



MISSISSIPPI STATE UNIVERSITYTM

UNIVERSITY COMMITTEE ON COURSES AND CURRICULA

A MEMORANDUM

DATE: August 26, 2019
TO: UCCC Members
FROM: Dr. Dana Pomykal Franz, Chair
SUBJECT: September 6, 2019 Meeting

Enclosed are the minutes from the meeting on April 25, 2019 and the agenda and proposals for the meeting on **Friday, September 6, 2019 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: April 25, 2019 Meeting Minutes
Course/Curriculum Proposal

AGENDA
UNIVERSITY COMMITTEE ON COURSES AND CURRICULA
September 6, 2019

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

ACADEMIC AFFAIRS

Addition	GRD 8300	International Thesis Research
Addition	GRD 9300	International Dissertation Research
Modification	PAS 8332	Seminar III for the Physician Assistant
Modification	PAS 8333	Internal Medicine Rotation for the Physician Assistant
Addition	PAS 8363	Elective Clinical Rotation for the Physician Assistant
Modification	PAS 8403	Preceptorship Rotation for the Physician Assistant

AGRICULTURE AND LIFE SCIENCES

Modification +Online/Distance	BCH 4113 /6113	Essentials of Molecular Genetics
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ARTS & SCIENCES

+Online/Distance	AN 4403	Introduction to Linguistics
Modification +Online/Distance	FL 8693	Advanced Foreign Language Pedagogy
Addition +Online/Distance	FL 8793	Foreign Language Planning, Instruction, and Assessment

ENGINEERING

Modification +Online/Distance	CHE 8113	Advanced Chemical Engineering Thermodynamics
Modification +Online/Distance	CHE 8123	Chemical Kinetics and Dynamics
Modification +Online/Distance	CHE 8523	Advanced Transport Phenomena
Addition +Distance +Gulf Coast	ME 4233	Fundamentals of FEA
+Online/Distance +Gulf Coast	ME 8313	Conductive Heat Transfer
+Online/Distance	ME 8513	Classical Thermodynamics

VETERINARY SCIENCE

Modification	CVM 8801	Seminars in Veterinary Anesthesiology
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- 4. Degree proposals by college/school**

ACADEMIC AFFAIRS

Modification	MPAS	Physician Assistant Studies
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AGRICULTURE AND LIFE SCIENCES

Modification	BS	Animal and Dairy Sciences
Addition	Certificate (Undergraduate)	Meat Science

ENGINEERING

Modification	BS	Biological Engineering
Modification	MS	Chemical Engineering
Modification	Ph.D.	Chemical Engineering
Modification	MS/Ph.D.	Computational Engineering

University Committee on Courses and Curricula
Mississippi State University
April 25, 2019

Members

Present: Amy Adkerson, Tracey Baham, Randy Campbell, Russell Carr, Cody Coyne, Amy Crumpton, Padmanava Dash, Dana Franz, Seamus Freyne, Kevin Hunt, Caroline Kobia, Tori Marshall, Qingmin Meng, Jes Miller, Rob Moore, Emily Owen, Tommy Parker, Andy Perkins, Tommy Phillips, Matthew Priddy, Wendy Roussin, Kathy Sherman-Morris, Brad Trinkle, Jenny Turner, Erica Waldman, Jeff Winger, Chien Yu, Matthew Zimmerman

Proxy: Bob Wolverton for Pat Matthes

Excused: Charles Freeman, Trey Howell, Darrell Sparks, Marian Swindell, Erica Waldman, Robert Wolverton

Guests: Machaunda Bush, Brian Counterman, Alireza Ermagun, Kylie Forsythe, Amelia Fox, Stacy Jackson, Carla Jagger, Juyoung Lee, Trey Martindale, Jeanie McNeel, Lynda Moore, Bindu Nanduri, Ashley Perry, Emily Shaw, Beca Spencer, Lesley Strawderman, Beth Stokes, Tamra Swann, John Usher, Joe Wilmoth, John Wyatt

Franz called the meeting to order at 9:00 a.m. on Thursday, April 25, 2019 in the Trotter Room of the Center for Advanced Vehicular Systems in the Research Park. Franz welcomed Jes Miller, the new representative from the undergraduate Student Government. Franz thanked Charles Freeman, Erica Waldman, Seamus Freyne, and Tori Marshall for their service since it was their last UCCC meeting.

Crumpton moved to approve the minutes from the March 22, 2019 UCCC meeting. Roussin seconded the motion. The motion to approve the March 22, 2019 minutes was approved unanimously.

Phillips moved to approve the addition of CMB 8011 Graduate Seminar and CMB 8013 Applied Computational Biology. Roussin seconded the motion. The motion to approve CMB 8011 and CMB 8013 was approved unanimously.

Phillips moved to approve the Authorization to Plan and a New Degree Proposal for the Ph.D. in Computational Biology, the Authorization to Plan and a New Degree Proposal for the MS in Computational Biology, and the addition of a Graduate Minor in Computational Biology. Priddy seconded the motion. Committee members discussed if this program is redundant due to a similar concentration in the College of Veterinary Medicine. Committee members pointed out that the new degrees are for students who want a computational emphasis and will be interdisciplinary. For the Ph.D. in Computational Biology proposal, the subcommittee that reviewed the proposal was concerned that in the preliminary examination portion it is unclear if the student will be graded on the written, oral or both parts of the preliminary examination and what constitutes a passing preliminary examination. For

the MS in Computational Biology proposal, in the thesis track new degree proposal curriculum section it refers to the “PhD degree in Computational Biology” instead of the “MS degree in Computational Biology.” The subcommittee had no concerns regarding the Graduate Minor in Computational Biology. Carr moved to pass the Ph.D., MS, and Graduate Minor proposals contingent upon the above concerns being addressed. Trinkle seconded the motion. The motion to pass the proposals contingent was approved unanimously.

Phillips moved to approve the modification of DSS 0113 Money Math: Practical Money Skills, the addition of online/distance education to DSS 0113, and the Meridian designation to DSS 0113; the addition of DSS 0133 Money Math: Money Management, the addition of online/distance education to DSS 0133, and the Meridian designation to DSS 0133; the addition of DSS 0153 Money Math: Financial Literacy, the addition of online/distance education to DSS 0153, and the Meridian designation to DSS 0153; the modification of DSS 0713 Basic Employment: Career Exploration, the addition of online/distance education to DSS 0713, and the Meridian designation to DSS 0713; and the addition of DSS 0733 Basic Employment: Maintaining Employment, the addition of online/distance education to DSS 0733, and the Meridian designation to DSS 0733. Priddy seconded the motion. The subcommittee that reviewed the proposals recommended approval. The motion to approve was approved unanimously.

Carr moved to approve the addition of ADS 8133 Endocrine Secretions. Hunt seconded the motion. The subcommittee that reviewed the proposal was concerned the cross listing with PHY 8133 was not included in the catalog description; the support letters only included the signature of the graduate coordinator and not the members of the curriculum committee; there is no information in the syllabus about how the participation grade will be determined; there is no attendance policy; and the heading for the Disability Statement needs to be bolded, so it stands out. Roussin moved to pass the addition of ADS 8133 contingent upon the above concerns being addressed. Crumpton seconded the motion. The motion to pass contingent was approved unanimously.

Phillips moved to approve the addition of online/distance education to MKT 3323 International Logistics. Crumpton seconded the motion. The subcommittee that reviewed the proposal was concerned a letter of support for the addition of distance education signed by the department curriculum committee members was not attached to the proposal. The letters of support that are attached are for previous revisions to the course. Roussin moved to pass the motion to approve the addition of online/distance education to MKT 3323 contingent upon the above concerns being addressed. Crumpton seconded the motion. The motion to pass the addition of online/distance education to MKT 3323 contingent was approved unanimously.

Phillips moved to approve the modification of the BBA in Marketing. Roussin seconded the motion. The motion to approve the modification of the BBA in Marketing was approved unanimously.

Winger moved to approve the modifications and addition of online/distance education to ADS 8423 Meat Science and FNH 8423 Meat Science. Roussin seconded the motion. The subcommittee that reviewed the proposal felt the information on the proposal about how distance students set up meetings with the faculty members should have also been included in the syllabus, and the letters of support do not contain the signatures of the curriculum committee members. Carr moved to pass the modification and addition of online/distance education of ADS 8423 and FNH 8423 contingent upon the

above concerns being addressed. Crumpton seconded the motion. The motion to pass contingent was approved unanimously.

Carr moved to approve the modification and addition of online/distance education to ADS 8463 Advanced Animal Nutrition. Crumpton seconded the motion. The subcommittee that reviewed the proposal was concerned the letter of support does not contain the signatures from the curriculum committee members, there is no information about how the quizzes and exams will be proctored, there is not a policy for how students with excused absences will make up missed quizzes or exams, the distance question about “. . . the differences in the face to face and the online versions of the course . . .” needs to be answered more thoroughly, and the Disability Statement heading in the syllabus need to be bolded. Roussin moved to pass the modification and addition of online/distance education to ADS 8463 contingent upon the above concerns being addressed. Perkins seconded the motion. The motion to pass contingent was approved unanimously.

Winger moved to approve the addition of AELC 4723/6723 Pedagogy of AgriScience Programs. Carr seconded the motion. The subcommittee that reviewed the proposal indicated the first line at the top of the syllabus is not necessary, and the heading General Class Information with the sentence under it needs to be removed because it appears to be part of a syllabus template. Roussin moved to approve the addition of AELC 4723/6723 contingent upon the above concerns being addressed. Crumpton seconded the motion. The motion to pass the addition of AELC 4723/6723 contingent was approved unanimously.

Winger moved to approve the modification of FDM 2553 Introduction to Merchandising, the modification of FDM 3553 Merchandise Retail Pricing and Inventory Management, the addition of online/distance education to FDM 4513/6513 Fashion Consumer Behavior, and the modification of FDM 4693/6693 Digital Merchandising. Dr. Juyoung Lee appeared in support of the proposals. The subcommittee that reviewed the proposals did not have any questions or concerns about FDM 2553 and FDM 3553. For FDM 4513, the subcommittee that reviewed the proposal was concerned that it is not clear whether the research paper is required for Campus 1 and Campus 5 students. It is also not clear if pop quizzes will be part of the Campus 5 assignments, and excused absences under AOP 12.09 need to be explained or referenced under the late assignments section of the syllabus. For FDM 4693, the syllabus indicates the graduate students will have the same criteria and points, but the point breakdown indicates the graduate students will not participate in the group projects but will instead conduct case problems. Therefore the statement the graduate students have the same criteria and points should be clarified or removed. Under assignments, it indicates no late assignments are accepted but does not explain how excused absences affect that policy or reference AOP 12.09. Carr moved to pass the proposals for FDM 2553, FDM 3553, FDM 4513/6513, and FDM 4693/6693 contingent upon the above concerns being addressed. Roussin seconded the motion. The motion to pass contingent was approved unanimously.

Winger moved to approve the addition of the Undergraduate Certificate in Retail. Roussin seconded the motion. The subcommittee that reviewed the proposal recommended approval but pointed out the contingencies for FDM 2553, FDM 3553, FDM 4513/6513, and FDM 4693/6693 need to be cleared before the Certificate can be approved. Crumpton moved to pass the addition of the Undergraduate Certificate in Retail contingent upon the FDM courses passing the contingencies. Perkins seconded the motion. The motion to pass contingent was approved unanimously.

Campbell moved to approve the modification of GA 1111 Survey of Agriculture. Roussin seconded the motion. The subcommittee that reviewed the proposal was concerned that there is a weekly schedule for 15 weeks (with the final scheduled during the 14th week), but the schedule indicates classes will not meet two of the weeks. Therefore, there are only 13 contact hours. Crumpton moved to pass the modification of GA 1111 contingent upon the above concern being addressed. Perkins seconded the motion. The motion to pass GA 1111 contingent was approved unanimously.

Carr moved to approve the addition of online/distance education to HDFS 4843/6843 Family Interaction and HDFS 4853/6853 The Family: A Human Ecological Perspective. For HDFS 4843/6843, the subcommittee that reviewed the proposals was concerned that a missed exam for an excused absence counts as a drop grade which is not consistent with the university policy, there is no definition of what constitutes an excused absence or reference to AOP 12.09, the method of evaluation total is 430 points instead of the 425 points listed, and the method of evaluation total affects the graduate grading section. For HDFS 4853/6853, the syllabus indicates that the syllabus review is worth 5 points extra credit, but then syllabus review is listed under student evaluation as 5 points and is added to the total points. So if the 5 points are really extra credit, they should be removed from the calculation of the possible points. Roussin moved to pass the addition of online/distance education to HDFS 4843/6843 and HDFS 4853/6853 contingent upon the above concerns being addressed. Perkins seconded the motion. The motion to pass HDFS 4843/6843 and HDFS 4853/6853 contingent was approved unanimously.

Campbell moved to approve the additions of PSS 4733/6733 Ag. Flight Technologies I and PSS 4743/6743 Ag. Flight Technologies II. Crumpton seconded the motion. For PSS 4733/6733, the subcommittee that reviewed the proposals was concerned that the contact hours total on page 5 of the syllabus should be 60 instead of 45, and while the syllabus mentions unexcused absences, there is not a link to AOP 12.09. For PSS 4743/6743, the syllabus mentions unexcused absences, but there is not a link to AOP 12.09. Roussin moved to pass the additions of PSS 4733/6733 and PSS 4743/6743 contingent upon the above concerns being addressed. Crumpton seconded the motion. The motion to pass PSS 4733/6733 and PSS 4743/6743 contingent was approved unanimously.

Carr moved to approve the addition of online/distance education to ART 1013 Art History I, ART 1023 Art History II, and ART 3633 History of Photography. Perkins seconded the motion. For ART 1013, the subcommittee that reviewed the proposals was concerned that the grading is confusing due to the color coding. The Online Dialogue Sessions are listed as 50% and the syllabus indicates there will be five topics throughout the term, but then the syllabus also lists critical connections blog 10%, lab assignments 20%, and midterm 20% as part of the Online Dialogue Sessions. For ART 1023 and ART 3633, the course requirements are also confusing due to the color coding. Campbell moved to pass the addition of online/distance education to ART 1013, ART 1023, and ART 3633 contingent upon the above concerns being addressed. Trinkle seconded the motion. The motion to pass contingent was approved unanimously.

Carr moved to approve the addition of ID 4683 Lesson from the Theatre: Architectural Lighting Design. Roussin seconded the motion. The subcommittee that reviewed the proposal recommended approval. The motion to approve was approved unanimously.

Carr moved to approve the addition of online/distance education to AN 1103 Introduction to Anthropology. Perkins seconded the motion. The motion to approve was approved unanimously.

Carr moved to approve the modification of AN 4313/6313 Human Osteology. Perkins seconded the motion. The motion to approve was approved unanimously.

Carr moved to approve the modification of CRM 3033 Criminology Internship. Perkins seconded the motion. Committee members were concerned the letter of support is a proxy letter or placeholder, and there is not a letter of support signed by the department committee curriculum committee. Roussin moved to pass CRM 3033 contingent upon the above concern being addressed. Crumpton seconded the motion. The motion to pass the modification of CRM 3033 contingent was approved unanimously.

Roussin moved to approve the modification of EPY 8214 Intermediate Educational and Psychological Statistics and EPY 9213 Multivariate Analysis in Educational Research. The subcommittee that reviewed the proposals indicated the attendance policy should address missed exams/quizzes due to excused absences and suggested the initiators add that information. The motion to approve the modification of EPY 8214 and EPY 9213 was approved unanimously.

