowledge originally intended for inclusion in this course have been successfully integrated into other courses in the curriculum.

> *NOTE: The course CO 4373: Practicum in Television News will be deleted in the future after the new curriculum is in place and students under the current curriculum have graduated.*

The course CO 3433 Editing & Design has been modified from CO 2423 News Editing, Typography, and Makeup. It has also shifted from a Lecture format to a Lecture/Lab format.

The course CO 4343: Backpack Video Journalism has been added to the curriculum of the modified Broadcasting and Digital Journalism concentration.

The course CO 4394: Broadcast Capstone has been added as a capstone course to the curriculum of the modified Broadcasting and Digital Journalism concentration.

The course CO 4494: Bulldog Online Newsroom has been added as a capstone course to the curriculum of the modified Print and Digital Journalism concentration.

Thank you and please let us know of you need any additional information.

Wendy Roussin, Chair

Skye Cooley
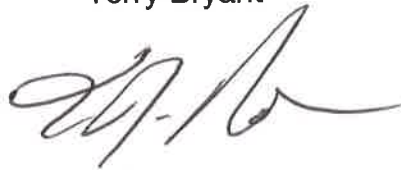
Philip Poe
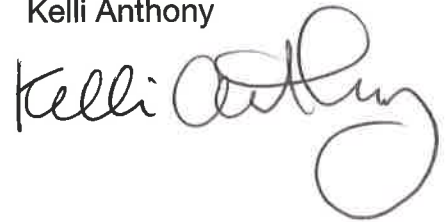
Cody Stockstill

Terry Bryant

Kelli Anthony

Cheryl Chambers

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, along with all required copies, to UCCC, Butler-Williams Building, Suite B, 100 Walker Road, (Mail Stop 9699).

College or School: Business   **Department:** Adkerson School of Accountancy

Contact Person: John Rigsby   **Phone:** 5-1640   **E-mail:** jrigsby@cobilan.msstate.edu

Nature of Change: Modification   **Date Initiated:** Fall 2016   **Effective Date:** Spring 2017

New or Current Degree Program Name: Masters of Professional Accountancy (MPA)

Summary of Proposed Changes:

There are 2 proposed changes to the MPA program.

1. Delete ACC 6053 International Accounting from the program of study.
2. Add ACC 8183 International Accounting as an elective to the program of study.

Approved: *Date:*

_____   _____
Department Head

_____   _____
Chair, College or School Curriculum Committee

_____   _____
Dean of College or School

_____   _____
Chair, University Committee on Courses and Curricula

_____   _____
Chair, Graduate Council (if applicable)

_____   _____
Chair, Deans Council

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, along with all required copies, to UCCC, Butler-Williams Building, Suite B, 100 Walker Road, (Mail Stop 9699).

College or School: **Business**   **Department: Adkerson School of Accountancy**

Contact Person: John Rigsby   **Phone: 5-1640**   **E-mail: jrigsby@cobilan.msstate.edu**

Nature of Change: Modification   **Date Initiated: Fall 2016**   **Effective Date: Spring 2017**

New or Current Degree Program Name: Masters of Professional Accountancy (MPA)

Summary of Proposed Changes:

There are 2 proposed changes to the MPA program.

1. Delete ACC 6053 International Accounting from the program of study.

2. Add ACC 8083 International Accounting as an elective to the program of study.

Approved:

_____
Department Head

_____
Chair, College or School Curriculum Committee

_____
Dean of College or School

_____
Chair, University Committee on Courses and Curricula

_____
Chair, Graduate Council (if applicable)

_____
Chair, Deans Council

Date:

11.22.16

Nov, 22, 2016

12/1/16

_____

_____

_____

1. Catalog Description

This change involves deleting the description of ACC 6053 International Accounting and adding a description of ACC 8183 International Accounting.

2. Curriculum Outline

MPA Program of Study:

Current Requirements:	Proposed Requirements:
The candidate must complete 30 hours of coursework at the graduate level beyond any prerequisite courses. As prescribed below, this program is composed of 21 hours of accounting coursework and 9 hours of other business courses. **Required Accounting Courses (15 hours):** ACC 6023 Advanced Accounting (if not taken as undergraduate). ACC 6063 Income Tax II (if not taken as an undergraduate). ACC 8013 Seminar in Financial Accounting Theory. ACC 8023 Advanced Managerial Accounting. ACC 8033 Business Assurance Services.	The candidate must complete 30 hours of coursework at the graduate level beyond any prerequisite courses. As prescribed below, this program is composed of 21 hours of accounting coursework and 9 hours of other business courses. **Required Accounting Courses (15 hours):** ACC 6023 Advanced Accounting (if not taken as undergraduate). ACC 6063 Income Tax II (if not taken as an undergraduate). ACC 8013 Seminar in Financial Accounting Theory. ACC 8023 Advanced Managerial Accounting. ACC 8033 Business Assurance Services.
Accounting Electives (6 hours from the following courses): ACC 6043 Municipal and Government Accounting (if not taken as an undergraduate). *ACC 6053 International Accounting* ACC 8043 Fraud Examination. ACC 8053 Professional Accounting Policy and Research. ACC 8063 Research in Tax Practice and Procedures. ACC 8073 Taxation of Corporations and Shareholders. ACC 8093 Taxation of Partnerships, S Corporations, Trusts, and Estates. ACC 8113 Advanced Individual Taxation and Wealth Management. ACC 8123 Tax Topics. NOTE: No more than nine hours of coursework in the 30-hour program may be at the 6000 level. **Business Electives:** *Select nine hours of graduate-level business or accounting courses.* **Concentration in Systems**—In lieu of 9 hours of accounting and business electives, a student may elect a concentration in systems by selecting the three courses below: ACC 8043 Fraud Examination. 3 hours BIS 8213* Advanced Systems Analysis and Design. 3 hours BIS 8313 Advanced Database Design Administration. 3 hours *Programming prerequisites may be required.	**Accounting Electives (6 hours from the following courses):** ACC 6043 Municipal and Government Accounting (if not taken as an undergraduate). ACC 8043 Fraud Examination. ACC 8053 Professional Accounting Policy and Research. ACC 8063 Research in Tax Practice and Procedures. ACC 8073 Taxation of Corporations and Shareholders. ACC 8093 Taxation of Partnerships, S Corporations, Trusts, and Estates. ACC 8113 Advanced Individual Taxation and Wealth Management. ACC 8123 Tax Topics. **ACC 8183 International Accounting** NOTE: No more than nine hours of coursework in the 30-hour program may be at the 6000 level. **Business Electives:** *Select nine hours of graduate-level business or accounting courses.* **Concentration in Systems**—In lieu of 9 hours of accounting and business electives, a student may elect a concentration in systems by selecting the three courses below: ACC 8043 Fraud Examination. 3 hours BIS 8213* Advanced Systems Analysis and Design. 3 hours BIS 8313 Advanced Database Design Administration. 3 hours *Programming prerequisites may be required.

3. Justification and Student Learning Outcome

The ACC 6053 International Accounting course has not been taught by the Adkerson School of Accountancy in over 20 years. The School is deleting this course from the MPA program and adding an 8000-level International Accounting course to add flexibility and choice for graduate accounting students. A special topics course, ACC 8990 International Accounting, has been taught for the last two years and cannot be taught again. It has to be converted to a regular course.

The Master of Business Administration (MBA) program in the College of Business has severely restricted access to MBA courses for MPA students and others by moving to a cohort sequence and modifying the content of their courses. As a result MPA students need more choices for their nine hours of business electives required in the MPA program. Last year the nine hours of graduate business elective was modified to allow not just MBA courses but also graduate accounting courses as acceptable business elective courses for MPA students. ACC 8990 International Accounting has been used as a business elective for the last two years by numerous MPA students in meeting this business elective requirement.

A problem with keeping the International Accounting course at the 6000-level is that there are two required accounting courses at the 6000-level, i.e., ACC 6023 Advanced Accounting and ACC 6063 Income Tax II. In addition, if MPA students don't take ACC 6043 Governmental Accounting at the undergraduate level then it is taken at the graduate level because a governmental accounting course is a requirement in order to take the CPA examination. Also several of the available MBA elective business courses available to MPA students are 6000-level courses. As a result moving the International Accounting course to an 8000-level course provides greater flexibility and choice for MPA students by opening up other choices for them.