Priddy moved to approve the modifications of INDT 1203 Industrial Drafting & Print Reading, INDT 1814 Basic Industrial Electricity and Electronics, INDT 2113 Introduction to PLC Programming, INDT 2123 Introduction to CNC Programming, INDT 2323 Welding Technology, INDT 2613 Industrial Fluid Power, INDT 3044 Industrial Safety, INDT 3063 Industrial Human Relations, INDT 3104 Advanced Industrial Electricity and Electronics, INDT 3223 Industrial Materials, INDT 3243 Industrial Metrology, INDT 3343 3D Modeling for Manufacture, INDT 3363 Motion and Time Study, INDT 3373 Forecasting and Cost Modeling, INDT 3683 CNC Machining Processes, INDT 3813 Writing for Industry, INDT 4103 Industrial Control Systems, INDT 4203/6203 Automated Systems, INDT 4213 Survey of Energy Sources and Power Technology, INDT 4224/6224 Quality Assurance, INDT 4233/6233 Maintenance Management, INDT 4263/6263 Manufacturing Technology and Processing, INDT 4303/6303 Industrial Robotics, INDT 4343 Computer Aided Drafting and Design, INDT 4373 Lean Six Sigma, INDT 4403 Automated Systems II, INDT 4463 Manufacturing Technology & Processes II, INDT 4801 Senior Seminar, and the program modifications to the BS in Industrial Technology (Campus 1) and the BS in Industrial Technology (Campus 5). Roussin seconded the motion. The subcommittee that reviewed the proposals noted that in all of the course syllabi, the excused absence provision is not in compliance with AOP 12.09, it is not clear if the PowerPoint lectures posted for Campus 5 also include audio/video of the instructor, for the courses that require boots and different clothing for lab there needs to be more specific requirements listed in the syllabi, under the Industrial Distribution Concentration courses "TKI Electives" are still listed instead of "INDT Electives," and the questions at the end of the program proposals beginning with "Will this program change or meet local, state, regional, and national educational and cultural needs . . ." should be answered more completely. Crumpton moved to pass the course and program proposals contingent upon the above concerns being addressed. Perkins seconded the motion. The motion to pass continent was approved unanimously.

Roussin moved to approve the addition of ASE 4353/6353 Combustion Theory and Modeling, the addition of online/distance education to ASE 4353/6353, the Gulf Coast designation for ASE 4353/6353, and the addition of online/distance education to ASE 4163/6163 Introduction to Flight Test Engineering. For ASE 4353/6353, the subcommittee that reviewed the proposal was concerned that the syllabus provides if an exam is missed for an excused absence, the student must inform the faculty member before the absence but that is not always possible and in conflict with AOP 12.09, there needs to be more information about how to find a proctor included in the syllabus, and under the exam section the

statement that missed tests due to excused absences are not made up but are the average of the other tests is in conflict with university policy. For ASE 4163/6163, under “Course Policies: Attendance, Lateness” attendance is addressed, but there is no discussion of lateness. Crumpton moved to pass the proposals for ASE 4353/6353 and ASE 4163/6163 contingent upon the above concerns being addressed. Perkins seconded the motion. The motion to pass contingent was approved unanimously.

Roussin moved to approve the addition of CE 4173/6173 Travel Behavior Modeling and Forecasting and the addition of online/distance education to CE 4173/6173. Trinkle seconded the motion. The subcommittee that reviewed the proposal were concerned on page 3 of the syllabus, the sentence concerning course videos is confusing and should probably be “Online students will have access to course videos . . .” Coyne moved to pass the addition of CE 4173/6173 contingent upon the above concern being addressed. Priddy seconded the motion. The motion to pass contingent was approved unanimously.

Roussin moved to approve the addition of online/distance education to EM 2413 Engineering Mechanics I, EM 2433 Engineering Mechanics II, EM 3213 Mechanics of Materials, and EM 3313 Fluid Mechanics. Trinkle seconded the motion. The subcommittee that reviewed the proposals recommended approval. The motion to approve was approved unanimously.

Roussin moved to approve the addition of IE 1313 Lean Works Systems, the addition of online/distance education to IE 1313, the Gulf Coast designation for IE 1313, the addition of IE 4914 Industrial Systems Design, and the Gulf Coast designation for IE 4914. Trinkle seconded the motion. The subcommittee that reviewed the proposal recommended approval. The motion to approve was approved unanimously.

Roussin moved to approve the addition of IE 4933/6933 Information System in Industrial Engineering, the addition of online/distance education to IE 4933/6933, and the Gulf Coast designation for IE 4933/6933. Trinkle seconded the motion. Dr. John Usher appeared in support of the proposal. The subcommittee that reviewed the proposal was concerned the proposal justification refers to a prerequisite, but there is not a prerequisite included in the catalog description; in the syllabus, the sentence concerning course videos is confusing and should probably be “Online students will have **access** to course videos . . . ;” the syllabus outlines that for a student to pass the class, the student “must complete the final Excel assignment with 80% of the code working as required and the student must submit the final Access assignment with 80% of the required functionality.” Priddy moved to pass the proposals for IE 4933/6933 contingent upon the above concerns being addressed. Crumpton seconded the motion. The motion to pass contingent was approved unanimously.

Roussin moved to approve the modification of the BS in Industrial Engineering. Priddy seconded the motion. The subcommittee that reviewed the proposal recommended approval, but since the proposal for IE 4933/6933 was passed contingent, that contingency must be cleared since the new course is included in the program proposal. Crumpton moved to pass the modification of the BS in Industrial Engineering contingent upon the above concern being addressed. Perkins seconded the motion. The motion to pass contingent was approved unanimously.

Roussin moved to approve the addition of online/distance education to GE 6513 Engineering Writing and Presenting, the addition of GE 8303 Introduction to Military Engineering, and the addition of online/distance education to GE 8303 Introduction to Military Engineering. Trinkle seconded the

motion. The subcommittee that reviewed the proposals was concerned in the syllabus for GE 6513 there is a provision that failure to complete any of these assignments will mean an automatic failing grade for the course, the grade appeal provision in the syllabus needs to be consistent with university policy, the contact hours need to be included in the revised syllabus, and the Disability Statement needs to include the official university wording. For GE 8303, the subcommittee was concerned the assignments are graded in points, but the grading scale is listed as percentages which may be confusing to students, the Disability Statement need to include the official university wording, and the statement about course videos should probably be "Online students will have access to course videos." Perkins moved to pass the proposals for GE 6513 and GE 8303 contingent upon the above concerns being addressed. Phillips seconded the motion. The motion to pass contingent was approved unanimously.

Roussin moved to approve the modification of the Ph.D. in Biological Engineering. Trinkle seconded the motion. The subcommittee that reviewed the proposal was concerned the graduate level coursework does not specify if the coursework must be in particular departments. The subcommittee recommended the words "with approval of committee" be added. Priddy moved to pass the modification of the Ph.D. in Biological Engineering contingent upon the above concern being addressed. Crumpton seconded the motion. The motion to pass contingent was approved unanimously.

Moore moved to approve the modification and addition of online/distance education to SBP 1103 Introduction to Sustainable Bioproducts, the modification of SBP 2123 Materials and Processing of Structural Bioproducts, the modification of SBP 4123/6123 Lumber Manufacturing, the modification and addition of online/distance education to SBP 4013/6013 Wood Anatomy, the modification of SBP 4263/6263 Furniture Design and Fabrication, the addition of online/distance education to SBP 4313/6313 Bioproducts and the Environment, the modification and addition of online/distance education to 4353/6353 Forest Products Marketing, the modification of SBP 8111 Research Seminar I, the modification of SBP 8121 Research Seminar II, the modification of SBP 8123 Advanced Lignocellulosic Biomass Chemistry, the modification and addition of online/distance education to SBP 8133 Environmental Issues in Sustainable Bioproducts, and the modification of SBP 8213 Advanced Wood Mechanics. Roussin seconded the motion. The subcommittee that reviewed the proposals had the following concerns: for SBP 1103, the grades for Discussion and In Class Activities need to be separated, it is not clear how Campus 1 and Campus 5 Discussion and In Class Activities are graded, it is not clear if additional measures are taken for distance exams, and the distance completion time frame is not specified; for SBP 2123, in Assignments, there should be an exception for University approved excuses, grades should be separated out for Discussion and In Class Activities, and the exams and term project need to be explained further; for SBP 4123/6123, there does not appear to be a sufficient number of contact hours for a 2 hours lecture/3 hours lab, and the statement concerning missed exams needs to be clarified; for SBP 4013/6013, there does not appear to be a sufficient number of contact hours for a 2 hours lecture/3 hours lab, the reporting of grades for Campus 5 students should be via "Canvas" instead of "Campus," the "Wild Card" discussion is not clear, if an exam grade is dropped the total is not 100, there needs to be more specification on graduate student assignment requirements, and it is not clear if Campus 5 students need an audience for their reports; for SBP 4263/6263, the catalog description in the syllabus does not match the catalog description on the proposal; for SBP 4313/6313, the attendance policy needs to be explained further, the requirements for graduate students in Campus 5 need to be specified, the syllabus needs to specify how the discussion boards are graded, and in Assignments approved University excuses need to be included; for SBP 4353/6353, there

needs to be more specification on graduate student assignment requirements, there needs to be more information about how distance students attend class, and the grades between Attendance and Participation need to be separated and specified; for SBP 8111, the method of delivery was changed from "Seminar" to "Lecture" but the course title includes the word "Seminar," and in Assignments approved University excuses information needs to be included; for SBP 8121, the method of delivery was changed from "Seminar" to "Lecture" but the course title includes the word "Seminar" and the first page of the syllabus calls it a seminar, it is not clear if SBP 8111 is a prerequisite to this course, in the Method of Evaluation on the syllabus it states attendance will be graded but attendance is not included in the points totals, and the RCR training requirement is listed on the syllabus as a prerequisite but since the training does not have to be completed until the middle of the semester, it is more of a course requirement; for SBP 8123, the catalog description ends in the middle of a sentence, and the excused absence policy needs to be in compliance with AOP 12.09; for SBP 8133, there needs to be an explanation of how discussions are graded and if the discussions for Campus 1 and Campus 5 are different; for SBP 8213, there does not appear to be a sufficient number of contact hours for a 2 hours lecture/3 hours lab and there need to be approximate dates assigned to the problem assignments, the quizzes, lab reports mid-term exam, final exam, and project. Crumpton moved to pass the proposals contingent upon the above concerns being addressed. Roussin seconded the motion. The motion to pass contingent was approved unanimously.

Hunt moved to adjourn. Crumpton seconded the motion. The motion to adjourn was approved unanimously. The meeting was adjourned at 11:55 a.m., and committee members attended the UCCC luncheon in the same room.

APPROVAL FORM FOR
DEGREE PROGRAMS
MISSISSIPPI STATE UNIVERSITY

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

College: Academic Affairs Department: Physician Assistant Studies

Contact Person: Debra Munsell Mail Stop:

E-mail: dmunsell@meridian.msstate.edu

Nature of Change: modification Date Initiated: Summer 2019 Effective Date: Spring 2020

Current Degree Program Name: Master of Physician Assistant Studies

Major: n/a Concentration: n/a

New Degree Program Name: n/a Major: n/a Concentration: n/a

Summary of Proposed Changes: These changes apply to the Master of Physician Assistant Studies Program.

- Modified PAS 8305 Internal Medicine Rotation for the Physician Assistant to PAS 8333 Internal Medicine Rotation for the Physician Assistant
- Modified PAS 8325 Preceptorship for the Physician Assistant to PAS 8403 Preceptorship for the Physician Assistant
- Modified PAS 8331 Seminar III for the Physician Assistant to PAS 8332 Seminar III for the Physician Assistant
- Add PAS 8363 Elective Rotation for the Physician Assistant

Total number of program credits will remain at 108.

Approved:

Date:



7/15/2019

Department Head

Chair, College or School Curriculum Committee


Dean of College or School

7/15/2019

Chair, University Committee on Courses and Curricula

Chair, Graduate Council (if applicable)

Chair, Deans Council

1. CATALOG DESCRIPTION

No changes to the catalog description

2. CURRICULUM OUTLINE

GRADUATE DEGREE MODIFICATION OUTLINE FORM

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

CURRENT Degree Description		PROPOSED Degree Description	
Degree: Master of Physician Assistant Studies Major: n/a Concentrations: n/a		Degree: Master of Physician Assistant Studies Major: n/a Concentrations: n/a	
The Master of Physician Assistant Studies Degree prepares graduates for the practice of medicine as a physician assistant. PAs are medical professionals who diagnose illness, develop and manage treatment plans, prescribe medications, and often serve as a patient's principal healthcare provider. With thousands of hours of medical training, PAs are versatile and collaborative. PAs practice in every state and in every medical setting and specialty, improving healthcare access and quality. The program focuses on training general medical practitioners primarily for service in rural healthcare. Physician assistants (PAs) are nationally certified and state-licensed medical professionals who provide healthcare in collaboration with physicians. The program is designed to meet the Standards of the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA).		The Master of Physician Assistant Studies Degree prepares graduates for the practice of medicine as a physician assistant. PAs are medical professionals who diagnose illness, develop and manage treatment plans, prescribe medications, and often serve as a patient's principal healthcare provider. With thousands of hours of medical training, PAs are versatile and collaborative. PAs practice in every state and in every medical setting and specialty, improving healthcare access and quality. The program focuses on training general medical practitioners primarily for service in rural healthcare. Physician assistants (PAs) are nationally certified and state-licensed medical professionals who provide healthcare in collaboration with physicians. The program is designed to meet the Standards of the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA).	
n/a		n/a	
CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
College Required Courses:		College Required Courses:	
PAS 6016 Human Anatomy and Physiology for the Physician Assistant	6	PAS 6016 Human Anatomy and Physiology for the Physician Assistant	6
PAS 6013 Introduction to the Physician Assistant Profession	3	PAS 6013 Introduction to the Physician Assistant Profession	3
PAS 6026 Patient Assessment for the Physician Assistant	6	PAS 6026 Patient Assessment for the Physician Assistant	6
PAS 6023 Clinical Diagnostic Methods for the Physician Assistant	3	PAS 6023 Clinical Diagnostic Methods for the Physician Assistant	3
PAS 6012 The Art of Medicine for the Physician Assistant	2	PAS 6012 The Art of Medicine for the Physician Assistant	2
PAS 6022 Clinical Genetics for the Physician Assistant	2	PAS 6022 Clinical Genetics for the Physician Assistant	2
PAS 6017 Clinical Medicine I for the Physician Assistant	7	PAS 6017 Clinical Medicine I for the Physician Assistant	7
PAS 6102 Clinical Skills for the Physician		PAS 6102 Clinical Skills for the Physician	

Assistant	2	Assistant	2
PAS 6103 Clinical Decision Making for the Physician Assistant	3	PAS 6103 Clinical Decision Making for the Physician Assistant	3
PAS 6113 Health Promotion and Disease Prevention for the Physician Assistant	3	PAS 6113 Health Promotion and Disease Prevention for the Physician Assistant	3
PAS 6104 Pathophysiology for the Physician Assistant	4	PAS 6104 Pathophysiology for the Physician Assistant	4
PAS 6112 Research Methods I for the Physician Assistant	2	PAS 6112 Research Methods I for the Physician Assistant	2
PAS 6208 Clinical Medicine II for the Physician Assistant	8	PAS 6208 Clinical Medicine II for the Physician Assistant	8
PAS 6204 Principles of Pharmacology for the Physician Assistant	4	PAS 6204 Principles of Pharmacology for the Physician Assistant	4
PAS 6203 Clinical Practice Issues for the Physician Assistant	3	PAS 6203 Clinical Practice Issues for the Physician Assistant	3
PAS 6213 Behavioral Medicine for the Physician Assistant	3	PAS 6213 Behavioral Medicine for the Physician Assistant	3
PAS 6223 Clinical Specialties for the Physician Assistant	3	PAS 6223 Clinical Specialties for the Physician Assistant	3
PAS 6202 Research Methods II for the Physician Assistant	2	PAS 6202 Research Methods II for the Physician Assistant	2
PAS 8302 Clinical Transitions for the Physician Assistant	2	PAS 8302 Clinical Transitions for the Physician Assistant	2
PAS 8308 Family Medicine Rotation for the Physician Assistant	8	PAS 8308 Family Medicine Rotation for the Physician Assistant	8
<i>PAS 8305 Internal Medicine Rotation for the Physician Assistant</i>	5	PAS 8333 Internal Medicine Rotation for the Physician Assistant	3
PAS 8303 Pediatric Medicine Rotation for the Physician Assistant	3	PAS 8303 Pediatric Medicine Rotation for the Physician Assistant	3
PAS 8313 Women's Health Rotation for the Physician Assistant	3	PAS 8313 Women's Health Rotation for the Physician Assistant	3
PAS 8323 General Surgery Rotation for the Physician Assistant	3	PAS 8323 General Surgery Rotation for the Physician Assistant	3
PAS 8343 Behavioral Medicine Rotation for the Physician Assistant	3	PAS 8343 Behavioral Medicine Rotation for the Physician Assistant	3
PAS 8353 Emergency Medicine Rotation for the Physician Assistant	3	PAS 8353 Emergency Medicine Rotation for the Physician Assistant	3
<i>PAS 8325 Preceptorship Rotation for the Physician Assistant</i>	5	PAS 8403 Preceptorship Rotation for the Physician Assistant	3
PAS 8312 The Summative Experience for the Physician Assistant	2	PAS 8312 The Summative Experience for the Physician Assistant	2
PAS 8322 The Capstone Project for the Physician Assistant	2	PAS 8322 The Capstone Project for the Physician Assistant	2
PAS 8301 Seminar I for the Physician Assistant	1	PAS 8301 Seminar I for the Physician Assistant	1
PAS 8321 Seminar II for the Physician Assistant	1	PAS 8321 Seminar II for the Physician Assistant	1
<i>PAS 8331 Seminar III for the Physician Assistant</i>	1	PAS 8332 Seminar III for the Physician Assistant	2
		New Course	
		PAS 8363 Elective Rotation for the Physician Assistant	3

Major Required Courses n/a		Major Required Courses n/a	
Concentration 1. Courses n/a		Concentration 1. Courses n/a	
Concentration 2. Courses n/a		Concentration 2. Courses n/a	
Total Hours	108	Total Hours	108

3. JUSTIFICATION AND STUDENT LEARNING OUTCOMES

The program is requesting three (3) minor course modifications and the addition of one (1) course in the clinical phase of the program. The modifications requested will allow the program to offer students an additional clinical rotation experience. The modifications have been structured to allow the program to maintain the program length (24 months) and the overall program credit hours (108).