2. Support

This change was approved unanimously by the Adkerson School of Accountancy as indicated in the attached letter of support. The degree modification requires no additional faculty support at current or expected enrollment levels. The School currently has sufficient personnel and other infrastructure to make this change.

3. Proposed 4-Letter Abbreviation

The abbreviations for the MPA program will not change.

4. Effective Date

Spring 2017

November 21, 2016

To the University Courses & Curriculum Committee:
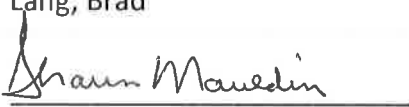
The faculty of the Adkerson School of Accountancy support the following proposed changes to the degree requirements of the Master of Professional Accountancy: (1) delete ACC 6053 International Accounting as an elective course, and (2) add ACC 8083 International Accounting as an elective course. The course ACC 8083 has been taught as a Special Topics course for the last two years and needs to be changed to a regular course.

Noel Addy
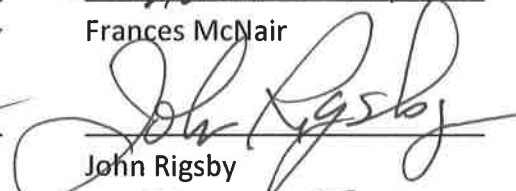
Frances McNair

Berglund, Nathan

John Rigsby

Clyde Herring

Ryan Seay

Lang, Brad

Alan Stancill

Shawn Mauldin

Brad Trinkle

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, along with all required copies, to UCCC, Garner Hall, Room 279, Mail Stop 9702.

College: Engineering   **Department:** Computer Science and Eng

Contact Person: Dr. David Dampier   **Mail Stop:** 9637   **E-mail:** dad6@msstate.edu

Nature of Change: Add New Degree - IHL Approval Required   **Date:** 12/2016

Program will be offered at: Starkville (Campus 1)

Current Degree Program Name: Select One   **Effective Date:** 08/2018

Major: **Concentration:**

New Degree Program Name: Bachelor of Science

Major: Cyber Security and Operations   **Concentration:** Cyber Defense/Cyber Operations

Summary of Proposed Changes:
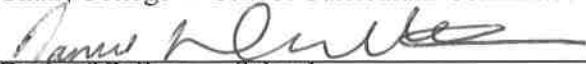
This proposal requests permission to offer a new BS in Cyber Security and Operations. This degree will have two concentrations: Cyber Defense and Cyber Operations.

_____   _____
Department Head

_____   _____
Chair, College or School Curriculum Committee

_____   _____
Dean of College or School

_____   _____
Chair, University Committee on Courses and Curricula

_____   _____
Chair, Graduate Council (if applicable)

_____   _____
Chair, Deans Council

[ ]   **SACS Letter Sent**

Appendix 7: Authorization to Plan a New Degree Program

Institution: Mississippi State University

Date of Implementation:	Six Year Cost of Implementation:	Per Student Cost of Implementation:
August 16, 2018	$1,860,728	$9,304

Program Title as will Appear on Academic Program Inventory, Diploma, and Transcript:	Six Digit CIP Code:
Cyber Security and Operations	11.1003

Degree(s) to be Awarded:	Credit Hour Requirements:
Bachelor of Science	128

List any institutions within the state offering similar programs:

None

Responsible Academic Unit(s):	Institutional Contact:
Department of Computer Science and Engineering	Dr. David A. Dampier

Number of Students Expected to Enroll in First Six Years:		Number of Graduates Expected in First Six Years:	
Year One	15	Year One	0
Year Two	25	Year Two	10
Year Three	40	Year Three	20
Year Four	40	Year Four	30
Year Five	40	Year Five	35
Year Six	40	Year Six	35
Total	200	Total	130

Program Summary: The Bachelor of Science in Cyber Security and Operations is a focused undergraduate education program in cyber security. The program is designed to satisfy the requirements laid out by the Department of Defense for the Center of Academic Excellence in Cyber Operations program that was awarded to MSU in 2013, as well as the Center of Academic Excellence in Cyber Defense Education originally awarded to MSU in 2001 and most recently renewed in 2014. This would be to offer a full undergraduate degree option in cyber security and operations that would build on the current programs in computer science, software engineering, and computer engineering. Students in this program would be prepared to serve in the government or industry as cyber security engineers, either on the defensive side or operations side. These students would have the skills to move into these jobs with little or no additional training. Additionally, these students would be prepared to continue pursuit of a M.S. in computer science with a concentration in cyber security, or a M.S. in Cyber Security and Operations. MSU is one of only six schools in the country qualified to offer this degree with both defensive and offensive capability, and uniquely qualified in the southeast United States.

Institutional Executive Officer Signature	Date

Institution: Mississippi State University

1. Describe the proposed program and explain how it fits within the mission of the institution.

A primary mission of a land-grant institution is to educate the citizens of the state with skills to make them marketable and able to contribute to the economy of the state and the nation. The Bachelor of Science in Cyber Security is a program to educate workers for the cyber security workspace. MSU has a long tradition of leadership in cyber security as evidenced by our NSA Center of Academic Excellence (CAE) credentials. MSU has been designated a CAE for Cyber Defense Education since 2001, a CAE for Cyber Defense Research since 2008, and a CAE for Cyber Operations since 2013. If MSU wants to continue to lead in this critical area, then this degree program is essential to making that happen.

2. Provide the information used to determine Mississippi's need for this program. Be specific and provide supporting data (*supporting data must include employment statistics*).

Mississippi has long been a leader in providing cyber security talent for the national workforce. Survey conducted by HP in 2014 and ranked Mississippi State University at 3rd in the nation for providing cyber trained personnel. This leadership has been accomplished through an existing certificate program in Information Assurance. There is a national trend toward offering cyber security degrees. MSU has the expertise to create this program, as well as the desire to do so.

3. Provide information on employment (supporting data must include state and national employment statistics).

Mississippi, Alabama, and Louisiana:

a. Data provided by the Career Center at Mississippi State University showed over 100 vacancies announced in May 2016 related to cyber security in Mississippi, Alabama, and Louisiana. This data was retrieved from the Career Shift software used by the Career Center:

IT Specialist (INFOSEC) Department of the Army | Vicksburg, MS
Information Systems Security Engineer Integration Innovation, Inc. | Stennis Space Center, MS
Oceanographer/Physicist/Researcher Vencore | Stennis Space Center, MS
Information Assurance Engineer I GTI Federal | Jackson, MS
Vulnerability/Threat Specialist Senior Vencore | , MS
Systems Administrator Integration Innovation, Inc. | Vicksburg, MS
CNDSP Incident Analyst II Enlogica Solutions, LLC | Vicksburg, MS
Information Assurance Training (IAT), Level III Certified GTI Federal | Jackson, MS
HORNE Cyber Marketing Intern Horne LLP | Starkville, MS
Network Security / Information Assurance Engineer II GTI Federal | Jackson, MS
Splunk Engineer Apex Systems Inc | Stennis Space Center, MS
Entry-Level Computer Analyst/System Administration Simulation Technologies, Inc. | Huntsville, AL
Security Specialist - RDA Security Support Advantage SCI | , AL
Security Analyst PhishMe | Birmingham, AL
Info Security Analyst 4 Wells Fargo | Homewood, AL
Cyber Security Analyst Canvas Inc. | Huntsville, AL
Cyber Security Analyst Rocket City HR | Huntsville, AL
Cyber Security Analyst Job SAIC | Huntsville, AL
Cyber Security Analyst Teledyne Brown Engineering | Huntsville, AL
Cyber Security Engineer I COLSA | Huntsville, AL
Senior Cyber Engineer Radiance Technologies, Inc. | Huntsville, AL
Information Systems Security Manager (ISSM) Modern Technology Solutions, Inc. (MTSI) | Huntsville, AL
MDA Flight Test Cybersecurity Engineer Millennium Engineering and Integration Company | Huntsville, AL
Cyber Security Specialist - Mid (New Orleans) Capriccio Software, Inc. | New Orleans, LA
Security Leader – Water & HQ GE Power | New Orleans, LA
Information Security Incident Analyst GE Digital | New Orleans, LA
Quality Analyst 3 Northrop Grumman | Lake Charles, LA
IT Specialist Sr (Government) AT&T | New Orleans, LA
IT Specialist -Senior Techead | New Orleans, LA
Tier 2 Technical Support ASM Research | New Orleans, LA
Information Assurance/Cyber Security Lead Louisiana Economic Development | Bossier City, LA
Cyber Incident Responder (ITC 597) Louisiana Economic Development | Bossier City, LA

b. Data retrieved by the National Strategic Planning & Analysis Research Center (nSPARC) at MSU from the following database:

United States

Table 1: Employment and Job Openings for Cyber Security Occupations

Occupation	2014 Jobs	Median Hourly Earnings	Education Level	Job Openings (Last 3 Years)
Computer User Support Specialists	2,285	$19.66	Some college, no degree	273
Computer Systems Analysts	1,728	$30.99	Bachelor's degree	261
Network and Computer Systems Administrators	1,335	$32.26	Bachelor's degree	186
Software Developers, Applications	1,179	$43.25	Bachelor's degree	112
Computer and Information Systems Managers	1,168	$40.61	Bachelor's degree	282
Computer Programmers	981	$30.07	Bachelor's degree	124
Computer Network Architects	776	$36.16	Bachelor's degree	30
Computer Occupations, All Other	769	$33.95	Bachelor's degree	55
Software Developers, Systems Software	752	$40.57	Bachelor's degree	90
Computer Network Support Specialists	600	$22.75	Associate's degree	125
Computer Hardware Engineers	420	$43.28	Bachelor's degree	47
Database Administrators	368	$32.04	Bachelor's degree	108
Information Security Analysts	357	$31.10	Bachelor's degree	86
Web Developers	345	$25.72	Associate's degree	74
Computer and Information Research Scientists	213	$47.38	Doctoral degree	35
Total	**13,275**	**$32.22**	**--**	**1,888**

Sources: Bureau of Labor Statistics, 2015; Mississippi Works, 2015[1]

This data shows a salary range from approximately $41,000 for someone working in the field with no college degree to approximately $98,500 for someone graduating with a PhD. Research Engineers with M.S. degrees in Computer Science, the closest related field are offered salaries in the range of $60,000 to $80,000 per year. Additionally, our experience with the federal government is that B.S. graduates with credentials in the cyber security field are regularly offered salaries in Mississippi of approximately $55,000 starting immediately after graduation.

4. Describe the anticipated institutional impact including any research efforts associated with this program.

MSU has an existing, robust cyber security research program that has been in existence since 1998. University research in cyber security and operations is housed within the Distributed Analytics and Security Institute, a university level research enterprise. The addition of an undergraduate degree program in cyber security and operations will increase the need for cyber security faculty, resulting in increased research potential in cyber security.

5. Provide the total anticipated budget for the program. Indicate from where the funds will come. Include the anticipated annual cost of operation. Include start-up costs on the first year of operation with 5 subsequent years to equal 6 year cost of implementation as shown on page 1.

We anticipate no initial startup costs in the department. Existing faculty can absorb the initial load. We anticipate adding one faculty in each of Year 2 and Year 3. Salaries are set at standard starting rate and anticipate a 5% raise each year. Two additional faculty should be able to handle the additional course requirements, since most of the courses will be existing courses in existing curricula.

We anticipate that tuition revenue per student will offset the costs of the additional faculty once the new faculty are in place.

Year 1	2018-2019	No cost	$0.00
Year 2	2019-2020	1 new faculty Member @ $95,000 salary per academic year plus fringe of 36%. Estimated $120,000 Startup Package for new faculty. $70,000 for administrative and advising support.	$319,200
Year 3	2020-2021	1 existing faculty member @ $99,750; 1 new faculty member @ $95,000 plus fringe at 36%. Estimated $120,000 Startup Package for new faculty. $70,000 for administrative and advising support.	$574,860
Year 4	2021-2022	2 existing faculty members @ $104,738 and $99,750 plus fringe at 36%. $70,000 for administrative and advising support.	$348,104
Year 5	2022-2023	2 existing faculty members @ $109,975 and $104,738 plus fringe at 36%. $70,000 for administrative and advising support.	$362,010
Year 6	2023-2024	2 existing faculty members @ $115,433 and $109,975plus fringe at 36%.	$376,554

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[1] Mississippi Works data reflects a 3 year total.

		$70,000 for administrative and advising support.	
Total			$1,860,728

6.   Use a chart to show anticipated enrollment for the first five years of the program.

Yearly Enrollment

Cumulative Enrollment
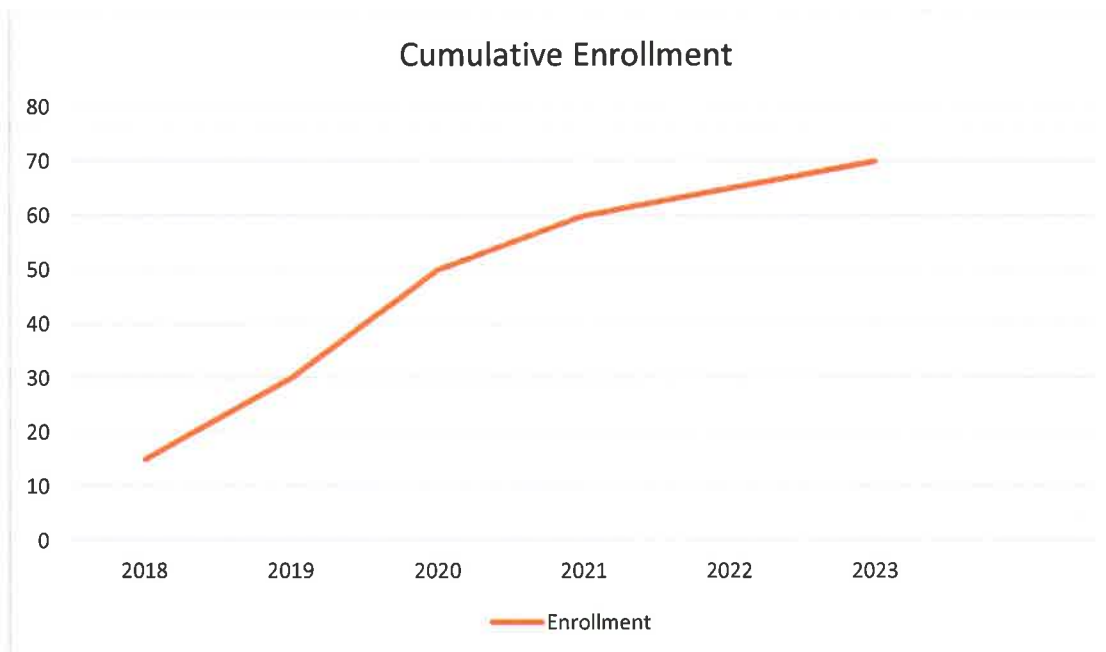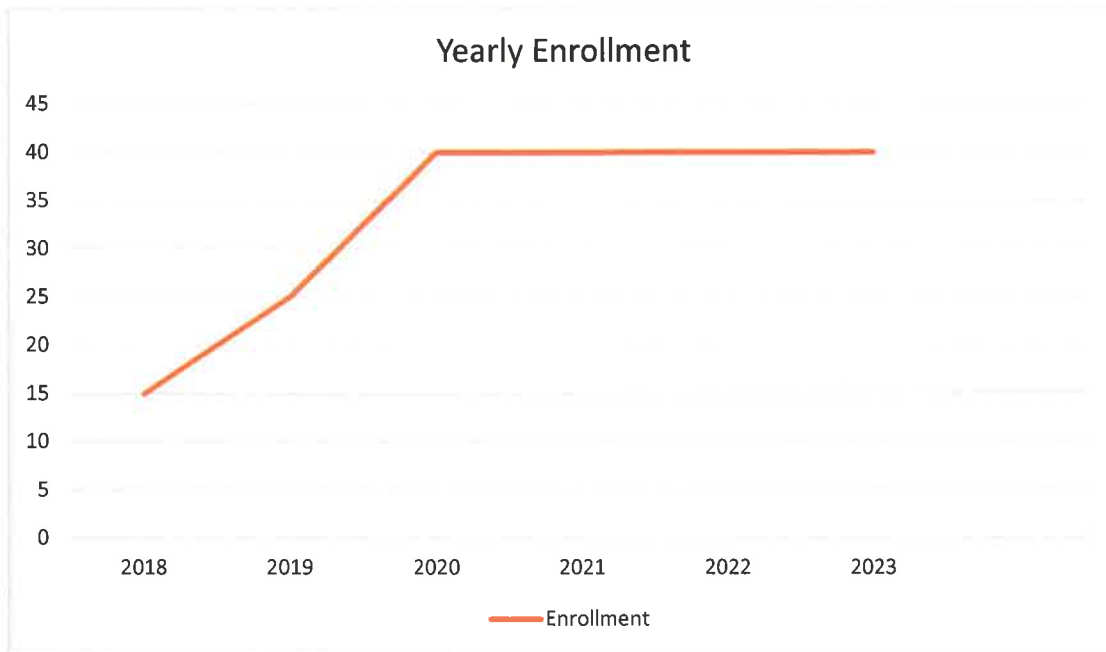
7. Indicate where the proposed program is offered within the state