The PA Program Curriculum Committee reviewed clinical phase course offerings of physician assistant (PA) programs in the region (Mississippi, Louisiana, Arkansas, Alabama, Georgia and Florida). Many of the PA programs in this region offer two (2) or more elective clinical rotations. The Committee recommended the proposed modifications/addition to the faculty. The faculty voted unanimously to proceed with the modifications. Additional clinical rotations will allow our students to be competitive with graduates from other regional and national PA programs.

STUDENT LEARNING OUTCOMES

The three (3) modifications requested and the addition of one (1) clinical rotation will not affect the overall program learning outcomes.

The modifications in the program meet the Standards of the Accreditation Review Commission on Education for the Physician (ARC-PA), the accreditation body for PA education programs.

Additional questions:

1. Will this program change meet local, state, regional and national educational and cultural needs?
 - a. These program modifications allow our graduates to experience additional subspecialty medical care, thus enabling them to provide a wider range of clinical care to all patients. The program modifications are aligned with the Standards set forth by the Accreditation Review Commission on Education for the Physician (ARC-PA).
2. Will this program change result in duplication in the System?
 - a. The modified program does not duplicate other programs on the MSU campus.
3. Will this program change advance student diversity within the discipline?
 - a. The modified program curriculum will be more attractive to interested applicants, making the MSU-MPAS program more competitive with other regional and national PA programs. This enhancement should increase the program's ability to attract and recruit a more diverse population of applicants.
4. Will this program change result in an increase in potential placement of graduates in MS, the Southeast, and the US?
 - a. The modifications to the program will increase the marketability and placement of the graduates locally and nationally.
5. Will this program change result in an increase in the potential salaries of graduate in MS, the Southeast, and the US?
 - a. The program modifications will allow students additional clinical experiences in subspecialty areas. Physician assistants practicing in subspecialty areas of medicine often have higher salaries than those who practice in general medicine.

4. SUPPORT

(Attached)

Head of Campus-Meridian, Dr. Terry Dale Cruse, provides a letter of support.

5. PROPOSED 4-LETTER ABBREVIATION

MPAS (no change)

6. EFFECTIVE DATE Spring 2020

7. CONTACT PERSON Debra S. Munsell DHSc, PA-C, DFAAPA

601-696-2345

dmunsell@meridian.msstate.edu



MISSISSIPPI STATE UNIVERSITYTM

MERIDIAN

Physician Assistant Studies

To: UCCC

From: Debra Munsell DHSc, PA-C, DFAAPA

Cc: Dr. David Shaw, Provost and Executive Vice President
Dr. Peter Ryan, Associate Provost for Academic Affairs

Date: July 17, 2019

Re: Master of Physician Assistant Studies Program Curriculum Changes

The Program Director and faculty of the Mississippi State University Physician Assistant Program are in full support of the proposed changes to the curriculum as submitted. The three (3) modifications requested and the addition of one (1) clinical rotation will not affect the overall program learning outcomes.

The PA Program Curriculum Committee reviewed clinical phase course offerings of physician assistant (PA) programs in the region (Mississippi, Louisiana, Arkansas, Alabama, Georgia and Florida). Many of the PA programs in this region offer two (2) or more elective clinical rotations. The Committee recommended the proposed modifications/addition to the faculty. The faculty voted unanimously to proceed with the modifications. Additional clinical rotations will allow our students to be competitive with graduates from other regional and national PA programs.

The modifications in the program meet the Standards of the Accreditation Review Commission on Education for the Physician (ARC-PA), the accreditation body for PA education programs. These program modifications allow our graduates to experience additional subspecialty medical care, thus enabling them to provide a wider range of clinical care to all patients. The modified program does not duplicate other programs on the MSU campus.

The modified program curriculum will be more attractive to interested applicants, making the MSU-MPAS program more competitive with other regional and national PA programs. This enhancement should increase the program's ability to attract and recruit a more diverse population of applicants. The modifications to the program will increase the marketability and placement of the graduates locally and nationally. The program modifications will allow students additional clinical experiences in subspecialty areas. Physician assistants practicing in subspecialty areas of medicine often have higher salaries than those who practice in general medicine.

We respectfully request approval by the UCCC.

APPROVAL FORM FOR
DEGREE PROGRAMS
MISSISSIPPI STATE UNIVERSITY

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

College: CALS

Department: Animal & Dairy Sciences

Contact Person: Jessica M. Graves **Mail Stop:** 9815 **E-mail:** jessica.graves@msstate.edu

Nature of Change: Degree Modification **Date Initiated:** 3-15-19 **Effective Date:** ~~Fall 2019~~

Spring 2020
jmb

Current Degree Program Name: Bachelor of Science

Major: Animal & Dairy Sciences

Concentration: Pre-Vet/Science

Production Management

Business & Industry

New Degree Program Name: Bachelor of Science

Major: Animal & Dairy Sciences

Concentration: Pre-Vet/Science

Production Management

Business & Industry

Pre-Vet Med Tech

Summary of Proposed Changes:

- Change concentration title from "Science/Veterinary Science" to "Pre-Vet/Science"
- Include "Pre-Vet Med Tech" concentration
- Remove PSS Elective from ADS major core course list and distribute those 3 hours as appropriate to each concentration

Approved:

Date:



Department Head

18 March 2019



Chair, College or School Curriculum Committee

3.22.19



Dean of College or School

7/31/19

Chair, University Committee on Courses and Curricula

Chair, Graduate Council(if applicable)

Chair, Deans Council

Degree Modification Proposal

1. CATALOG DESCRIPTION

See changes below

2. CURRICULUM OUTLINE

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

CURRENT Degree Description		PROPOSED Degree Description	
Degree: Bachelor of Science Major: Animal and Dairy Sciences Concentration: Pre-Vet/Science, Business and Industry, or Production Management.		Degree: Bachelor of Science Major: Animal and Dairy Sciences Concentration: Pre-Vet/Science, Business and Industry, Production Management, or Pre-Vet Med Tech .	
<p>Animal and Dairy Sciences is a multidisciplinary science that focuses on livestock and companion animal growth, health and safety, as well as food and fiber production. Professionals in the diverse fields of animal and dairy sciences strive to provide healthy and wholesome food as well as quality fiber products to support the growing population. Students in Animal and Dairy Sciences will learn about the newest technologies and experience progressive management strategies that will prepare them to be leaders in agriculture.</p> <p>Joining the Animal and Dairy Sciences will give students hands-on education and experience needed to be successful in areas such as breeding, feeding and nutrition, growth and development, reproductive and lactational physiology, biotechnology, marketing, management, and evaluation as it relates to livestock species. The curriculum is designed to provide students with academic and experiential learning while also allowing them flexibility to tailor their program by taking courses that best prepares and supports their professional goals. Students of the Animal and Dairy Sciences will be challenged to think critically and exercise knowledge of discipline content through scientific writing and presentation. Students pursuing veterinary medicine or graduate studies will find the academic setting of the Animal and Dairy Sciences is an ideal fit.</p> <p>Concentrations: Pre-Vet/Science Business and Industry Production Management</p>		<p>Animal and Dairy Sciences is a multidisciplinary science that focuses on livestock and companion animal growth, health and safety, as well as food and fiber production. Professionals in the diverse fields of animal and dairy sciences strive to provide healthy and wholesome food as well as quality fiber products to support the growing population. Students in Animal and Dairy Sciences will learn about the newest technologies and experience progressive management strategies that will prepare them to be leaders in agriculture.</p> <p>Joining the Animal and Dairy Sciences will give students hands-on education and experience needed to be successful in areas such as breeding, feeding and nutrition, growth and development, reproductive and lactational physiology, biotechnology, marketing, management, and evaluation as it relates to livestock species. The curriculum is designed to provide students with academic and experiential learning while also allowing them flexibility to tailor their program by taking courses that best prepares and supports their professional goals. Students of the Animal and Dairy Sciences will be challenged to think critically and exercise knowledge of discipline content through scientific writing and presentation. Students pursuing veterinary medicine or graduate studies will find the academic setting of the Animal and Dairy Sciences is an ideal fit.</p> <p>Concentrations: Pre-Vet/Science Business and Industry Production Management Pre-Vet Med Tech</p>	
CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
English: EN 1103 English Comp I OR EN 1163 Accelerated English Comp I EN 1113 English Comp II OR EN 1173 Accelerated English Comp II	6	English: EN 1103 English Comp I OR EN 1163 Accelerated English Comp I EN 1113 English Comp II OR EN 1173 Accelerated English Comp II	6
Fine Arts (General Education): Any Gen Ed course	3	Fine Arts (General Education): Any Gen Ed course	3
Natural Sciences See Concentration Requirements	9	Natural Sciences See Concentration Requirement	9

Math (General Education): MA 1323 Trigonometry OR MA 1713 Calculus ST 2113 Statistics	6	Math (General Education): MA 1323 Trigonometry OR MA 1713 Calculus ST 2113 Statistics	6
Humanities (General Education): Any Gen Ed course	6	Humanities (General Education): Any Gen Ed course	6
Social/Behavioral Sciences (Gen Ed): AEC 2713 or EC 2113 or EC 2123 <u>AND</u> Any Gen Ed course	6	Social/Behavioral Sciences (Gen Ed): AEC 2713 or EC 2113 or EC 2123 <u>AND</u> Any Gen Ed course	6
Major Core Courses	39	Major Core Courses	36
ADS 1111 Orientation to Animal Science	1	ADS 1111 Orientation to Animal Science	1
ADS 2111 Animal Science Career Planning	1	ADS 2111 Animal Science Career Planning	1
ADS 1113 Animal Science	3	ADS 1113 Animal Science	3
ADS 1121 Animal Science Laboratory	1	ADS 1121 Animal Science Laboratory	1
ADS 3014 Anatomy and Physiology	4	ADS 3014 Anatomy and Physiology	4
PO 3103 Genetics I	3	PO 3103 Genetics I	3
ADS 3314 Introduction to Meat Science	4	ADS 3314 Introduction to Meat Science	4
ADS 4114 Animal Nutrition	4	ADS 4114 Animal Nutrition	4
ADS 4213 Feeds & Feeding	3	ADS 4213 Feeds & Feeding	3
ADS 4124 Animal Breeding	4	ADS 4124 Animal Breeding	4
ADS 4613 Physiology of Reproduction	3	ADS 4613 Physiology of Reproduction	3
ADS 4611 Practices in Physiology of Reproduction	1	ADS 4611 Practices in Physiology of Reproduction	1
<i>Plant and Soil Sciences Elective</i>	3	Experiential Learning	3
Experiential Learning	3	ADS 4420 Animal and Dairy Science Internship OR	
ADS 4420 Animal and Dairy Science Internship OR		ADS 4440 Research Experience Practicum OR	
ADS 4440 Research Experience Practicum OR		ADS 4520 Livestock Extension Experience	
ADS 4520 Livestock Extension Experience		ADS 4221 Capstone in Animal and Dairy Sciences	1
ADS 4221 Capstone in Animal and Dairy Sciences	1		
Concentration Courses Pre-Vet/Science	58	Concentration Courses Pre-Vet/Science	61
Chemistry Sequence		Chemistry Sequence	
CH 1211 Investigations in Chemistry I &	1	CH 1211 Investigations in Chemistry I &	1
CH 1213 Chemistry I &	3	CH 1213 Chemistry I &	3
CH 1221 Investigations in Chemistry II &	1	CH 1221 Investigations in Chemistry II &	1
CH 1223 Chemistry II	3	CH 1223 Chemistry II	3
Organic Chemistry & Lab	4	Organic Chemistry & Lab	4
Choose one of the following:		Choose one of the following:	
CH 2503 Elementary Organic Chemistry &		CH 2503 Elementary Organic Chemistry &	
CH 2501 Elementary Organic Chemistry Lab <u>OR</u>		CH 2501 Elementary Organic Chemistry Lab <u>OR</u>	
CH 4513 Organic Chemistry I &		CH 4513 Organic Chemistry I &	
CH 4511 Organic Chemistry Lab I		CH 4511 Organic Chemistry Lab I	
Biology		Biology	
BIO 3304 General Microbiology	4	BIO 3304 General Microbiology	4
BIO 1134 Biology I	4	BIO 1134 Biology I	4
BIO 1144 Biology II	4	BIO 1144 Biology II	4
Biochemistry		Biochemistry	
BCH 4013 Principles of Biochemistry	3	BCH 4013 Principles of Biochemistry	3