There are no other similar offerings within the state of Mississippi, and no other universities have the credentials to offer this program.

    a.   Chart similarities and differences in the proposed program and those offered in other institutions

           Not applicable since there are no similar programs in the state.

    b.   Explain anticipated consequences on enrollment in other institutions offering the program, including any ramifications on the Ayers settlement

           None anticipated.

8. What is the specific basis for formulating the number of graduates expected in the first six years?

The U.S. cyber command, as well as the Army and Air Force are constantly asking us for graduates with these credentials, and our students are also asking about these degree options. Additionally, because of our national ranking, prospective students call at a very high rate asking about such a degree program.

Appendix 8: New Degree Program Proposal

Institution: Mississippi State University

Date of Implementation:	Six Year Cost of Implementation:	Per Student Cost of Implementation:
August 16, 2018	$1,860,728	$9,304

Program Title as will Appear on Academic Program Inventory, Diploma, and Transcript:	Six Digit CIP Code:
Bachelor of Science in Cyber Security and Operations	11.1003

Degree(s) to be Awarded:	Credit Hour Requirements:
Bachelor of Science	128

List any institutions within the state offering similar programs:

None

Responsible Academic Unit(s):	Institutional Contact:
Department of Computer Science and Engineering	Dr. David A. Dampier

Check one of the boxes below related to SACS COC Substantive Changes.

X	Proposed Program **is Not** a Substantive Change			Proposed Program **is** a Substantive Change

Number of Students Expected to Enroll in First Six Years:		Number of Graduates Expected in First Six Years:	
Year One	15	Year One	0
Year Two	25	Year Two	10
Year Three	40	Year Three	20
Year Four	40	Year Four	30
Year Five	40	Year Five	35
Year Six	40	Year Six	35
Total	200	Total	130

Program Summary: The Bachelor of Science in Cyber Security and Operations is a focused undergraduate education program in cyber security. The program is designed to satisfy the requirements laid out by the Department of Defense for the Center of Academic Excellence in Cyber Operations program that was awarded to MSU in 2013, as well as the Center of Academic Excellence in Cyber Defense Education originally awarded to MSU in 2001 and most recently renewed in 2014. This would be to offer a full undergraduate degree option in cyber security and operations that would build on the current programs in computer science, software engineering, and computer engineering. Students in this program would be prepared to serve in the government or industry as cyber security engineers, either on the defensive side or operations side. These students would have the skills to move into these jobs with little or no additional training. Additionally, these students would be prepared to continue pursuit of a M.S. in computer science with a concentration in cyber security, or a M.S. in Cyber Security and Operations. MSU is one of only six schools in the country qualified to offer this degree with both defensive and offensive capability, and uniquely qualified in the southeast United States.

Institutional Executive Officer Signature	**Date**

Institution:

1. Describe how the degree program will be administered including the name and title of person(s) who will be responsible for curriculum development and ongoing program review.

This program will be administered through the Department of Computer Science and Engineering by an Undergraduate Coordinator to be determined. The curriculum will be managed by an Undergraduate Studies Committee responsible for this degree program, and will be subject to annual review by both this committee, and the external advisory board. Accreditation will be sought through ABET, as soon as accreditation is available and the program has its first graduates.

- Describe the educational objectives of the degree program including the specific objectives of any concentrations, emphases, options, specializations, tracks, etc.

The educational objectives of this degree program are:

- The graduate will demonstrate an understanding of cyber security principles and an ability to solve unstructured cyber security problems through the successful entrance into and advancement as a cyber security professional in the government or industrial sectors.
- The graduate will demonstrate an understanding of relevant laws and policies relating to information, computer, and network security.
- 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.
- The graduate will demonstrate an understanding of professional and ethical responsibilities to the profession, society and the environment incumbent on a computer science professional.
- The graduate will successfully interact with others of different backgrounds, educations, and cultures.
- The graduate will demonstrate effective communication skills in their profession.

Cyber Defense Concentration

- The graduate will demonstrate the ability to develop enterprise policies appropriate to the level of the enterprise in accordance with applicable laws and policies.
- The graduate will demonstrate the ability to conduct risk assessments of cyber systems, and develop appropriate mitigation strategies to offset those risks.

Cyber Operations Concentration

- The graduate will demonstrate the ability to perform in an operational cyber environment against adversaries of varying capabilities.
- The graduate will demonstrate the ability to develop plans for cyber operations in an offensive or defensive posture.
- The graduate will demonstrate the ability to conduct penetration tests to assess a system's ability to withstand intrusions by known adversaries.

2. Describe any special admission requirements for the degree program including any articulation agreements that have been negotiated or planned.

No special admission requirements will be sought for this program.

3. Describe the professional accreditation that will be sought for this degree program. If a SACS visit for substantive change will be necessary, please note.

This degree program does not represent a substantive change from existing programs, as it does not differ from existing programs in computer science, computer engineering, and software engineering by a significant amount. Program accreditation standards are under development by the Accreditation Board for Engineering and Technology (ABET) and program accreditation will be sought as soon as those standards are available and accreditation is possible. Draft criteria for cyber security accreditation is:

- **Cyber Defense,** such as cryptography, data security, network security, information assurance.
- **Cyber Operations**, such as cyber attack, penetration testing, cyber intelligence, reverse engineering, cryptanalysis.
- **Digital Forensics,** such as hardware and software forensics, incident response, cybercrime, cyber law enforcement.
- **Cyber Physical Systems**, such as Supervisory Control and Data Acquisition (SCADA) systems, internet-of-things (IOT), industrial control systems.
- **Secure Software Development**, such as secure systems design, secure coding, deployability, maintainability, usability of secure information system.
- **Cyber Ethics**, such as ethical use of information systems, privacy and anonymity, intellectual property rights, professional responsibility, global societal impact of information systems.
- **Cyber Policy, Governance, and Law**, such as government and institutional cyber policy and practices, regulatory authorities for cyber systems and operations, cyber law.
- **Cyber Risk Management**, such as cyber resilience, mission assurance, disaster recover, business continuity, security evaluation, cyber economics.
- **Human Behavioral Relating to Cyber Systems and Operations,** such as social engineering, social networks, user experience, and organizational behavior.

4. Describe the curriculum for this degree program including the recommended course of study (appending course descriptions for all courses) and any special requirements such as clinical, field experience, community service, internships, practicum, a thesis, etc.

All students will be required to complete at least 128 hours of course work, including the full university core curriculum. One full year of mathematics and science will be required as well, according to ABET requirements. Additionally, an adequate preparation in computer science, computer engineering, and software engineering subjects will be required.

Requirements:

University Core

- English Composition (6 hours)
- Humanities (6 hours)
- Social Science (6 hours)
- Public Speaking (3 hours)
- Fine Arts (3 hours)
- Technical Writing (3 hours)
- Mathematics
  - MA 1713, 1723, 2733: Calculus I, II, and III (9 hours)
  - IE 4613: Engineering Statistics (3 hours)
  - CSE 2813: Discrete Structures (3 hours)
- Lab Science
  - Biology (4 hours)
  - Chemistry (4 hours)
  - Physics I & II (6 hours)

Engineering Core

- Computer Science, Electrical and Computer Engineering, and Business Information Systems
  - CSE 1002: Intro to CSE (2 hours)
  - CSE 1284 and 1384: Intro and Intermediate Programming (8 hours)
  - CSE 2383: Data Structures (3 hours)
  - CSE 3324: Distributed Client Server Programming (4 hours)
  - CSE 4153: Data Communications and Networks (3 hours)
  - CSE 4243: Info and Computer Security (3 hours)
  - CSE 4253: Secure Software Engineering (3 Hours) NEW
  - CSE 4273: Digital Forensics (3 hours)
  - CSE 4383: Network Security and Cryptography (3 hours)
  - CSE 4763: Cyber Law (3 hours) NEW
  - CSE 4733: Operating Systems I (3 hours)
  - ECE 3714: Digital Devices (4 hours)
  - ECE 3724: Microprocessors (4 hours)
  - Cyber Defense (CD) Concentration
    - BIS 4113: BIS Security (3 hours)
    - CSE 4503: Database Management Systems (3 hours)
  - Cyber Operations (CO) Concentration
    - CSE 4363: Software Reverse Engineering (3 hours)
    - CSE 4743: Operating Systems II (3 hours)
    - CSE 4753: Intro to Cyber Operations (3 hours) NEW
    - ECE 4723: Embedded Systems (3 hours)

Electives

- Mathematics Elective: Any upper division mathematics class (3 hours)
- Technical Elective: Any upper division CSE, ECE, or MA classes (12 hours for CD & 6 hours for CO)
- Free Electives: Any university classes (5 hours)

CSE	1002	Intro to CSE	Two hours lecture. Introduction to the computer science, cyber security and operations, and software engineering curricula, profession, and career opportunities. Historical perspective; support role of the department. Ethics, team building, problem solving.
CSE	1284	Intro Comp Prog	(Prerequisiste:MA 1313 or equivalent).Three hours lecture Three hours laboratory. Introductory problem solving and computer programming using object-oriented techniques. Theoretical and practical aspects of programming and problem solving. Designed for CS, CPE, CYSO and SE majors.

CSE	1384	Intermed Comp Prog	(Prerequisite: CSE 1284 with grade of C or better). Three hours lecture.Three hour laboratory. Object-oriented problem solving, design,and programming. Introduction to data structures, algorithm design and complexity. Second course in sequence designed for CS, CPE, CYSO and SE majors.
CSE	2383	Data Struc & Anal of Alg	(Prerequisite :Grade C or better in CSE 1384 and MA 1713). Three hours lecture. Non-linear data structures and their associated algorithms. Trees, graphs, hash tables, relational data model, file organization. Advanced software design and development.
CSE	2813	Discrete Structures	(Prerequisites:Grade of C or better in CSE 1284 and MA 1313 or equivalent). Three hours lecture. Concepts of algorithms, induction, recursion,proofs, topics from logic,set theory, combinatorics, graph theory fundamental to study of computer science.
CSE	3324	Dist Client/Server Prog	(Prerequisite: All majors: Grade of C or better in CSE 2383. CS/SE majors: CSE 4503 with a grade of C or better). Three hours lecture. Three hours laboratory. Design of software systems for distributed environments. Multithreaded and server-side programming, client/server.
CSE	4153	Data Comm Networks	(Prerequisites: Grade of C or better in CSE 1384 or ECE 3732, and ECE 3724 . Three hours lecture.The concepts and practices of data communications and networking to provide the student with an understanding of the hardware and software used for data communications. (Same as ECE 4833/6833).
CSE	4243	Info & Computer Security	(Prerequisite: Credit or registration in CS 4733/6733). Three hours lecture. Topics include encryption systems, network security, electronic commerce, systems threats, and risk avoidance procedures.
CSE	4253	Secure Software Engineering	(Prerequisite: Grade of C or better in CSE 3324). Three hours lecture. Principles, techniques, and practices involved in building security into software systems including security requirements analysis, secure design, secure coding and security testing, verification and risk management. Topics also include analysis and security assessment of legacy software systems.
CSE	4273	Intro to Computer Forensics	(Prerequisite: Senior standing in CSE/SE/CPE/MIS/CJ/CYSO) Three hours lecture. Introduction to computer crime and the study of evidence for solving computer-based crimes. Topics: computer crime, computer forensics and methods for handling evidence.
CSE	4363	Software Reverse Engineering	(Prerequisite: CSE 4733/6733). Three hours lecture. Software specification recovery and malicious software analysis. Tools and techniques for analyzing compiled programs and communications in the absence of documentation.
CSE	4383	Crypto & Network Secur	(Prerequisite: Credit or registration in CSE 4153/6153). Three hours lecture. Basic and advanced concepts in cryptography and network security: symmetric and asymmetric cryptography, key management, wired and wireless network security protocols, network systems security.
CSE	4503	Database Management Sys	(Prerequisites: CSE 2383 and CSE 2813, both with a grade of C or better). Three hours lecture. Modern database models; basic database management concepts; query languages; database design through normalization; advanced database models; extensive development experience in a team environment.
CSE	4733	Operating Systems I	(Prerequisites: Grade of C or better in CSE 2383 and ECE 3724).Three hours lecture. Historical development of operating systems to control complex computing systems; process management, communication, scheduling techniques; file systems concepts and operation; data communication, distributed process management.
CSE	4743	Operating Systems II	(Prerequisites: CSE 4733/6733 with grade of C or better). Three hours lecture. Integrated treatment of hardware and software concepts in operating systems design; procedure implementation; creation and control of processes; name and space management.
CSE	4753	Intro to Cyber Operations	(Prerequisites: Permission of Instructor). Three hours lecture. This course is designed to develop the students' knowledge of cyberspace operations concepts and methodologies. Graduates should be able to assist in the analysis, synthesis, and evaluation of management, engineering, and operational approaches to solve complex problems within cyberspace, defensive and offensive.
CSE	4763	Cyber Law	(Prerequisite: Permission of Instructor). Three hours lecture. A detailed discussion of laws, technology issues, business strategies, and policies relating to cyber security.