<u>OR</u> BCH 4603 General Biochemistry CO 1003 Fundamentals of Public Speaking <u>OR</u> CO 1013 Introduction to Communication Evaluation & Management Elective Production Electives Science Electives Free Electives See academic advisor for list of approved elective courses.	3 2 8 12 6	<u>OR</u> BCH 4603 General Biochemistry CO 1003 Fundamentals of Public Speaking <u>OR</u> CO 1013 Introduction to Communication Evaluation & Management Elective Production Electives Science Electives Free Electives See academic advisor for list of approved elective courses.	3 2 8 12 9
Total Hours	124	Total Hours	124
Concentration Courses Business and Industry Inorganic Chemistry Sequence Choose one of the following: CH 1043 Survey of Chemistry I & CH 1053 Survey of Chemistry II & CH 1051 Experimental Chemistry <u>OR</u> CH 1211 Investigations in Chemistry I & CH 1213 Chemistry I & CH 1221 Investigations in Chemistry II & CH 1223 Chemistry II Organic Chemistry & Lab Choose one of the following: CH 2503 Elementary Organic Chemistry & CH 2501 Elementary Organic Chemistry Lab <u>OR</u> CH 4513 Organic Chemistry I & CH 4511 Organic Chemistry Lab I Biology BIO 1134 Biology I <u>OR</u> BIO 1144 Biology II Evaluation & Management Electives Production Electives Business Electives General Ag Electives Free Electives See academic advisor for list of approved elective courses. Writing Requirement: Satisfied by the successful completion of ADS 1113, ADS 2111, ADS 4213, ADS 4613, ADS 4221, and ONE of: ADS 2102, ADS 2122, ADS 3213, ADS 4212, ADS 4420, ADS 4440, ADS 4520 or ADS 4623. Oral Communication Requirement: Satisfied by the successful completion of ADS	58 7 4 4 4 8 12 12 7	Concentration Courses Business and Industry Inorganic Chemistry Sequence Choose one of the following: CH 1043 Survey of Chemistry I & CH 1053 Survey of Chemistry II & CH 1051 Experimental Chemistry <u>OR</u> CH 1211 Investigations in Chemistry I & CH 1213 Chemistry I & CH 1221 Investigations in Chemistry II & CH 1223 Chemistry II Organic Chemistry & Lab Choose one of the following: CH 2503 Elementary Organic Chemistry & CH 2501 Elementary Organic Chemistry Lab <u>OR</u> CH 4513 Organic Chemistry I & CH 4511 Organic Chemistry Lab I Biology BIO 1134 Biology I <u>OR</u> BIO 1144 Biology II Evaluation & Management Electives Production Electives Business Electives General Ag Electives Free Electives See academic advisor for list of approved elective courses. Writing Requirement: Satisfied by the successful completion of ADS 1113, ADS 2111, ADS 4213, ADS 4613, ADS 4221, and ONE of: ADS 2102, ADS 2122, ADS 3213, ADS 4212, ADS 4420, ADS 4440, ADS 4520 or ADS 4623. Oral Communication Requirement: Satisfied by the successful completion of ADS 4613,	61 7 4 4 4 8 12 15 7

4613, ADS 4221 and TWO of the following: ADS 2102, ADS 2122, ADS 2223, ADS 3812, ADS 4212, ADS 4412, ADS 4420, ADS 4440, ADS 4520, ADS 4623, or ADS 4813.		ADS 4221 and TWO of the following: ADS 2102, ADS 2122, ADS 2223, ADS 3812, ADS 4212, ADS 4412, ADS 4420, ADS 4440, ADS 4520, ADS 4623, or ADS 4813.	
Computer Literacy Requirement: Satisfied by the successful completion of ADS 3312, ADS 4420, ADS 4440, ADS 4520, ADS 4813, or ADS 4523.		Computer Literacy Requirement: Satisfied by the successful completion of ADS 3312, ADS 4420, ADS 4440, ADS 4520, ADS 4813, or ADS 4523.	
Total Hours	124	Total Hours	124
Concentration Courses Production Management	58	Concentration Courses Production Management	61
Inorganic Chemistry Sequence Choose one of the following: CH 1043 Survey of Chemistry I & CH 1053 Survey of Chemistry II & CH 1051 Experimental Chemistry <u>OR</u> CH 1211 Investigations in Chemistry I & CH 1213 Chemistry I & CH 1221 Investigations in Chemistry II & CH 1223 Chemistry II	7	Inorganic Chemistry Sequence Choose one of the following: CH 1043 Survey of Chemistry I & CH 1053 Survey of Chemistry II & CH 1051 Experimental Chemistry <u>OR</u> CH 1211 Investigations in Chemistry I & CH 1213 Chemistry I & CH 1221 Investigations in Chemistry II & CH 1223 Chemistry II	7
Organic Chemistry & Lab Choose one of the following: CH 2503 Elementary Organic Chemistry & CH 2501 Elementary Organic Chemistry Lab <u>OR</u> CH 4513 Organic Chemistry I & CH 4511 Organic Chemistry Lab I	4	Organic Chemistry & Lab Choose one of the following: CH 2503 Elementary Organic Chemistry & CH 2501 Elementary Organic Chemistry Lab <u>OR</u> CH 4513 Organic Chemistry I & CH 4511 Organic Chemistry Lab I	4
Biology BIO 1134 Biology I <u>OR</u> BIO 1144 Biology II		Biology BIO 1134 Biology I <u>OR</u> BIO 1144 Biology II	
		PSS 4103 Forage & Pasture Crops	3
Evaluation & Management Electives	4	Evaluation & Management Electives	4
Production Electives	16	Production Electives	16
Business Electives	6	Business Electives	6
General Ag Electives	12	General Ag Electives	12
Free Electives	5	Free Electives	5
See academic advisor for list of approved elective courses.		See academic advisor for list of approved elective courses.	
Writing Requirement: Satisfied by the successful completion of ADS 1113, ADS 2111, ADS 4213, ADS 4613, ADS 4221, and ONE of: ADS 2102, ADS 2122, ADS 3213, ADS 4212, ADS 4420, ADS 4440, ADS 4520 or ADS 4623.		Writing Requirement: Satisfied by the successful completion of ADS 1113, ADS 2111, ADS 4213, ADS 4613, ADS 4221, and ONE of: ADS 2102, ADS 2122, ADS 3213, ADS 4212, ADS 4420, ADS 4440, ADS 4520 or ADS 4623.	
Oral Communication Requirement: Satisfied by the successful completion of ADS 4613, ADS 4221 and TWO of the following: ADS 2102, ADS 2122, ADS 2223, ADS 3812, ADS 4212, ADS 4412, ADS 4420, ADS 4440, ADS 4520, ADS 4623, or ADS 4813.		Oral Communication Requirement: Satisfied by the successful completion of ADS 4613, ADS 4221 and TWO of the following: ADS 2102, ADS 2122, ADS 2223, ADS 3812, ADS 4212, ADS 4412, ADS 4420, ADS 4440, ADS 4520, ADS 4623, or ADS 4813.	

Computer Literacy Requirement: Satisfied by the successful completion of ADS 3312, ADS 4420, ADS 4440, ADS 4520, ADS 4813, or ADS 4523.		Computer Literacy Requirement: Satisfied by the successful completion of ADS 3312, ADS 4420, ADS 4440, ADS 4520, ADS 4813, or ADS 4523.	
		Concentration Courses Pre-Vet Med Tech	61
		Inorganic Chemistry Sequence Choose one of the following: CH 1043 Survey of Chemistry I & CH 1053 Survey of Chemistry II & CH 1051 Experimental Chemistry <u>OR</u> CH 1211 Investigations in Chemistry I & CH 1213 Chemistry I & CH 1221 Investigations in Chemistry II & CH 1223 Chemistry II	7
		Organic Chemistry & Lab Choose one of the following: CH 2503 Elementary Organic Chemistry & CH 2501 Elementary Organic Chemistry Lab <u>OR</u> CH 4513 Organic Chemistry I & CH 4511 Organic Chemistry Lab I	4
		Biology BIO 1134 Biology I BIO 1144 Biology II BIO 3304 Microbiology	12
		CO 1003 Fundamentals of Public Speaking	3
		VS 1012 Careers in Veterinary Medicine	2
		CVM 3101 Veterinary Medical Terminology	1
		Evaluation & Management Electives¹	2
		Production Electives²	8
		Ag/Science Electives³	12
		Free Electives	10
		¹ Evaluation & Management Electives: See academic advisor for list of approved courses.	
		² Production Electives: See academic advisor for list of approved courses.	
		³ Ag/Science Electives: See academic advisor for list of approved courses.	
		Writing Requirement: Satisfied by the successful completion of ADS 1113, ADS 2111, ADS 4213, ADS 4613, ADS 4221, and ONE of: ADS 2102, ADS 2122, ADS 3213, ADS 4212, or ADS 4623.	
Course requirements for Pre-Veterinary students (3 + 1 program) to obtain a B.S. degree in Animal and Dairy Sciences		Course requirements for Pre-Veterinary students (3 + 1 program) to obtain a B.S. degree in Animal and Dairy Sciences	

<p>Because</p> <ol style="list-style-type: none"> 1. the entrance requirements for the College of Veterinary Medicine satisfy a portion of the course requirements for the Animal and Dairy Sciences curriculum 2. a number of students are enrolled in Animal and Dairy Sciences while satisfying their pre-veterinary requirements and 3. an Animal and Dairy Sciences degree will be especially helpful to a practicing veterinarian, <p>the following requirements for those electing to apply for a Bachelor of Science degree in Animal and Dairy Sciences after successfully completing the first year of Veterinary Medicine are listed.</p> <p>General Education Requirements 27 Dept Core 39 Science/Veterinary Medicine Concentration (excluding Science Electives and Free Electives) 40</p> <p>To qualify for the Bachelor of Science degree in ADS, a student in the 3+1 program must complete the 3 years of above listed undergraduate course work (106 hours) and also successfully complete the first year of the Veterinary Medicine curriculum.</p>		<p>Because</p> <ol style="list-style-type: none"> 4. the entrance requirements for the College of Veterinary Medicine satisfy a portion of the course requirements for the Animal and Dairy Sciences curriculum 5. a number of students are enrolled in Animal and Dairy Sciences while satisfying their pre-veterinary requirements and 6. an Animal and Dairy Sciences degree will be especially helpful to a practicing veterinarian, the following requirements for those electing to apply for a Bachelor of Science degree in Animal and Dairy Sciences after successfully completing the first year of Veterinary Medicine are listed. <p>General Education Requirements 27 Dept Core 39 Science/Veterinary Medicine Concentration (excluding Science Electives and Free Electives) 40</p> <p>To qualify for the Bachelor of Science degree in ADS, a student in the 3+1 program must complete the 3 years of above listed undergraduate course work (106 hours) and also successfully complete the first year of the Veterinary Medicine curriculum.</p>	
<p>ADS Minor Requirements</p> <p>Obtaining a minor in Animal and Dairy Sciences will serve to complement other Bachelor of Science studies at Mississippi State University through multidisciplinary science coursework aimed to provide a deeper understanding of livestock.</p> <p>Course Requirements: ADS 1113 Animal Science ADS 1121 Animal Science Laboratory</p> <p>Production Courses: 3 hours ADS 3213 Livestock Growth and Development ADS 3223 Horse Management ADS 4113 Swine Science ADS 4223 Goat and Sheep Production ADS 4323 Beef Cattle Science ADS 4813 Dairy Farm Management</p> <p>Evaluation Course: 2 hours ADS 2102 Equine Conformation and Performance Evaluation ADS 2122 Advanced Equine Evaluation ADS 3812 Dairy Cattle Appraisal ADS 4212 Livestock Evaluation ADS 4232 Advanced Livestock Evaluation</p> <p>Upper-Level Course: 9 hours</p>		<p>ADS Minor Requirements</p> <p>Obtaining a minor in Animal and Dairy Sciences will serve to complement other Bachelor of Science studies at Mississippi State University through multidisciplinary science coursework aimed to provide a deeper understanding of livestock.</p> <p>Course Requirements: ADS 1113 Animal Science ADS 1121 Animal Science Laboratory</p> <p>Production Courses: 3 hours ADS 3213 Livestock Growth and Development ADS 3223 Horse Management ADS 4113 Swine Science ADS 4223 Goat and Sheep Production ADS 4323 Beef Cattle Science ADS 4813 Dairy Farm Management</p> <p>Evaluation Course: 2 hours ADS 2102 Equine Conformation and Performance Evaluation ADS 2122 Advanced Equine Evaluation ADS 3812 Dairy Cattle Appraisal ADS 4212 Livestock Evaluation ADS 4232 Advanced Livestock Evaluation</p> <p>Upper-Level Course: 9 hours</p>	

ADS 3014 Anatomy & Physiology ADS 3314 Introduction to Meat Science ADS 4114 Animal Nutrition ADS 4213 Animal Breeding ADS 4213 Feeds & Feeding ADS 4333 Equine Exercise Physiology ADS 4543 Applied Animal Biotechnology ADS 4613 Physiology of Reproduction ADS 4623 Physiology of Lactation ADS 4633 Immunology and Disease in Large Livestock Species Total Credits: 18 Hours		ADS 3014 Anatomy & Physiology ADS 3314 Introduction to Meat Science ADS 4114 Animal Nutrition ADS 4214 Animal Breeding ADS 4213 Feeds & Feeding ADS 4333 Equine Exercise Physiology ADS 4543 Applied Animal Biotechnology ADS 4613 Physiology of Reproduction ADS 4623 Physiology of Lactation ADS 4633 Immunology and Disease in Large Livestock Species Total Credits: 18 Hours	
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3. JUSTIFICATION AND STUDENT LEARNING OUTCOMES

In lieu of recent changes, pre-veterinary medical technology students no longer have an academic major to choose upon acceptance to MSU, but instead, are routed to Academic Affairs as “undeclared” students. The Animal and Dairy Sciences (ADS) aims to offer an academic “home” for these students from day one who desire to enter the Veterinary Medical Technology Program (VMTP), housed in the College of Veterinary Medicine. The proposed curriculum allows these students not only to take courses to fulfill entrance requirements for the VMTP, but also provides them a solid foundation in the event they are not accepted into the VMTP. Currently, the VMTP accepts 30 students into the program each year. For those not selected, they often choose to declare Animal and Dairy Sciences as their major moving forward. This happens for a variety of reasons, but sometimes, the change is motivated by the lack of financial aid that may be received for students who have maximized the number of credit hours that can be completed as an undeclared student. The proposed Pre-Vet Med Tech concentration in ADS allows students to complete coursework for VMTP requirements while also completing coursework that will help them earn a baccalaureate degree in the event they are not accepted into the VMTP.

Upon successful completion of a Bachelor of Science degree in Animal and Dairy Sciences, student should 1) have a comprehensive understanding of the animal and dairy sciences industries 2) have a more global perspective of the various sectors of production animal agriculture, and 3) have technical and discipline specific skills needed to successfully contribute to the animal and dairy science industries.

4. SUPPORT

Letters Attached

5. PROPOSED 4-LETTER ABBREVIATION

PVSC (Pre-Vet/Science)
BSIN (Business and Industry)
PMGT (Production Management)
PVMT (Pre-Vet Med Tech)

6. EFFECTIVE DATE

Spring 2020



MISSISSIPPI STATE
UNIVERSITY.

**DEPARTMENT OF
ANIMAL AND DAIRY SCIENCES**

P.O. Box 9815
Mississippi State, MS 39762
P. 662.325.2802
F. 662.325.8873

March 15, 2019

Dr. Franz,

The Undergraduate Curriculum Committee in the Department of Animal and Dairy Sciences fully supports the proposed curriculum modification. The addition of the "Pre-Vet Med Tech" concentration allows students to use the Department of Animal and Dairy Sciences as an academic "home" until they are either admitted into the Veterinary Medical Technology Program or desire to complete the ADS degree. We look forward to providing students with a landing place in an academic major until they decide the direction in which they wish to go.

Please accept this letter of support for the undergraduate curriculum modifications. If you have any questions or concerns, I will be happy to address them.

Undergraduate Curriculum Committee Members include:

Jessica M. Graves (Chair)
Clay Cavinder
Brett Crow
Derris Devost-Burnett
Thu Dinh
Jamie E. Larson
Caleb O. Lemley

Shengfa Liao
Erdogan Memili
Molly Nicodemus
Henry Paz
Brian J. Rude
Trent Smith
Amanda Stone

Animal and Dairy Sciences
Undergraduate Coordinator & Instructor
Office: 662-325-2936

APPROVAL FORM FOR

College: College of Ag and Life Sciences Department: College of Ag and Life Sciences

Nature of Change: Add New Certificate Program **Date Initiated:** 2/28/19 **Effective Date:** Upon Approval

Major:

Concentration:

New Degree Program Name:

Major: Meat Science Certificate Progra

Concentration:

Summary of Proposed Changes:

A certificate program in Meat Science is proposed for Undergraduate students. This certificate is proposed by the College of Agriculture and Life Sciences to predominantly meet a need for students in Food Science, Nutrition, and Health Promotion and Animal and Dairy Sciences. Students in Poultry Science will also benefit from this program.