ECE	3714	Digital Devices	(Prerequisite: Credit or registration in CSE 1213, CSE 1233, or CSE 1284). Three hours lecture. Three hours laboratory. Binary codes, Boolean, algebra, combinational logic design, flip-flops, counters, synchronous sequential logic, programmable logic devices, MSI logic devices, adder circuits.
ECE	3724	Microprocessors	(Prerequisites: Grade of C or better in both CSE 2383 and ECE 3714). Three hour lecture. Three hour laboratory. Architecture of microprocessor-based systems. Study of microprocessor operation, assembly language, arithmetic operations, and interfacing.
ECE	4723	Embedded Systems	(Prerequisites: Grade of C or better in CSE 3324 and ECE 3724 and in either ECE 3424 or CSE 4153). Two hours lecture. Three hours laboratory. Advanced topics in embedded systems design using contemporary practice. Interrupt-driven, reactive, real-time, object-oriented, and distributed client/server embedded systems.
IE	4613	Eng Statistics I	(Prerequisite: MA 1723). Three hours lecture. Introduction to statistical analysis. Topics include: probability, probability distributions, data analysis, parameter estimation, statistical intervals, and statistical inferences.
MA	1713	Calculus I	(Prerequisite: ACT Math subscore 26, or grade of C or better in 1323 or 1453). Three hours lecture. Analytic geometry; functions; limits; continuity; derivatives of algebraic functions; applications of the derivative.
MA	1723	Calculus II	(Prerequisite: Grade of C or better in MA 1713). Three hours lecture. Antidifferentiation; the definite integral; applications of the definite integral; differentiation and integration of transcendental functions.
MA	2733	Calculus III	(Prerequisite: Grade of C or better in MA 1723). Three hours lecture. Further methods of integration; polar coordinates; vectors; infinite series.
BIS	4113	BIS Security	(Prerequisite: BIS 3233 or any 3 hours of computer-related coursework). Three hours lecture. Concepts, skills, tools and techniques involved in management of computer security as it applies to today's business environment.
BIO	1134	Biology I	Three hours lecture. Two hours laboratory. Principles of Biology including nature of science, chemistry of life, cell structure and division, cellular respiration, photosynthesis, Mendelian, chromosomal and molecular genetics, evolution, and ecology.
CH	1211	Chemistry I Lab	(Prerequisite: Prior credit or concurrent enrollment in CH 1213). Three hours laboratory. Selected experiments to illustrate fundamentals of chemistry. Accompanies CH 1213.
CH	1213	Chemistry I	(Prerequisities: ACT Math subscore 24 or grade of C or better in MA 1313) Three hours lecture. The principles of atomic and molecular structure, energetics, dynamics, and synthesis as related to chemical systems.
PH	2213	Physics I	(Prerequisite: Grade of C or better in MA 1713). Three hours lecture. Calculus-based course emphasizing Newtonian mechanics and conservation laws. Honors section available.
PH	2223	Physics II	(Prerequisites: PH 2213 and MA 1723). Two hours lecture, one hour recitation, two hours laboratory. Calculus-based introduction to gravitation, electricity and magnetism. Laboratory emphasizes concepts of force and motion, conservation laws, and simple electrical circuits. Honors section available.

5. Describe the faculty who will deliver this degree program including the members' names, ranks, disciplines, current workloads, and specific courses they will teach within the program. If it will be necessary to add faculty in order to begin the program, give the desired qualifications of the persons to be added.

   a. David A. Dampier, Professor of Computer Science and Engineering, Computer Science, Administrator: CSE 4753, CSE 4273

   b. John A. Hamilton, Professor of Computer Science and Engineering, Computer Science, Administrator: CSE 4243, CSE 4753

   c. Wesley McGrew, Adjunct Assistant Professor of Computer Science and Engineering, Computer Science, Part-Time Faculty: CSE 4243, CSE 4363

   d. Richard Anderson, Instructor of Computer Science and Engineering, Computer Science, Full Time Faculty: CSE 4243, 4273

e. Tanmay Bhowmik, Assistant Professor of Computer Science and Engineering, Computer Science, Full Time Faculty: CSE 4243, 4253, 4273

f. Joseph Crumpton, Assistant Clinical Professor of Computer Science and Engineering, Computer Science, Full Time Faculty: CSE 4243, 4253, 4273

g. Mahalingam Ramkumar, Associate Professor of Computer Science and Engineering, Computer Engineering, Full Time Faculty: CSE 4383

h. Byron Williams, Assistant Professor of Computer Science and Engineering, Computer Science, Full Time Faculty: CSE 4253

i. Maxwell Young, Assistant Professor of Computer Science and Engineering, Computer Science, Full Time Faculty: CSE 4153

j. Jerry Bruce, Associate Professor of Electrical and Computer Engineering, Computer Engineering, Full Time Faculty: ECE 4723

k. Kent Marett, Associate Professor of Management Information Systems, Information Systems, Full Time Faculty: BIS 4113

l. David Lee, Adjunct Assistant Professor of Computer Science and Engineering, Law, Part-Time Faculty: CSE 4763 (Cyber Law)

m. 2 Tenure-Track Assistant or Associate Professors of Computer Science and Engineering or Electrical and Computer Engineering, qualified to teach cyber security courses

Additional CSE Faculty that will teach Core CSE and Engineering classes required by this degree:

a. Christopher Archibald, Assistant Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

b. Ioana Banicescu, Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

c. Cindy Bethel, Associate Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

d. Eric Hansen, Associate Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

e. Lisa Henderson, Instructor of Computer Science and Engineering, Computer Science, Full Time Faculty

f. T.J. Jankun-Kelly, Associate Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

g. Sarah Lee, Assistant Clinical Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

h. Edward Luke, Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

i. Andy Perkins, Associate Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

j. Donna Reese, Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

k. J. Edward Swan, Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

l. Song Zhang, Associate Professor of Computer Science and Engineering, Computer Science, Full Time Faculty

6. Describe the library holdings relevant to the proposed program, noting strengths and weaknesses. If there are guidelines for the discipline, do current holdings meet or exceed standards?

The Mississippi State University Library holds subscriptions for hundreds of journals related to computer science, electrical and computer engineering, and business information systems. Among them, the following appear to be most relevant to the study of cyber security and operations:

- Annual Reviews in Control
- Big Data & Society
- Computers & Security
- Future Generations Computer Systems
- Journal of Computer & System Sciences
- Journal of Information Security and Applications
- International Journal of Critical Infrastructure Protection
- Network Security
- Industrial Management & Data Systems
- Information & Computer Security

Additionally, our library has subscriptions to IEEE Xplore and ACM Digital Library, both of which give us access to a world of journals and conference proceedings related to cyber security and operations. The library's holdings are more than sufficient to support research and study in this domain.

7. Describe the procedures for evaluation of the program and its effectiveness in the first six years of the program, including admission and retention rates, program outcome assessments, placement of graduates, changes in job market need/demand, ex-student/graduate surveys, or other procedures.

Graduates will be assessed through course assessments (exams, quizzes, homework, and laboratory assignments). Periodically, these assessments will be collected and reviewed by the undergraduate studies committee to determine the effectiveness of the teaching. Graduates will also be surveyed as to the strengths and weaknesses of the program. When available, accreditation through the ABET Computing Accrediting Commission will be sought, which will ensure that every six years the program will be assessed for quality. Additionally, the NSA/DHS Center of Academic Excellence program provides an external assessment of all cyber security programs every five years. MSU has been designated a CAE in Cyber Defense Education continuously since 2001, a CAE in Cyber Defense Research since 2008, and a CAE in Cyber Operations since 2013. These designations are aligned with specific degree programs, and require very specific academic criteria be met. Additionally, changes in the job market will be monitored for increases and decreases, but quite frankly, the education system as it is today is incapable of satisfying the job needs, so no decrease is anticipated into the medium future.

8. What is the specific basis for formulating the number of graduates expected in the first six years?

The U.S. cyber command, as well as the Army and Air Force are constantly asking us for graduates with these credentials, and our students are also asking about these degree options. It is estimated that 25% or so of existing computer science students will change to this major immediately upon its approval. Additionally, the number of inquiries asking about this program is increasing regularly, especially since MSU was ranked in the top 5 for cyber security education in the United States. These rankings were 3rd for all academic levels in 2014[1] and 5th for graduate cyber security education in 2016[2].

http://www.hp.com/hpinfo/newsroom/press_kits/2014/RSAConference2014/Ponemon_2014_Best_Schools_Report.pdf, downloaded August 11, 2015 at 10:50 AM.

https://www.universities.com/articles/10-best-grad-schools-cyber-security/, downloaded July 26, 2016 at 5:30 PM.

NEW DEGREE OUTLINE FORM

Use the chart below to indicate your new 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. Expand rows as needed.

PROPOSED New Degree	
Degree: Bachelor of Science Major: Cyber Security and Operations Concentrations: Cyber Defense/Cyber Operations	
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 Cyber Defense concentration will focus on those aspects of cyber security needed to prepare an enterprise level system to protect itself. Specific material will prepare the students for developing cyber security policies to comply with existing and future laws, conducting risk assessments in an enterprise to determine compliance with requirements, and implementing security solutions for the enterprise.	
Proposed Curriculum Outline	Required Hours
English (General Education): Technical Writing: Oral Communication:	6 3 3
Fine Arts (General Education):	3
Natural Sciences (2 labs required from Gen Ed): BIO 1134 CH 1213 CH 1211	 4 3 1
Extra Science (if appropriate) PH 2213 PH 2223	 3 3
Math (General Education): MA 1713 MA 1723 MA 2733 CSE 2813 IE 4613 Upper Division Mathematics Elective	 3 3 3 3 3 3
Humanities (General Education):	6
Social/Behavioral Sciences (Gen Ed):	6
Major Core Courses Introduction to CSE (CSE 1002) Introduction to Computer Programming (CSE 1284) Intermediate Computer Programming (CSE 1384) Data Structures and Analysis of Algorithms (CSE 2383) Distributed Client/Server Programming (CSE 3324) Data Communications and Networks (CSE 4153) Information and Computer Security (CSE 4243) Secure Software Engineering (CSE 4253) Computer Forensics and Cyber Crime (CSE 4273) Network Security and Cryptography (CSE 4383) Operating Systems I (CSE 4733)	 2 4 4 3 4 3 3 3 3 3 3

Cyber Law (CSE 4763)	3
Technical Electives (Any Upper Division MA, CSE, or ECE)	6
Cyber Defense Concentration Courses	
BIS Security (BIS 4113)	3
Database Management Systems (CSE 4503)	3
Technical Electives (Any Upper Division MA, CSE, or ECE)	6
Cyber Operations Concentration Courses	
Software Reverse Engineering (CSE 4363)	3
Operating Systems II (CSE 4743)	3
Introduction to Cyber Operations (CSE 4753)	3
Embedded Systems (ECE 4723)	3
Total Hours	128

2. CURRICULUM OUTLINE

Three new courses are proposed in this degree program and the appropriate paperwork is included in CIM for the new courses. They are:

- CSE 4253: Secure Software Engineering
- CSE 4753: Introduction to Cyber Operations
- CSE 4763: Cyber Law

3. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Basic Degree Learning Outcomes:

- Students will be prepared to serve in government or industry positions requiring expertise in cyber security, either offense or defense.
- Students will be prepared to understand relevant laws and policies relating to information, computer, and network security.
- Students will be prepared to evaluate security risks and/or vulnerabilities and formulate appropriate solutions to mitigate those risks/vulnerabilities.

Concentrations:

Cyber Defense:

- Students will be prepared to conduct detailed vulnerability assessments to determine risks for cyber attacks.
- Students will be prepared to develop enterprise policies appropriate to the level of the enterprise in accordance with applicable laws and policies.

Cyber Operations:

- Students will be prepared to operate in an operational cyber environment against adversaries of varying capabilities.
- Students will be prepared to develop plans for cyber operations in an offensive or defensive posture.
- Students will be prepared to conduct penetration tests to assess a system's ability to withstand intrusions by known adversaries.

Assessment Methods:

Throughout the curriculum, students will be expected to take examinations and quizzes, complete homework assignments, and do practical application assignments to prepare them for real-world problems. These methods of assessment will be identical to the methods of assessment for the current B.S. in Computer Science, Software Engineering, and Computer Engineering.

4. SUPPORT

A letter of support is provided from the Heads of the Department of Computer Science and Engineering, the

Department of Electrical and Computer Engineering, and the Department of Management and Information Systems as these are the departments with classes required in the engineering core of the curriculum.

5. PROPOSED 4-LETTER ABBREVIATION

CYSO

6. EFFECTIVE DATE

The desired effective date for this degree to be available is August 2018.

7. CIP NUMBER

11.1003

Department of Electrical and Computer Engineering, and the Department of Management and Information Systems as these are the departments with classes required in the engineering core of the curriculum.

5. PROPOSED 4-LETTER ABBREVIATION

CYSO

6. EFFECTIVE DATE

The desired effective date for this degree to be available is August 2018.

7. CIP NUMBER

11.1003

Mississippi State University
Bachelor of Science – Cyber Security and Operations (Cyber Operations)
Degree Requirements
Last Updated 2017

Freshman Year

Fall Semester		Spring Semester	
CSE 1002 Intro to CSE	2	CSE 1384 Intermed Programming	4
CSE 1284 Intro to Programming	4	MA 1723 Calculus II	3
EN 1103 English Comp I	3	EN 1113 English Comp II	3
CH 1213 Chemistry I	3	PH 2213 Physics I	3
CH 1211 Chemistry I Lab	1	CO 1003 Public Speaking	3
MA 1713 Calculus I	3		
	16		16

Sophomore Year

Fall Semester		Spring Semester	
CSE 2383 Data Struct & Anal of Alg	3	CSE 3324 Dist Client Server Prog	4
CSE 2813 Discrete Structures	3	ECE 3724 Microprocessors	4
ECE 3714 Digital Devices	4	CSE 4753 Intro to Cyber Operations	3
MA 2733 Calculus III	3	Fine Art Elective	3
PH 2223 Physics II	3	Humanities Elective	3
	16		17

Junior Year

Fall Semester		Spring Semester	
CSE 4733 Operating Systems I	3	CSE 4743 Operating Systems II	3
CSE 4243 Info and Comp Security	3	CSE 4153 Data Comm and Networks	3
BIO 1134 Biology I	4	IE 4613 Engineering Statistics I	3
Humanities Elective	3	Social Science Elective	3
Technical Elective	3	GE 3513 Technical Writing	3
	16		15

Senior Year

Fall Semester		Spring Semester	
ECE 4723 Embedded Systems	3	CSE 4363 Software Reverse Eng	3
CSE 4273 Computer Forensics	3	CSE 4383 Cryptography and Net Sec	3
CSE 4753 Cyber Law	3	Mathematics Elective	3
CSE 4253 Secure Software Eng	3	Social Science Elective	3
Technical Elective	3	Free Elective	5
	15		17

Mississippi State University
Bachelor of Science – Cyber Security and Operations (Cyber Operations)
Degree Requirements
Last Updated 2017

Communication Skills (12 Hours)
- English Composition 6
- Oral Communication (CO 1003) 3
- Technical Writing (GE 3513) 3

Fine Arts, Humanities, Social Studies (15 Hours)
- Fine Arts Elective 3
- Humanities Electives (2) 6
- Social Science Electives (2) 6

Natural Sciences (14 Hours)
- Biology (BIO 1134) 4
- Chemistry and lab (CH 1213/1211) 4
- Physics (PH 2213/2223) 6

Mathematics (18 Hours)
- Discrete Math (CSE 2813) 3
- Calculus (MA 1713/1723/2733) 9
- Upper Division Mathematics Elective 3
- Engineering Statistics (IE 4613) 3

Technical Electives (6 Hours)
- Electives (Any Upper Division Mathematics, CSE, or ECE class) 6

Computer Science and Engineering (47 Hours)
- Introduction to CSE (CSE 1002) 2
- Introduction to Computer Programming (CSE 1284) 4
- Intermediate Computer Programming (CSE 1384) 4
- Data Structures and Analysis of Algorithms (CSE 2383) 3
- Distributed Client/Server Programming (CSE 3324) 4
- Data Communications and Networks (CSE 4153) 3
- Information and Computer Security (CSE 4243) 3
- Secure Software Engineering (CSE 4253) 3
- Computer Forensics and Cyber Crime (CSE 4273) 3
- Software Reverse Engineering (CSE 4363) 3
- Network Security and Cryptography (CSE 4383) 3
- Operating Systems I (CSE 4733) 3
- Operating Systems II (CSE 4743) 3
- Introduction to Cyber Operations (CSE 4753) 3
- Cyber Law (CSE 4763) 3

Electrical and Computer Engineering (11 Hours)
- Digital Devices (ECE 3714) 4
- Microprocessors I (ECE 3724) 4
- Embedded Systems (ECE 4723) 3

Free Electives (5 Hours) 5

Total Hours 128

Mississippi State University
Bachelor of Science – Cyber Security and Operations (Cyber Defense)
Degree Requirements
Last Updated 2017

Freshman Year

Fall Semester			Spring Semester	
CSE 1002	Intro to CSE	2	CSE 1384 Intermed Programming	4
CSE 1284	Intro to Programming	4	MA 1723 Calculus II	3
EN 1103	English Comp I	3	EN 1113 English Comp II	3
CH 1213	Chemistry I	3	PH 2213 Physics I	3
CH 1211	Chemistry I Lab	1	CO 1003 Public Speaking	3
MA 1713	Calculus I	3		
		16		16