The Department of Animal and Dairy Science and the Department of Food Science, Nutrition, and Health Promotion at Mississippi State University would like to offer a Meat Science Certificate under the umbrella of the College of Agriculture and Life Sciences for students who wish to specialize in the meat processing industry. Students must complete a total of 24 credit hours as described below to be eligible for the certificate. Nineteen credit hours are in required courses, with the remaining 5 hours to be selected from several electives. Most of the coursework required for the certificate may be incorporated into students' regular program of study within either the ADS major or the FNH major (except

Food and Nutrition concentration). Students wishing to pursue this certificate should work with their academic advisor to select and schedule courses to meet the needs of their major and the certificate program.

Students must also complete 300 hours of hands-on experiential learning in meat processing, research, and extension activities. With this approach we can train students into career ready professionals equipped with a comprehensive understanding of the industry and a skill set designed for them to make an immediate impact in meat science government, academic, or industry positions upon graduation.

Approved:

Date:

John Blank 9
Mari White

16 March 2019
2-28-19

Department Head

J. Cormier
Chair, College or School Curriculum Committee

8/2/2019

[Signature]
Dean of College or School

8/9/19

Chair, University Committee on Courses and Curricula

Chair, Graduate Council(if applicable)

Chair, Deans Council

Proposal for Addition of Certificate Program Certificate: Meat Science

Contact: Wes Schilling schilling@foodscience.msstate.edu

1. CATALOG DESCRIPTION

The department of Food Science, Nutrition, and Health Promotion and the department of Animal and Dairy Sciences offer a Meat Science Certificate for students who wish to specialize in the meat processing industry. Students must complete a total of 24 credit hours as described below to be eligible for the certificate. Nineteen credit hours are in required courses, with the remaining 5 hours to be selected from several electives. Students must also complete 300 hours of hands-on experiential learning in meat processing, research, and extension activities. With this approach, students will be career ready professionals equipped with a comprehensive understanding of the industry and a skill set designed for them to make an immediate impact in meat science government, academic, or industry positions upon graduation.

Administration: The certificate will be administered through the College of Agriculture and Life Sciences. A meat science faculty member from either the Department of Food Science, Nutrition, and Health Promotion or the Department of Animal and Dairy Sciences will be designated as the meat Science Certificate coordinator and will oversee the program's administration.

Admission: The Meat Science certificate is open to undergraduate students who are currently enrolled in any major at Mississippi State University. The certificate program requires a minimum of 24 semester hours. Students in the certificate program must obtain a minimum of C in each course.

Proposed Curriculum Outline:

	Hours	Title	Course Code
Required (19 credit hours)	4	Intro to Meat Science	ADS/FNH 3314
	3	Food Law	FNH 4333
	4	Poultry Processing	FNH/PO 4514
	4	Microbiology of Foods	BIO/FNH 4414
	1	HACCP Training	DIS Credit
	3	Internship (3 credits must be at meat processing or related facility)	FNH 4480 or ADS 4420
Electives (Minimum 5 credit hours)	3	Advanced Science of Muscle Foods	ADS/FNH 4313
	4	Quality Assurance of Food Products	FNH 4164
	2	Poultry Product Safety and Sanitation	FNH/PO 4512
	4	Growth and Development	ADS 3214
	3	Food Composition and Reactions	ADS/FNH 4243
	1	Applied Food Chemistry	FNH 4241
	4	Analysis of Food Products	FNH 4114
	2	Meat Judging	ADS/FNH 3142

Experiential Learning Requirement

In addition to the knowledge gained through bona fide coursework, it is essential that our students are career ready upon graduation and have the necessary technical skillset that will be required in the competitive meat production to processing industries.

To ensure our Meat Science Certificate candidates are well versed in the technical and soft skills upon graduation, students must participate in **300 hours** of experiential learning activities and training geared specifically towards meat processing, meat science research, and extension. **These 300 hours of experiential learning will fall under either the FNH 4480 or ADS 4420 Internship course and will merit 3 credits to the student.**

Meat processing experience:

Students must work at least 100 hours over the course of one semester or summer in the MSU meat lab under the supervision of **the Meat Lab Manager**. Students must coordinate their work schedule with the Meat Lab Manager. Students will be expected to participate in all activities including but not limited to: slaughter, fabrication, further processing, packaging, sanitation, and preparing orders.

Research experience:

Students must work at least 100 hours over the course of one semester or summer as a research assistant in one of the meat science faculty member's labs. Students must work with the faculty member and graduate students in the lab group to determine the specific responsibilities and expectations of the position. Activities may include but are not limited to: sample processing and collection, media preparation, laboratory cleanup, sensory testing, microbiological testing, texture analysis, color analysis, and PCR.

Extension experience:

Students must work a total of 100 hours over the course of a semester or summer to assist with Extension activities related to meat science. Students must work with the Extension faculty to arrange a schedule and to determine the specific responsibilities and expectations of the position. Activities may include but are not limited to: preparation and planning for workshops such as HACCP and Marination 101, site visits to food processors, television/media outreach, 4-H and FFA activities, and Extension publication preparation.

Students must be employed as a student worker in the appropriate laboratory/facility or be registered for Directed Individual Study credits for the time period worked. Directed Individual Study credits will be agreed upon between the student and the supervising faculty member based on the responsibilities of the position and the hours worked. For completion of the certificate program, students must keep a log of hours worked and activities performed in each experiential activity. The supervising faculty member of each activity must sign off on the records for the certificate to be awarded.

3. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Upon completing the Meat Science certificate, students will be able to

- Understand different segments of the meat industry
- Be able to successfully make a variety of processed meat products
- Develop HACCP plans for food products
- Understand the role of meat science in extension
- Describe the role of extension in Mississippi
- Conduct sensory evaluation tests of food
- Calculate ingredient formulations for meat products
- Illustrate how research can be conducted to make business decisions

Assessment:

Program assessment will be by means of an exit survey and job placement data: Students will self-evaluate their learning about Meat Science in the certificate program, and how it has impacted their career aspirations and readiness to work posterior to graduation.

4. LETTER OF SUPPORT

Please see attached letters of support from the curriculum committees from Department of Food Science, Nutrition, and Health Promotion, Department of Animal and Dairy Sciences, and the Poultry Science Department

5. PROPOSED 4-LETTER ABBREVIATION

MSCI



MISSISSIPPI STATE UNIVERSITY™

Department of Food Science, Nutrition, and Health Promotion

February 14th, 2019

To: University Courses and Curriculum Committee

From: M. Wes Schilling
Food Science, Nutrition, and Health Promotion;
Curriculum Committee Chair

Subject: Meat Science Certificate Program

Meat Science Certificate Program: The Department of Animal and Dairy Science and the Department of Food Science, Nutrition, and Health Promotion at Mississippi State University offer a Meat Science Certificate for students who wish to specialize in the meat processing industry. Students must complete a total of 24 credit hours as described below to be eligible for the certificate. Nineteen credit hours are in required courses, with the remaining 5 hours to be selected from several electives. Most of the coursework required for the certificate may be incorporated into students' regular program of study within either the ADS major or the FNH major (except Food and Nutrition concentration). Students wishing to pursue this certificate should work with their academic advisor to select and schedule courses to meet the needs of their major and the certificate program.

The proposed addition of a meat science certificate program has been voted on and approved by Food Science, Nutrition and Health Promotion Teaching Faculty by a vote of 14 yes votes and 0 no votes.

M. Wes Schilling
FNH Curriculum Committee Chair

BOX 9805 • MISSISSIPPI STATE, MS 39762-9805 • PHONE 662.325.4002 • www.mstate.edu/dept/fsnhp

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**DEPARTMENT OF
ANIMAL AND DAIRY SCIENCES**

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Mississippi State, MS 39762
P. 662.325.2802
F. 662.325.8873

February 25, 2019

Dr. Franz,

The Undergraduate Curriculum Committee in the Department of Animal and Dairy Sciences unanimously supports the proposed Meat Science Certificate Program. This interdepartmental program offers a unique educational experience for both current and prospective students who desire to specialize in the meat processing industry.

Please accept this letter of support for the proposed Meat Science Certificate Program. If you have any questions or concerns, I will be happy to address them.

Undergraduate Curriculum Committee Members include:

Jessica M. Graves (Chair)
Clay Cavinder
Brett Crow
Derris Devost-Burnett
Thu Dinh
Jamie E. Larson
Caleb O. Lemley

Shengfa Liao
Erdogan Memili
Molly Nicodemus
Henry Paz
Brian J. Rude
Trent Smith
Amanda Stone

Animal and Dairy Sciences
Undergraduate Coordinator & Instructor
Office: 662-325-2936



MISSISSIPPI STATE
UNIVERSITY™

February 14th, 2019

To: University Courses and Curriculum Committee

From: Aaron Kiess
Department of Poultry Science
Curriculum Committee Chair

Subject: Meat Science Certificate Program

Meat Science Certificate Program: The Department of Animal and Dairy Science and the Department of Food Science, Nutrition, and Health Promotion at Mississippi State University offer a Meat Science Certificate for students who wish to specialize in the meat processing industry. Students must complete a total of 24 credit hours as described below to be eligible for the certificate. Nineteen credit hours are in required courses, with the remaining 5 hours to be selected from several electives. Most of the coursework required for the certificate may be incorporated into students' regular program of study within either the ADS major or the FNH major (except Food and Nutrition concentration). Students wishing to pursue this certificate should work with their academic advisor to select and schedule courses to meet the needs of their major and the certificate program.

The proposed addition of a meat science certificate program has been voted on and approved by Poultry Science Teaching Faculty by a vote of _____ (10) _____.

Aaron S. Kiess

Aaron Kiess
Department of Poultry Science
Curriculum Committee Chair

Appendix 16: Intent to Offer, Modify, or Delete Certificate* Program
(Submit Appendix 16 in both PDF and Word Document Formats)

Institution:		
Date of Implementation: 1/1/2020	Six-Digit CIP Code (& Four-Digit Sequence Code if modification/deletion): 301901, 10901	Total Credit Hours: 24
CIP & Sequence codes: IHL Active Program Inventory		
Program Title as will Appear on Academic Program Inventory:		<input checked="" type="checkbox"/> Offer <input type="checkbox"/> Modify <input type="checkbox"/> Delete
Responsible Academic Unit(s): College of Agriculture and Life Sciences		
Institutional Contact: Wes Schilling Phone: 6623259456 Email: schilling@foodscience.msstate.edu		
Vocational Certificate: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Credit Bearing Program: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Title IV Financial Aid Eligible: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Which of the following best describes the certificate program:		
<input type="checkbox"/>	Pre-Baccalaureate (Less than 1 Year)	Undergraduate program with duration less than one academic year; designed for completion in less than 30 credit hours
<input checked="" type="checkbox"/>	Pre-Baccalaureate (At Least 1 Year)	Undergraduate program with duration at least 1 year; designed for completion in at least 30 hours; does not meet requirements for Associate's or Bachelor's degrees
<input type="checkbox"/>	Post-Baccalaureate	Program designed beyond the baccalaureate degree but does not meet the requirements for a master's degree
<input type="checkbox"/>	Post-Master's	Program designed beyond the master's degree but does not meet the requirements for a doctoral degree
<input type="checkbox"/>	Other	Other certificate program not meeting one of the four criteria above.
Program Summary: The department of Food Science, Nutrition, and Health Promotion and the department of Animal and Dairy Sciences offer a Meat Science Certificate for students who wish to specialize in the meat processing industry. Students must complete a total of 24 credit hours as described below to be eligible for the certificate. Nineteen credit hours are in required courses, with the remaining 5 hours to be selected from several electives. Students must also complete 300 hours of hands-on experiential learning in meat processing, research, and extension activities.		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Wes Schilling <small><i>Digitally signed by Wes Schilling Date: 2019.08.12 09:06:06 -05'00'</i></small> Institutional Contact Signature </div> <div style="width: 45%; text-align: center;"> _____ Date </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> _____ Chief Academic Officer Signature </div> <div style="width: 45%; text-align: center;"> _____ Date </div> </div>		
<p>*Certificate programs added to the Academic Program Inventory must be credit-bearing and be vocational in nature with some professional benefit to program completers. Undergraduate certificates are eligible for Title IV financial aid programs. Certificate programs that are not credit-bearing or are lifelong learning in nature (i.e. photography, travel, etc.) with no professional component should not be included in the Academic Program Inventory.</p>		

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, Room 279, (Mail Stop 9702).


College or School: Bagley College of Engineering **Department:** Ag & Biological Engineering
Contact Person: Steve Elder **Mail Stop:** 9632 **E-mail:** selder@abe.msstate.edu
Nature of Change: Degree Modification **Date Initiated:** 5/16/19 **Effective**
Date: 8/21/19
New or Current Degree Program Name: Biological Engineering

Summary of Proposed Changes:

We propose to drop the Biomedical Engineering Concentration of the Biological Engineering B.S. degree program because it has been replaced by a B.S. in Biomedical Engineering with identical requirements.

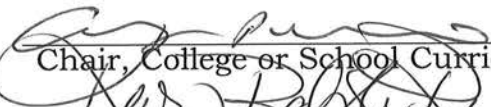
Approved by:

Date:


Digitally signed by Wes Burger
DN: cn=Wes Burger, o=Forest and Wildlife Research Center, ou,
email=w.burger@msstate.edu, c=US
Date: 2019.08.07 11:00:04 -0500

Department Head

8/7/19



Chair, College or School Curriculum Committee

8/22/19



Dean, College or School

8/23/19

Chair, University Committee on Courses & Curricula

Chair, Graduate Council (if applicable)

Chair, Deans Council

**PROPOSAL TO MODIFY BIOLOGICAL ENGINEERING B.S.
BY DROPPING BIOMEDICAL ENGINEERING CONCENTRATION**

CATALOG DESCRIPTION

See Outline Chart below.

DEGREE MODIFICATION OUTLINE CHART

CURRENT Degree Description	PROPOSED Degree Description
Degree: BS Major: Biological Engineering <i>Concentration: Biomedical Engineering</i>	Degree: BS Major: Biological Engineering
Biological engineering is that branch of the engineering profession which deals with engineering problems encountered in biological systems. The responsibilities of the Biological Engineer may include the need for more complex food-producing systems, controlling and monitoring the deterioration of the earth's environment, the replacement of living organs and artificial organs, the use of new technologies to assist the disabled, and the creation of new engineering designs based on the inherently creative characteristics of living systems. The curriculum in Biological Engineering is designed to give the student a thorough grounding in the basic sciences of mathematics, physics, chemistry, taken with and followed by a series of courses in the engineering and biological sciences and biological engineering.	Biological engineering is that branch of the engineering profession which deals with engineering problems encountered in biological systems. The responsibilities of the Biological Engineer may include the need for more complex food-producing systems, controlling and monitoring the deterioration of the earth's environment, the replacement of living organs and artificial organs, the use of new technologies to assist the disabled, and the creation of new engineering designs based on the inherently creative characteristics of living systems. The curriculum in Biological Engineering is designed to give the student a thorough grounding in the basic sciences of mathematics, physics, chemistry, taken with and followed by a series of courses in the engineering and biological sciences and biological engineering.
<i>Biomedical Engineering Concentration. Students interested in Biomedical Engineering may choose to pursue a concentration in Biomedical Engineering. This concentration is designed for undergraduate students in Biological Engineering who choose to pursue biomedical engineering as a career option. Biomedical Engineering is the rapidly growing interdisciplinary field of engineering that studies the integration of the engineering and biomedical sciences to solve problems associated with the human body and human health. The department has a rich history of biomedical engineering research and teaching</i>	

that goes back to the early 1970s when the Biological Engineering curriculum at MSU was in its infancy. Students concentrating in biomedical engineering will gain knowledge in biomechanics, biomaterials, bioinstrumentation, physiology, and other topic areas germane to the field. The undergraduate Biomedical Engineering concentration is excellent preparation for students wishing to pursue graduate studies in Biomedical Engineering.

CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
<u>English Composition</u> EN 1103 English Comp I OR EN 1163 Accelerated Comp I EN 1113 English Comp II OR EN 1173 Accelerated Comp II	6	<u>English Composition</u> EN 1103 English Comp I OR EN 1163 Accelerated Comp I EN 1113 English Comp II OR EN 1173 Accelerated Comp II	6
<u>Mathematics</u> See Major Core		<u>Mathematics</u> See Major Core	
<u>Science</u> See Major Core		<u>Science</u> See Major Core	
<u>Humanities</u> Any Gen Ed course	6	<u>Humanities</u> Any Gen Ed course	6
<u>Fine Arts</u> Any Gen Ed course	3	<u>Fine Arts</u> Any Gen Ed course	3
<u>Social/Behavioral Sciences</u> Any Gen Ed course	6	<u>Social/Behavioral Sciences</u> Any Gen Ed course	6
<u>Major Core</u>	79	<u>Major Core</u>	79
<u>Math and Basic Science</u> MA 1713 Calculus I MA 1723 Calculus II MA 2733 Calculus III MA 2743 Calculus IV MA 3253 Differential Equations I CH 1213 Chemistry I CH 1211 Investigations in Chemistry I CH 1223 Chemistry II CH 1221 Investigations in Chemistry II CH 2503 Elementary Organic Chemistry CH 2501 Elementary Organic		<u>Math and Basic Science</u> MA 1713 Calculus I MA 1723 Calculus II MA 2733 Calculus III MA 2743 Calculus IV MA 3253 Differential Equations I CH 1213 Chemistry I CH 1211 Investigations in Chemistry I CH 1223 Chemistry II CH 1221 Investigations in Chemistry II CH 2503 Elementary Organic Chemistry CH 2501 Elementary Organic	

<p>Chem Lab PH 2213 Physics I PH 2223 Physics II BIO 3304 General Microbiology BCH 4013 Principles of Biochemistry</p> <p><u>Engineering Topics</u> ABE 1911 Intro to Engineering in Life Sciences ABE 1921 Intro to Engineering Design ABE 4803 Biosystems Simulation ABE 3413 Bioinstrumentation I ABE 3303 Transport in Biological Environment ABE 4423 Bioinstrumentation II ABE 3813 Biophysical Properties of Materials ABE 4813 Principles of Engineering Design ABE 4833 Practices of Engineering Design ABE 4911 Engineering Seminar MA 3123 Introduction to Statistical Inference EM 2413 Engineering Mechanics I EM 2433 Engineering Mechanics II EM 3213 Mechanics of Materials EM 3313 Fluid Mechanics</p>		<p>Chem Lab PH 2213 Physics I PH 2223 Physics II BIO 3304 General Microbiology BCH 4013 Principles of Biochemistry</p> <p><u>Engineering Topics</u> ABE 1911 Intro to Engineering in Life Sciences ABE 1921 Intro to Engineering Design ABE 4803 Biosystems Simulation ABE 3413 Bioinstrumentation I ABE 3303 Transport in Biological Environment ABE 4423 Bioinstrumentation II ABE 3813 Biophysical Properties of Materials ABE 4813 Principles of Engineering Design ABE 4833 Practices of Engineering Design ABE 4911 Engineering Seminar MA 3123 Introduction to Statistical Inference EM 2413 Engineering Mechanics I EM 2433 Engineering Mechanics II EM 3213 Mechanics of Materials EM 3313 Fluid Mechanics</p>	
<u>Oral Communication Requirement</u> Fulfilled in GE 3513 and other ABE courses		<u>Oral Communication Requirement</u> Fulfilled in GE 3513 and other ABE courses	
<u>Writing Requirement</u> GE 3513 Technical Writing	3	<u>Writing Requirement</u> GE 3513 Technical Writing	3
<u>Computer Literacy</u> Fulfilled in Engineering Topics courses		<u>Computer Literacy</u> Fulfilled in Engineering Topics courses	
<u>Choose one of the following sets of courses to complete the degree</u>			
<p><u>Biological Engineering Degree Requirements</u> ABE 4313 Bio Treatment NPS Pollution OR ABE 4323 Phys Sys Biomed Eng</p>	25	<p><u>Biological Engineering Degree Requirements</u> ABE 4313 Bio Treatment NPS Pollution OR ABE 4323 Phys Sys Biomed Eng</p>	25

4 hours Bio Sci Elective 3 hours Bio Sci Elective 3 hours Bio Sci Elective OR Engineering Elective 9 hours Approved Engineering Electives 3 hours ABE Elective <u>Biomedical Engineering</u> <u>Concentration (BME)</u> <u>Requirements</u> <i>ABE 4323 Physiological Systems in</i> <i>Biomedical Engineering</i> <i>BIO 1134 Biology I</i> <i>Restricted Bio Sci Elective*</i> <i>12 hours Restricted Engineering</i> <i>Elective** (at least 6 hours MUST</i> <i>BE ABE Electives)</i> <i>Restricted Engineering Elective**</i> <i>OR Restricted Math/Physics</i> <i>Elective***</i> <i>*Restricted Bio Sci Electives: BIO</i> <i>2103 Cell Biology, BIO 3504</i> <i>Comparative Anatomy, BIO 4114</i> <i>Cellular Physiology, BIO 4405</i> <i>Pathogenic Microbiology, BIO</i> <i>4413 Immunology, BIO 4433</i> <i>Principles of Virology, BIO 4473</i> <i>Medical Virology, BIO 4503</i> <i>Vertebrate Histology, BIO 4504</i> <i>Comparative Vertebrate</i> <i>Embryology, BIO 4514 Animal</i> <i>Physiology, ADS 4613 Physiology</i> <i>of Reproduction, BCH 4113</i> <i>Essentials of Molecular Genetics,</i> <i>CVM 2443 Essentials of</i> <i>Biotechnology</i> <i>** Restricted Engineering</i> <i>Electives: ABE 4523 Biomedical</i> <i>Materials, ABE 4613</i> <i>Biomechanics, ABE 4723 Tissue</i> <i>Engineering and Regeneration,</i> <i>ABE 4624 Experimental Methods in</i> <i>Materials Research, ABE 4513</i>		4 hours Bio Sci Elective 3 hours Bio Sci Elective 3 hours Bio Sci Elective OR Engineering Elective 9 hours Approved Engineering Electives 3 hours ABE Elective	
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<i>Dynamics of Aging, ABE 4533 Rehabilitation Engineering, EM 4123 An Introduction to the Finite Element Method, EM 4133 Mechanics of Composite Materials, EM 4213 Advanced Mechanics of Materials, ME 3113 Engineering Analysis, ME 3533 Thermodynamics, ME 4123 Failure of Engineering Materials, ME 4743 Labview, ME 4833 Intermediate Fluid Mechanics, EG 1143 Graphic Communication, CSE 4613 Bio- computing, CSE 4623 Computational Biology, IE 4113 Human Factors Engineering, IE 4173 Occupational Safety Engineering, IE 4553 Engineering Law and Ethics, IE 4733 Linear Programming, IE 4743 Engineering Design Optimization, ECE 3714 Digital Devices and Logic Design , ECE 3443 Signals and Systems</i> <i>***Restricted Math/Physics Electives: MA 3113 Introduction to Linear Algebra, MA 3353 Differential Equations II, MA 4143 Graph Theory, MA 4373 Introduction to Partial Differential Equations, PH 2233 Physics III</i>			
Total Hours	128	Total Hours	128

JUSTIFICATION AND STUDENT LEARNING OUTCOMES

The Biomedical Engineering concentration of the Biological Engineering curriculum was approved as a separate Bachelor of Science program effective Fall 2017. The new program is currently in the process of ABET accreditation under the criteria for Bioengineering and Biomedical and Similarly Named Engineering Programs. A site visit was conducted last September and the program received only two concerns. Therefore, we are confident that the program will be accredited starting this summer retroactive to Fall 2017. The ABET self-study stated that the BME concentration of BE would be dropped or modified so that there

would not exist two identical curricula leading to different degrees (B.S. in BE with concentration in BME and B.S. in BME). On May 16, 2019 the ABE faculty voted unanimously in favor of dropping the BME concentration. Biological Engineering students will still be able to have an emphasis in biomedical engineering through appropriate selection of electives offered in the BE curriculum.

No changes to the learning outcomes are proposed.

SUPPLEMENTAL INFORMATION

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

Yes. Biomedical Engineering is now offered as a separate Bachelor of Science degree program.

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

No. It removes the current duplication of a Bachelor of Science in Biological Engineering with a concentration in Biomedical Engineering and a Bachelor of Science in Biomedical Engineering.

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

The proposed modification is not expected to directly impact student diversity.

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

We expect that graduates with a B.S. in BME will find placement more easily than those with a B.S. in BE with a concentration in BME.

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.

The modification is not expected to change potential salaries of graduates.

SUPPORT

See approval letter.

PROPOSED 4-LETTER ABBREVIATION

No change

EFFECTIVE DATE
Spring 2020



MISSISSIPPI STATE
UNIVERSITY™

**COLLEGE OF AGRICULTURE
AND LIFE SCIENCES**
Agricultural & Biological Engineering

P.O. Box 9632
130 Creelman Street
Mississippi State, MS 39762

P. 662.325.3282

F. 662.325.3853

www.abe.msstate.edu

Date: August 7, 2019

MSU Course and Curriculum Committee,

We, the undersigned, support the proposed modification of the Biological Engineering degree program to remove the concentration in Biomedical Engineering.

Steve Elder
Printed Name

Steve H. Elder
Signature

8/7/2019
Date

Ganesh C. Bora
Printed Name

Ganesh C. Bora
Signature

8/7/2019
Date

Fei Yu
Printed Name

Fei Yu
Signature

8/7/2019
Date

Prem Parajuli
Printed Name

Prem Parajuli
Signature

8/7/2019
Date

Filip Tu
Printed Name

Filip Tu
Signature

8/8/2019
Date

Daniel Chesser
Printed Name

Daniel Chesser
Signature

8/8/19
Date

John Linhoss
Printed Name

John Linhoss
Signature

8/8/19
Date

Anna Linhoss
Printed Name

Anna Linhoss
Signature

8/9/19
Date

Yang Zhao
Printed Name

Yang Zhao
Signature

8/9/19
Date

Lauren Pridly
Printed Name

Lauren Pridly
Signature

8-9-19
Date

APPROVAL FORM FOR
DEGREE PROGRAMS
MISSISSIPPI STATE UNIVERSITY

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

College: Bagley College of Engineering

Department: Chemical Engineering

Contact Person: Neeraj Rai

Mail Stop: 9595 **E-mail:** nr373@msstate.edu

Nature of Change: Modification

Date Initiated: 5/2/19 **Effective Date:** 08/16/19

Current Degree Program Name: MS Chemical Engineering (Starkville)

Major: Chemical Engineering

Concentration:

New Degree Program Name: MS Chemical Engineering (Starkville)

Major: Chemical Engineering

Concentration:


Summary of Proposed Changes:


The graduate catalog description changed to clean the language and some information regarding completion requirement and appeals process has been moved to the CHE graduate handbook.

Approved:

Date:


Department Head


5/6/19


Chair, College or School Curriculum Committee

8/22/19


Dean of College or School

8/23/19

Chair, University Committee on Courses and Curricula

Chair, Graduate Council (if applicable)

Chair, Deans Council

GRADUATE DEGREE MODIFICATION OUTLINE FORM

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

CURRENT Degree Description	PROPOSED Degree Description															
Degree: MS Major: Chemical Engineering Concentration:	Degree: MS Major: Chemical Engineering Concentration:															
<i>All current contents are being removed for simplification and better alignment with the MS and PhD programs.</i>	<p>Graduate study is offered in the Dave C. Swalm School of Chemical Engineering leading to the degree of Master of Science in Chemical Engineering. The School also cooperates in an interdisciplinary program leading to the degree of Doctor of Philosophy in Engineering with a concentration in Chemical Engineering. Prospective students are encouraged to visit the department's website (www.che.msstate.edu) to learn about faculty research interests and the graduate program.</p> <p>Admission decisions are made by the graduate affairs committee (GAC) based on the applicant's academic transcripts, a personal essay (statement of purpose), research experience, letters of recommendation, and research interests. GRE scores are recommended but not required. International students must submit TOEFL/IELTS scores. Acceptable score ranges can be found in the graduate catalog. Applicants can find additional information on admission requirements and the admission procedure on the graduate school's admissions webpage.</p> <p>For those applicants not possessing a BS in Chemical Engineering, admission will be considered on a case-by-case basis. If accepted, those students will be required to complete the required prerequisites and the Chemical Engineering undergraduate core curriculum:</p> <p><u>Prerequisites</u></p> <p>Calculus sequence plus differential equations Calculus-based physics (one semester)</p> <p><u>Undergraduate Core Curriculum</u></p> <table><tr><td>CHE 2114</td><td>Mass and Energy Balances</td><td>4</td></tr><tr><td>CHE 3113</td><td>Chemical Engineering Thermodynamics I</td><td>3</td></tr><tr><td>CHE 3123</td><td>Chemical Engineering Thermodynamics II</td><td>3</td></tr><tr><td>CHE 4113</td><td>Chemical Reactor Design</td><td>3</td></tr><tr><td>CHE 4313</td><td>Transport Phenomena</td><td>3</td></tr></table> <p>CHE 3113 can be replaced with an equivalent course in Physical Chemistry or Thermal Physics. In place of Transport Phenomena, students can take both Fluid Flow Operation (CHE 3203) and Heat Transfer Operation (CHE 3213). Equivalent courses in Fluid Mechanics and Heat Transfer will serve as a replacement for Transport Phenomena.</p> <p>Graduate Affairs Committee can waive/add course pre-requisites based on student background and preparation.</p>	CHE 2114	Mass and Energy Balances	4	CHE 3113	Chemical Engineering Thermodynamics I	3	CHE 3123	Chemical Engineering Thermodynamics II	3	CHE 4113	Chemical Reactor Design	3	CHE 4313	Transport Phenomena	3
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CHE 4113	Chemical Reactor Design	3														
CHE 4313	Transport Phenomena	3														

		<p><u>MS in Chemical Engineering, and PhD in Engineering with Chemical Engineering Concentration:</u></p> <p>The program of study of a Master of Science in Chemical Engineering degree includes advanced courses in Chemical Engineering (12 hours), Mathematics & Statistics (6 hours), and elective courses selected based on student's career goals and interests. MS program includes thesis option and courses-only (non-thesis) option. Students develop their program of study in consultation with the Major Professor and graduate committee.</p> <p>The program of study for a PhD in Engineering with Chemical Engineering concentration includes advanced courses in Chemical Engineering (12 hours), Mathematics & Statistics (6 hours), elective courses based on student's research interests (6 hours), and significant scholarly research (20 hours), presented in the dissertation. Students develop their program of study in consultation with the Major Professor and graduate committee. Direct PhD admits would have an option to earn at MS degree upon successfully completing course work (non-thesis) and thesis (thesis-option).</p> <p>At least 50% of all courses must be at the 8000 (full graduate) level. Furthermore, 50% of courses must be taken at MSU and all thesis/dissertation hours must be taken at MSU.</p> <p><u>Academic Performance and Completion Requirements for MS and PhD students</u></p> <p>See CHE graduate handbook for details.</p>	
CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
<u>Master of Science in Chemical Engineering – Thesis</u>		<u>Master of Science in Chemical Engineering – Thesis</u>	
CHE 8011 Chemical Engineering Seminar	1	CHE 8011 Chemical Engineering Seminar	1
CHE 8113 Advanced Chemical Engineering Thermodynamics	3	CHE 8113 Advanced Chemical Engineering Thermodynamics	3
CHE 8123 Chemical Kinetics and Dynamics	3	CHE 8123 Chemical Kinetics and Dynamics	3
CHE 8223 Advanced Process Computations	3	CHE 8223 Advanced Process Computations	3
CHE 8523 Advanced Transport Phenomena	3	CHE 8523 Advanced Transport Phenomena	3
Mathematics/Statistics at the 6000/8000-level	6	Mathematics/Statistics at the 6000/8000-level	6

Technical Electives at the 6000/8000 level	6	Technical Electives at the 6000/8000 level	6
CHE 8000 Thesis Research/Thesis in Chemical Engineering	6	CHE 8000 Thesis Research/Thesis in Chemical Engineering	6
<u>Total Hours</u>	31	<u>Total Hours</u>	31
		<u>In extraordinary circumstances, GAC may allow suitable substitutions to the CHE core-courses.</u>	
<u>Master of Science in Chemical Engineering -- Non-Thesis</u>		Master of Science in Chemical Engineering – Non-Thesis	
CHE 8011 Chemical Engineering Seminar	1	CHE 8011 Chemical Engineering Seminar	1
CHE 8113 Advanced Chemical Engineering Thermodynamics	3	CHE 8113 Advanced Chemical Engineering Thermodynamics	3
CHE 8123 Chemical Kinetics and Dynamics	3	CHE 8123 Chemical Kinetics and Dynamics	3
CHE 8223 Advanced Process Computations	3	CHE 8223 Advanced Process Computations	3
CHE 8523 Advanced Transport Phenomena	3	CHE 8523 Advanced Transport Phenomena	3
Mathematics/Statistics at the 6000/8000-level	6	Mathematics/Statistics at the 6000/8000-level	6
Technical Electives at the 6000/8000 level	6	Technical Electives at the 6000/8000 level	6
Additional graduate-level coursework	6	Additional graduate-level coursework	6
<u>Total Hours</u>	31	<u>Total Hours</u>	31
		<u>In extraordinary circumstances, GAC may allow suitable substitutions to the CHE core-courses.</u>	
<u>Total Hours</u>	31	<u>Total Hours</u>	31

3. Justification and Student Learning Outcomes

The catalog description is changed to streamline prerequisites and description related to degree completion requirements and appeals process is moved to CHE graduate handbook.