Sophomore Year

Fall Semester			Spring Semester	
CSE 2383	Data Struct & Anal of Alg	3	CSE 4503 Database Mng Sys	4
CSE 2813	Discrete Structures	3	ECE 3724 Microprocessors	4
ECE 3714	Digital Devices	4	BIS 4113 BIS Security	3
MA 2733	Calculus III	3	Fine Art Elective	3
PH 2223	Physics II	3	Humanities Elective	3
		16		17

Junior Year

Fall Semester			Spring Semester	
CSE 4733	Operating Systems I	3	CSE 4153 Data Comm and Networks	3
CSE 4243	Info and Comp Security	3	IE 4613 Engineering Statistics I	3
CSE 3324	Dist Client Server Prog	3	Technical Elective	3
BIO 1134	Biology I	4	Social Science Elective	3
Humanities Elective		3	GE 3513 Technical Writing	3
		16		15

Senior Year

Fall Semester			Spring Semester	
CSE 4253	Secure Software Eng	3	CSE 4383 Cryptography and Net Sec	3
CSE 4273	Computer Forensics	3	Technical Elective	3
CSE 4753	Cyber Law	3	Mathematics Elective	3
Technical Elective		3	Social Science Elective	3
Technical Elective		3	Free Elective	5
		15		17

Mississippi State University
Bachelor of Science – Cyber Security and Operations (Cyber Defense)
Degree Requirements
Last Updated 2017

Communication Skills (12 Hours)
- English Composition 6
- Oral Communication (CO 1003) 3
- Technical Writing (GE 3513) 3

Fine Arts, Humanities, Social Studies (15 Hours)
- Fine Arts Elective 3
- Humanities Electives (2) 6
- Social Science Electives (2) 6

Natural Sciences (14 Hours)
- Biology (BIO 1134) 4
- Chemistry and lab (CH 1213/1211) 4
- Physics (PH 2213/2223) 6

Mathematics (18 Hours)
- Discrete Math (CSE 2813) 3
- Calculus (MA 1713/1723/2733) 9
- Upper Division Mathematics Elective 3
- Engineering Statistics (IE 4613) 3

Technical Electives (12 Hours)
- Electives (Any Upper Division Mathematics, CSE, or ECE class) 12

Computer Science and Engineering (41 Hours)
- Introduction to CSE (CSE 1002) 2
- Introduction to Computer Programming (CSE 1284) 4
- Intermediate Computer Programming (CSE 1384) 4
- Data Structures and Analysis of Algorithms (CSE 2383) 3
- Distributed Client/Server Programming (CSE 3324) 4
- Data Communications and Networks (CSE 4153) 3
- Information and Computer Security (CSE 4243) 3
- Secure Software Engineering (CSE 4253) 3
- Computer Forensics and Cyber Crime (CSE 4273) 3
- Network Security and Cryptography (CSE 4383) 3
- Database Management Systems (CSE 4503) 3
- Operating Systems I (CSE 4733) 3
- Cyber Law (CSE 4763) 3

Electrical and Computer Engineering (8 Hours)
- Digital Devices (ECE 3714) 4
- Microprocessors I (ECE 3724) 4

Business Information Systems (3 Hours)
- BIS Security (BIS 4113) 3

Free Electives (5 Hours) 5

Total Hours 128

MISSISSIPPI STATE UNIVERSITY™
——— JAMES WORTH ———
BAGLEY
COLLEGE OF ENGINEERING

DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

Andy D. Perkins, Ph.D.
Associate Professor
perkins@cse.msstate.edu

December 6, 2016

University Committee on Courses and Curricula
PO Box 5268
Mississippi State, MS 39762

Dr. Franz:

This letter is provided to document the support of the Department of Computer Science and Engineering at Mississippi State University for the addition of a Bachelor's of Science degree in Cyber Security and Operations. The addition of this degree program to our existing offerings will require the creation of three additional undergraduate classes: CSE 4253 – Secure Software Engineering; CSE 4753 – Introduction to Cyber Operations; and CSE 4763 – Cyber Law. With the additional faculty resources included in the Appendix 8 application, the addition of these classes should not place an undue burden on the department's faculty. The department faculty voted unanimously to approve the application for the new degree program and the addition of the three classes in the faculty meeting held on December 2, 2016 with 16 faculty members voting.

This new degree program will add a valuable new dimension to the department's offerings and the new classes will be available not only for this new degree program, but also for students in the existing B.S. programs in Computer Science and Software Engineering.

Sincerely,

Andy D. Perkins, Ph.D.
CSE Courses and Curricula Chair
Associate Professor

Eric Hansen, Ph.D.
CSE Courses and Curricula Member
Associate Professor

Song Zhang, Ph.D.
CSE Courses and Curricula Member
Associate Professor

MISSISSIPPI STATE UNIVERSITY™
—————J A M E S W O R T H—————
B A G L E Y
COLLEGE OF ENGINEERING

DEPARTMENT OF
COMPUTER SCIENCE & ENGINEERING

Dr. Donna S. Reese
Department Head and Professor
dreese@cse.msstate.edu

December 11, 2016

To Whom It May Concern:

The Department of Computer Science and Engineering fully supports the attached proposal for the creation of a BS degree in Cybersecurity and Operations. Since 2001 the department has been recognized as a Center for Academic Excellence in Cyber Defense Education. In 2013 the department added the designation as a Center of Academic Excellence in Cyber Operations as well. These designations, along with the certificate programs in Information Assurance and Cyber Operations have aided the department in attracting high-quality students from throughout the country, particularly in the southeast region. The ability to provide a BS program specifically in this area will further enhance these opportunities.

The time is right for adding this degree program. Nationwide demand for students with these capabilities is high and projected to continue growing. In addition, our accrediting body, the Computing Accreditation Commission of ABET, is currently developing program criteria to allow for accreditation of these programs. It is expected that these criteria will be in place by the time we graduate our first students from this program. This gives Mississippi State the opportunity to be among the first programs to be accredited under these new criteria. The attached BS program proposal has been designed with these draft criteria in mind so that we will be poised to seek accreditation for this program as soon as it is available.

This program cannot be offered, however, without the appropriate resources. Faculty resources in the department are already stretched thin due to a doubling of enrollment at the undergraduate level in our CS and SE programs in the last 8 years. Student support resources (e.g., advising) are also at capacity in the department. The department will need the new resources described in the program proposal to be able to support this new degree program. Capacity does not exist in the department to manage this program without these additional resources.

Sincerely,

Dr. Donna Reese
Professor and Department Head

MISSISSIPPI STATE UNIVERSITY™
──── JAMES WORTH ────
BAGLEY
COLLEGE OF ENGINEERING

DEPARTMENT OF ELECTRICAL
& COMPUTER ENGINEERING

Nicolas H. Younan
Department Head and Professor
James Worth Bagley Chair
younan@ece.msstate.edu

November 30, 2016

To Whom It May Concern:

The Department of Computer Science and Engineering is in the process of submitting a request to add a B.S. degree in Cybersecurity and Operations. The Department of Electrical and Computer Engineering supports this proposal and can handle additional students in the required ECE courses. If additional information is needed, feel free to contact me.

Sincerely yours,

Nicolas H. Younan, Ph.D.
Department Head and Professor
James Worth Bagley Chair

December 1, 2016

David A. Dampier, Ph.D.
Professor of Computer Science and Engineering
Director, Distributed Analytics and Security Institute
HPC A129, Box 9627
Mississippi State, MS 39762

Dear Dr. Dampier:

Based on feedback from the information systems faculty in the Department of Management &
Information Systems, I am pleased to support your proposal to create a BS in Cyber Security and
Operations. We believe we could handle students from the Cyber Defense concentration of the
proposed degree program in the summer section of our BIS 4113 class (BIS Security
Management).

Sincerely,

James J. Chrisman, Ph.D.
Julia Bennett Rouse Professor of Management
Head, Department of Management & Information Systems
Director, Center of Family Enterprise Research
Mississippi State University
Mississippi State, MS 39762-9581
jchrisman@business.msstate.edu
Tel. 662-325-1991