4. Support

A letter of support from the Graduate Coordinator of the Department of Chemical Engineering is attached.

5. Proposed 4-Letter Abbreviation

The MSU registrar has adopted CHE as the abbreviation of Chemical Engineering degrees

6. Effective Date

Fall 2019



MISSISSIPPI STATE
UNIVERSITY

BAGLEY COLLEGE OF ENGINEERING

Dave C. Swalm School of Chemical Engineering

P.O. Box 9595
323 President's Circle
Mississippi State, MS 39762

P. 662.325.0790

F. 662.325.2482

www.rallab.che.msstate.edu

May 6, 2019

University Committee on Courses & Curricula
218 Garner Hall
Mailstop 9702
Mississippi State University

UCCC Committee,

With this letter, the Dave C. Swalm School of Chemical Engineering requests changes to the graduate Catalog for our CHE MS degree and our CHE PhD concentration. The requested changes would help better serve our PhD and MS students. These modifications were approved by the faculty of Dave C. Swalm School of Chemical Engineering by electronic vote on 5/2/2019.

Please don't hesitate to contact me if additional information is needed.

Sincerely,

Neeraj Rai 5/6/2019

Neeraj Rai
Assistant Professor
Graduate Coordinator



MISSISSIPPI STATE
UNIVERSITY

BAGLEY COLLEGE OF ENGINEERING
Dave C. Swalm School of Chemical Engineering

May 2, 2019

University Committee on Courses & Curricula
218 Garner Hall
Mailstop 9702
Mississippi State University

P.O. Box 9595
323 President's Circle
Mississippi State, MS 39762

P. 662.325.0790
F. 662.325.2482
www.railab.che.msstate.edu

Dr. Franz:

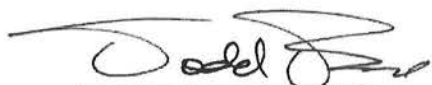
Please find attached a proposal to modify the CHE MS degree and CHE PhD concentration. These modifications were approved by the faculty of Dave C. Swalm School of Chemical Engineering by electronic vote on 5/2/2019.

Please don't hesitate to contact me if additional information is needed.

Sincerely,

 5/6/2019

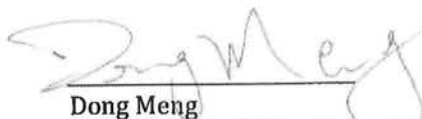
Neeraj Rai
Graduate Coordinator
Assistant Professor



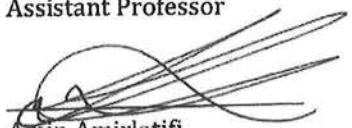
William Todd French
CHE Graduate Affairs Committee Member
Professor

 5/6/2019

Santanu Kundu
CHE Graduate Affairs Committee Member
Associate Professor



Dong Meng
CHE Graduate Affairs Committee Member
Assistant Professor



Amin Amirlatifi
CHE Graduate Affairs Committee Member
Assistant Professor



Maryam Mirabolghasemi
CHE Graduate Affairs Committee Member
Assistant Professor



Hossein Toghiani
CHE Graduate Affairs Committee Member
Professor



Yizhi Xiang
CHE Graduate Affairs Committee Member
Assistant Professor

APPROVAL FORM FOR
DEGREE PROGRAMS
MISSISSIPPI STATE UNIVERSITY

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

College: Bagley College of Engineering

Department: Chemical Engineering

Contact Person: Neeraj Rai

Mail Stop: 9595 **E-mail:** nr373@msstate.edu

Nature of Change: Modification

Date Initiated: 5/2/19 **Effective Date:** 08/16/19

Current Degree Program Name: PhD Chemical Engineering (Starkville)

Major: Engineering

Concentration: Chemical Engineering

New Degree Program Name: PhD Chemical Engineering (Starkville)

Major: Engineering

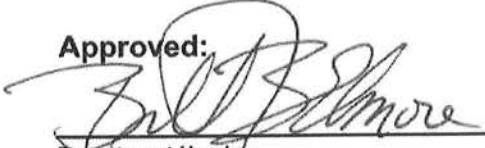
Concentration: Chemical Engineering

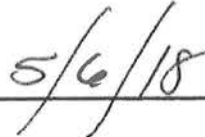
Summary of Proposed Changes:


The graduate catalog description changed to clean the language and some information regarding completion requirement and appeals process has been moved to the CHE graduate handbook.

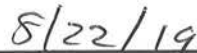
Approved:

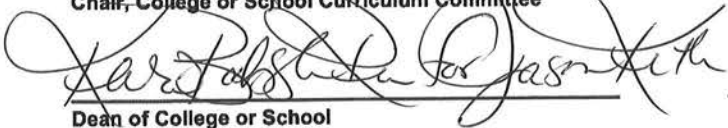
Date:

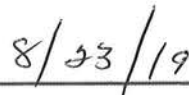

Department Head




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

GRADUATE DEGREE MODIFICATION OUTLINE FORM

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

CURRENT Degree Description	PROPOSED Degree Description															
Degree: PhD Major: Engineering Concentration: Chemical Engineering	Degree: PhD Major: Engineering Concentration: Chemical Engineering															
<i>All current contents are being removed for simplification and better alignment with the MS program.</i>	<p>Graduate study is offered in the Dave C. Swalm School of Chemical Engineering leading to the degree of Master of Science in Chemical Engineering. The School also cooperates in an interdisciplinary program leading to the degree of Doctor of Philosophy in Engineering with a concentration in Chemical Engineering. Prospective students are encouraged to visit the department's website (www.che.msstate.edu) to learn about faculty research interests and the graduate program.</p> <p>Admission decisions are made by the graduate affairs committee (GAC) based on the applicant's academic transcripts, a personal essay (statement of purpose), research experience, letters of recommendation, and research interests. GRE scores are recommended but not required. International students must submit TOEFL/IELTS scores. Acceptable score ranges can be found in the graduate catalog. Applicants can find additional information on admission requirements and the admission procedure on the graduate school admissions webpage.</p> <p>For those applicants not possessing a BS in Chemical Engineering, admission will be considered on a case-by-case basis. If accepted, those students will be required to complete the required prerequisites and the Chemical Engineering undergraduate core curriculum:</p> <p><u>Prerequisites</u></p> <p>Calculus sequence plus differential equations Calculus-based physics (one semester)</p> <p><u>Undergraduate Core Curriculum</u></p> <table><tr><td>CHE 2114</td><td>Mass and Energy Balances</td><td>4</td></tr><tr><td>CHE 3113</td><td>Chemical Engineering Thermodynamics I</td><td>3</td></tr><tr><td>CHE 3123</td><td>Chemical Engineering Thermodynamics II</td><td>3</td></tr><tr><td>CHE 4113</td><td>Chemical Reactor Design</td><td>3</td></tr><tr><td>CHE 4313</td><td>Transport Phenomena</td><td>3</td></tr></table> <p>CHE 3113 can be replaced with an equivalent course in Physical Chemistry or Thermal Physics. In place of Transport Phenomena, students can take both Fluid Flow Operation (CHE 3203) and Heat Transfer Operation (CHE 3213). Equivalent courses in Fluid Mechanics and Heat Transfer will serve as a replacement for Transport Phenomena.</p> <p>Graduate Affairs Committee can waive/add course pre-requisites based on student background and preparation.</p>	CHE 2114	Mass and Energy Balances	4	CHE 3113	Chemical Engineering Thermodynamics I	3	CHE 3123	Chemical Engineering Thermodynamics II	3	CHE 4113	Chemical Reactor Design	3	CHE 4313	Transport Phenomena	3
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		<p><u>MS in Chemical Engineering, and PhD in Engineering with Chemical Engineering Concentration:</u></p> <p>The program of study of a Master of Science in Chemical Engineering degree includes advanced courses in Chemical Engineering (12 hours), Mathematics & Statistics (6 hours), and elective courses selected based on student's career goals and interests. Students develop their program of study in consultation with the Major Professor and graduate committee. MS program includes thesis option and courses-only (non-thesis) option.</p> <p>The program of study for a PhD in Engineering with Chemical Engineering concentration includes advanced courses in Chemical Engineering (12 hours), Mathematics & Statistics (6 hours), elective courses based on student's research interests (6 hours), and significant scholarly research (20 hours), presented in the dissertation. Students develop their program of study in consultation with the Major Professor and graduate committee. Direct PhD admits would have an option to earn at MS degree upon successfully completing course work (non-thesis) and thesis (thesis-option).</p> <p>At least 50% of all courses must be at the 8000 (full graduate) level. Furthermore, 50% of courses must be taken at MSU and all thesis/dissertation hours must be taken at MSU.</p> <p><u>Academic Performance and Completion Requirements for MS and PhD students</u></p> <p>See CHE graduate handbook for details.</p>	
CURRENT CURRICULUM OUTLINE	Required Hours	PROPOSED CURRICULUM OUTLINE	Required Hours
<i>Doctor of Philosophy in Engineering with Chemical Engineering Concentration - Direct Admission</i>		PhD in Engineering with Chemical Engineering Concentration:	
<i>CHE XXXX Graduate-level coursework</i>	36	<u>Direct Admission to the PhD:</u>	
		<u>Chemical Engineering Core Course work</u>	
<i>Doctor of Philosophy in Engineering – Post Master's</i>		CHE 8113 Chemical Engineering Thermodynamics	3
<i>CHE XXXX Graduate-level coursework</i>	12	CHE 8123 Chemical Kinetics and Dynamics	3
		CHE 8223 Advanced Process Computations	3
<i>Dissertation research/dissertation</i>	20	CHE 8523 Advanced Transport Phenomena	3
		CHE 8011 Chemical Engineering Seminar	1
		<u>Mathematics/Statistics Course work</u>	
		Mathematics/Statistics at the 6000/8000-level	6

		<p><u>Technical Electives</u></p> <p>Graduate level 6XXX or 8XXX</p> <p>Students select course based on their research interests and in consultation with the Major Professor and their graduate committee.</p> <p><u>Dissertation Hours</u></p> <p>CHE 9000 Dissertation Research/Dissertation in Chemical Engineering</p> <p>Additional 11 hours can be a combination of graduate level technical electives or dissertation hours. Students select courses based on their research interests in consultation with the Major Professor and their graduate committee.</p> <p><u>Students entering the program with MS degree in Chemical Engineering:</u></p> <p>Students entering the program with MS/PhD degree in non-chemical engineering disciplines may follow this schedule upon GAC approval.</p> <p><u>Chemical Engineering Core Course work</u></p> <p>CHE 8113 Chemical Engineering Thermodynamics</p> <p>CHE 8123 Chemical Kinetics and Dynamics</p> <p>CHE 8223 Advanced Process Computations</p> <p>CHE 8523 Advanced Transport Phenomena</p> <p>CHE 8011 Chemical Engineering Seminar</p> <p><u>Dissertation Hours</u></p> <p>CHE 9000 Dissertation Research/Dissertation in Chemical Engineering</p> <p>Students are strongly encouraged to take additional graduate level classes (in consultation with the Major Professor and graduate committee) that may help with their research.</p> <p>Students who have completed MS degree at Mississippi State will not be required to retake core courses.</p> <p><u>In extraordinary circumstances, GAC may allow suitable substitutions to the CHE core-courses.</u></p>	<p>6</p> <p>20</p> <p>11</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>1</p> <p>20</p>
<i>Total Hours</i>		Total Hours	

<i>Direct Admit</i>	56	Direct Admit	56
<i>Post Masters</i>	32	Post Masters	33

3. Justification and Student Learning Outcomes

The primary focus of a doctoral program is to train students to conduct independent research. Thus, course and research (thesis/dissertation) hours distribution has been changed to emphasize research training. This brings our PhD program with other leading chemical engineering programs in the nation. We expect that these changes will allow students to carefully develop their program of study better suited for their research plans.

4. Support

A letter of support from the Graduate Coordinator of the Department of Chemical Engineering is attached.

5. Proposed 4-Letter Abbreviation

The MSU registrar has adopted CHE as the abbreviation of Chemical Engineering degrees

6. Effective Date

Fall 2019



MISSISSIPPI STATE
UNIVERSITY™

BAGLEY COLLEGE OF ENGINEERING

Dave C. Swalm School of Chemical Engineering

P.O. Box 9595
323 President's Circle
Mississippi State, MS 39762

P. 662.325.0790

F. 662.325.2482

www.railab.che.msstate.edu

May 6, 2019

University Committee on Courses & Curricula
218 Garner Hall
Mailstop 9702
Mississippi State University

UCCC Committee,

With this letter, the Dave C. Swalm School of Chemical Engineering requests changes to the graduate Catalog for our CHE MS degree and our CHE PhD concentration. The requested changes would help better serve our PhD and MS students. These modifications were approved by the faculty of Dave C. Swalm School of Chemical Engineering by electronic vote on 5/2/2019.

Please don't hesitate to contact me if additional information is needed.

Sincerely,

Neeraj Rai 5/6/2019

Neeraj Rai
Assistant Professor
Graduate Coordinator



**MISSISSIPPI STATE
UNIVERSITY**

May 2, 2019

University Committee on Courses & Curricula
218 Garner Hall
Mailstop 9702
Mississippi State University

BAGLEY COLLEGE OF ENGINEERING

Dave C. Swalm School of Chemical Engineering

P.O. Box 9595
323 President's Circle
Mississippi State, MS 39762

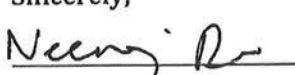
P. 662.325.0790
F. 662.325.2482
www.railab.che.msstate.edu

Dr. Franz:

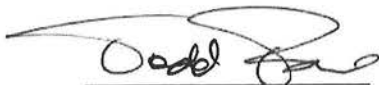
Please find attached a proposal to modify the CHE MS degree and CHE PhD concentration. These modifications were approved by the faculty of Dave C. Swalm School of Chemical Engineering by electronic vote on 5/2/2019.

Please don't hesitate to contact me if additional information is needed.

Sincerely,

 5/6/2019


Neeraj Rai
Graduate Coordinator
Assistant Professor



William Todd French
CHE Graduate Affairs Committee Member
Professor

 5/6/2019

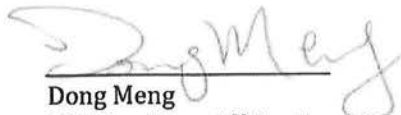
Santanu Kundu
CHE Graduate Affairs Committee Member
Associate Professor



Maryam Mirabolghasemi
CHE Graduate Affairs Committee Member
Assistant Professor



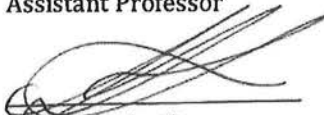
Hossein Toghiani
CHE Graduate Affairs Committee Member
Professor



Dong Meng
CHE Graduate Affairs Committee Member
Assistant Professor



Yizhi Xiang
CHE Graduate Affairs Committee Member
Assistant Professor



Amin Amirlatifi
CHE Graduate Affairs Committee Member
Assistant Professor

APPROVAL FORM FOR

DEGREE PROGRAMS

MISSISSIPPI STATE UNIVERSITY

College: BCoE

Department: Center for Advanced Vehicular Systems

Contact Person: Dr. Clay Walden

Mail Stop: 9618

Email: walden@cavs.msstate.edu

Nature of Change: Modification

Date Initiated: 8/1/2019

Effective Date: 1/1/2020

Current Degree Program Name: Master of Science/Doctor of Philosophy in Computational Engineering

Major: Computational Engineering

Concentration:

New Degree Program Name: Master of Science/Doctor of Philosophy in Computational Engineering

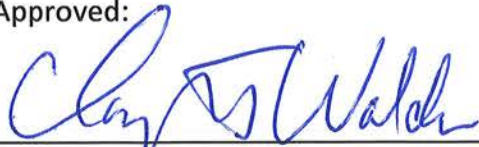
Major: Computational Engineering

Concentration:

Summary of Proposed Changes:

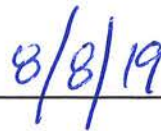
The proposed changes include a refining of the language in the description to clarify multiple aspects of the degree admission and completion requirements. Particularly, the PhD description now clearly states the completion requirements for students admitted after BS and MS. Additionally, the academic performance requirements are now clearly discussed, and the requirements for moving from provisional to regular admission are modified.


Approved:



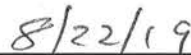
Department Head

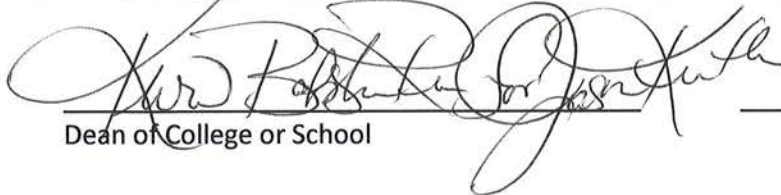
Date:



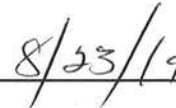


Chair, College or School Curriculum Committee





Dean of College or School



Chair, University Committee on Courses and Curricula

Chair, Graduate Council(if applicable)

Chair, Deans Council

Master of Science and PhD in Computational Engineering Degree Program Modification

1. Catalog Description

The proposed modifications to the Catalog Description are detailed below.

2. Curriculum Outline

No modifications are included in course structure for the degree program.

<p>Graduate Coordinator: Dr. Manav Bhatia Center for Advanced Vehicular Systems (CAVS) Box 9618 Mississippi State, MS 39762 Telephone: 662-325-5431 E-mail: cme-coordinator@hpc.msstate.edu</p> <p>An Interdisciplinary Curriculum</p> <p>The Computational Engineering graduate program is interdisciplinary, with faculty drawn from the academic departments of the College of Engineering and the College of Arts and Sciences, as well as the research faculty of the HPC2. Programs of study and research leading to both the Master of Science degree and the Doctor of Philosophy degree are offered on the Starkville Campus and through Distance Education. There is an increased demand by industry, academia, and government for scientists and engineers with <i>a better knowledge of the skills necessary to create new technologies and improve upon existing ones through simulation tools</i>. Such programs come with curricula covering a large range of subjects, so that they can produce scientists and engineers with broad backgrounds and viewpoints. These scientists and engineers can then be expected to understand the basic approaches to solving analytical problems and also using mathematical and computational tools required to arrive at solutions. The program is open to students with undergraduate degrees in engineering, computer science, mathematics, or a physical science. <i>Research assistantships are available through research projects in the HPC2.</i></p> <p>Admission Criteria</p>	<p>Graduate Coordinator: Dr. Manav Bhatia Center for Advanced Vehicular Systems (CAVS) Box 9618 Mississippi State, MS 39762 Telephone: 662-325-5431 E-mail: cme-coordinator@hpc.msstate.edu</p> <p>An Interdisciplinary Curriculum</p> <p>The Computational Engineering graduate program is interdisciplinary, with faculty drawn from the academic departments of the College of Engineering and the College of Arts and Sciences, as well as the research faculty of the HPC2. Programs of study and research leading to both the Master of Science degree and the Doctor of Philosophy degree are offered on the Starkville Campus and through Distance Education. There is an increased demand by industry, academia, and government for scientists and engineers with a foundation to create tools for computational analysis and design, and with a strong domain knowledge for application of these tools to complex engineering problems. Such programs come with curricula covering a large range of subjects, so that they can produce scientists and engineers with broad backgrounds and viewpoints. These scientists and engineers can then be expected to understand the basic approaches to solving analytical problems and also using mathematical and computational tools required to arrive at solutions. The program is open to students with undergraduate degrees in engineering, computer science, mathematics, or a physical science.</p> <p>Admission Criteria</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

To be admitted, the student must meet the admission requirements of the Office of the Graduate School and receive a positive recommendation from the Computational Engineering Graduate Coordinator. International students must have scored at least 550 PBT (79 iBT) on the Test of English as a Foreign Language (TOEFL) or 6.5 on the International English Language Testing System (IELTS). Students with a degree from a program that is not EAC/ABET accredited must have a satisfactory performance on the GRE.

In addition, highly qualified undergraduate students, with a minimum equivalent GPA of 3.50/4.00 on the last 60 credit hours of undergraduate courses, or a first class with distinction degree classification for students from institutions where no GPA is reported, plus satisfactory performance on the GRE for students from a non-ABET-accredited program, can be directly admitted to the Ph.D. program.

Provisional Admission

An applicant who has not fully met the GPA requirement stipulated by the University may be admitted on a provisional basis. The provisionally-admitted student is eligible for a change to regular status after receiving a 3.00 GPA on the first 9 hours of graduate courses at Mississippi State University (with no grade lower than a C). The first 9 hours of graduate courses must be within the student's program of study. Courses with an S grade, transfer credits, or credits earned while in Unclassified status cannot be used to satisfy this requirement. If a 3.00 is not attained, the provisional student shall be dismissed from the graduate program. *Academic departments may set higher standards for students to fulfill provisional requirements; a student admitted with provisional status should contact the graduate coordinator for the program's specific requirements. While in the provisional status, a student is not eligible to hold a graduate assistantship.*

Program of Study

The specific requirements for the degrees are governed by the requirements of the Office of the

To be admitted, the student must meet the admission requirements of the Office of the Graduate School and receive a positive recommendation from the Computational Engineering Graduate Coordinator. International students must have scored at least 550 PBT (79 iBT) on the Test of English as a Foreign Language (TOEFL) or 6.5 on the International English Language Testing System (IELTS). Students with a degree from a program that is not EAC/ABET accredited must have a satisfactory performance on the GRE.

Highly qualified undergraduate students **may be considered for direct admission if the following criteria are met:** a minimum equivalent GPA of 3.50/4.00 on the last 60 credit hours of undergraduate courses, or a first class with distinction degree classification for students from institutions where no GPA is reported, **and a competitive GRE score** for students from a non-ABET-accredited program.

Provisional Admission

An MS applicant who has not fully met the GPA requirement stipulated by the University may be admitted on a provisional basis. **Provisional admission will not be considered for PhD applicants. The following identify requirements in addition to those outlined by university policy in the Graduate Catalog.** A provisionally-admitted student is eligible for a change to regular status after receiving a 3.30 GPA on the first 9 hours of graduate courses at Mississippi State University (with no grade lower than a B). If a 3.30 is not attained, the provisional student shall be dismissed from the graduate program.

Program of Study

The specific requirements for the degrees are governed by the requirements of the Office of the Graduate School, the College of Engineering, and by the student's graduate committee. The committee must include at least one Computational Engineering faculty member from each of the following areas:

Graduate School, the College of Engineering, and by the student's graduate committee. The committee must include at least one Computational Engineering faculty member from each of the following areas:

1. a Computational Engineering application area,
2. high-performance computing, and
3. numerical mathematics.

The graduate committee will ensure that the student's program of study adequately addresses each of the three primary cross-disciplinary areas (an application area, high-performance computing, and numerical mathematics), and students are encouraged to include one or more courses in scientific visualization or data analytics. The composition of the graduate committee and the student's program of study must be approved by the Computational Engineering Graduate Coordinator.

Academic Performance

For students enrolled in either the M.S. or Ph.D. program, all issues related to academic probation, dismissal, and appeal will be governed by University policy, as approved by Graduate Council and the Provost and outlined by the Graduate School in the Graduate Catalog.

Graduate Courses

Because of the interdisciplinary nature of the Computational Engineering program, courses listed under the "Courses" tab are typical of those used to assemble a program of study. Courses not listed can be used for graduate credit with the approval of the student's supervisory committee and the Computational Engineering Program Coordinator. The program of study must demonstrate the student has achieved a working knowledge of

1. a Computational Engineering application area,
2. high-performance computing, and
3. numerical mathematics.

Programs of Study

1. a Computational Engineering application area,
2. high-performance computing,
3. and numerical mathematics.

The graduate committee will ensure that the student's program of study adequately addresses each of the three primary cross-disciplinary areas (an application area, high-performance computing, and numerical mathematics), and students are encouraged to include one or more courses in scientific visualization or data analytics. The composition of the graduate committee and the student's program of study must be approved by the Computational Engineering Graduate Coordinator.

Academic Performance

Continued enrollment in the program is contingent upon satisfactory performance in the courses and research and satisfactory performance toward completion of the degree. Satisfactory performance is achieved when all four of the following criteria are fulfilled:

1. **The student maintains a B average or better on**
 - a. all graduate courses completed;
 - b. all graduate courses included on the program of study.
2. **The student has no more than two grades less than C.**
3. **If the student registers for research credits in a given term, he/she receives a Satisfactory (S) grade at the end of the term.**
4. **The student has a major advisor and a supervisory graduate committee after the first two terms of enrollment.**

In addition to the university guidelines for academic dismissal in the Graduate Catalog, a graduate student in the Computational Engineering program shall be dismissed if he or she receives:

1. **More than two C grades in the coursework.**
2. **Two Unsatisfactory (U) grades on research credit hours.**

A student will be placed on academic probation based on university guidelines in the Graduate

Master of Science in Computational Engineering - Thesis

8000-level coursework	12
Additional graduate-level coursework	12
Research/thesis	6
CME 8000	
Thesis Research/ Thesis in Computational Engineering	
Total Hours	30

Master of Science in Computational Engineering - Non-Thesis

8000-level coursework	15
Additional graduate-level coursework	15
Research project	3
CME 7000	
Directed Individual Study in Computational Engineering	
Total Hours	33

Doctor of Philosophy in Computational Engineering

The Doctor of Philosophy in Computational Engineering, in addition to the coursework and research hours, includes a comprehensive examination, a dissertation, and dissertation defense. Each candidate for the doctoral degree must conduct research and in their dissertation defense on that research

1. demonstrate a mastery of the techniques of research and
2. make a very distinct contribution to the field of Computational Engineering.

The dissertation must conform to the rules of the Office of the Graduate School.

For direct-admit Ph.D. students, 72 credit hours beyond the B.S. are required (48 credit hours of coursework and 24 credit hours of dissertation research).

Catalog, or if one of the following conditions are met:

1. A second C grade on the program of study,
2. U grade on research credit hours.

The probationary period is defined to be one term (summer counts as one term if the student is enrolled). A probationary period of two terms may be considered for distance students with GPA below 3.0/4.0. If at the end of the probationary period the student has not remedied his/her deficiency (i.e., has not achieved a 3.0 GPA, has not scheduled research credit hours and received a satisfactory grade), then student may be dismissed.

For students enrolled in either the M.S. or Ph.D. program, all issues related to academic probation, dismissal, and appeal will be governed by University policy, as approved by Graduate Council and the Provost and outlined by the Graduate School in the Graduate Catalog.

Graduate Courses

Because of the interdisciplinary nature of the Computational Engineering program, courses listed under the "Courses" tab are typical of those used to assemble a program of study. Courses not listed can be used for graduate credit with the approval of the student's supervisory committee and the Computational Engineering Program **Graduate** Coordinator. The program of study must demonstrate the student has achieved a working knowledge of

1. a Computational Engineering application area,
2. high-performance computing, and
3. numerical mathematics.

Programs of Study**Master of Science in Computational Engineering - Thesis**

8000-level coursework	12
Additional graduate-level coursework	12
Research/thesis	6
CME 8000	

	<p>Thesis Research/ Thesis in Computational Engineering</p> <p>Total Hours 30</p>
	<p>Master of Science in Computational Engineering - Non-Thesis</p> <p>8000-level coursework 15</p> <p>Additional graduate-level coursework 15</p> <p>Research project 3</p> <p>CME 7000</p> <p>Directed Individual Study in Computational Engineering</p> <p>Total Hours 33</p>
	<p>Doctor of Philosophy in Computational Engineering</p> <p>A PhD in Computational Engineering requires the following credit hours beyond a BS.</p> <p>8000-level coursework 24</p> <p>Additional graduate-level coursework 24</p> <p>Research/Dissertation 24</p> <p>CME 9000</p> <p>Dissertation Research/ Dissertation in Computational Engineering</p> <p>Total Hours 72</p> <p>Qualifying GPA credit hours from MS may be counted towards this requirement.</p> <p>In addition to the coursework and research hours, the degree requirements include a comprehensive examination, a dissertation, and dissertation defense. Each candidate for the doctoral degree must conduct research and in their dissertation defense on that research</p> <ol style="list-style-type: none"> 1. demonstrate a mastery of the techniques of research, and 2. make a very distinct contribution to the field of Computational Engineering. <p>The dissertation must conform to the rules of the Office of the Graduate School.</p>

3. Justification and Student Learning Outcomes

The previous catalog description only discussed the PhD degree requirement for direct-admit students and no language was included for students admitted with an MS degree. This has caused some confusion on the degree requirements for the two different groups of students. This degree modification is attempting to provide clear guidance on the requirement to maintain uniformity across the program.

The second modification, concerning academic performance, is to clarify requirements from the students in the Computational Engineering program for continued enrollment. This, additionally, provides a mechanism to terminate the enrollment of students in the program if academic program requirements are not met.

As a final modification, the provisional admission of students is now limited only to the MS degree program. This is in order to maintain the quality of program at the PhD level.

4. Support (see attached letter).
5. Proposed 4-Letter Abbreviation: CME
6. Effective date: January 1, 2020.



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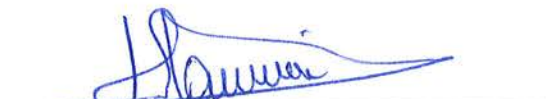
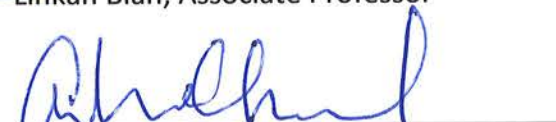
August 7, 2019

University Committee on Courses and Curricula
Mailstop: 9702
Mississippi State, MS 39762

Dear UCCC,

The undersigned represent all members of the Computational Engineering Curriculum Committee who advise and/or teach students in the program. We agree to the modifications detailed in this proposal for the MS and PhD programs in Computational Engineering.

Sincerely,


Clay Walden, Department Head
Manav Bhatia, CME Graduate Coordinator
Shanti Bhushan, Assistant Professor
Linkan Bian, Associate Professor
Youssef Hammi, Associate Professor
Andrew Oppedal, Assistant Research Professor