May 4, 2017

PRESENT: Kenneth Anthony, Lori Bruce, Russell Carr, Tim Chamblee, Joel Collier, Lara Dodds, Deborah Eakin, Steve Elder, Richard Harkess, T.J. Jankun-Kelly, Jennifer Kimmons, Beth Miller, Dan Reynolds, Rebecca Robichaux-Davis, Peter Ryan

ABSENT: Jim Adams, Amy Adkerson, Henk Arnoldus, Ashli Brown-Johnson, Judy Bonner, Francis Coleman, Dana Franz, Priscilla Hill, Julia Hodges, Rebecca Long, Rick Nader, Scott Roberts, Susan Seal, David Shaw

GUESTS AND REGULAR ATTENDERS: Kathy Griffin, Richard Human, Barry Kopetz, Chris Rousseau, Pam Sullivan

I. The May 4, 2017, meeting of the Graduate Council of Mississippi State University was called to order by Chair Lara Dodds at 1:30 PM in Room 611 of Allen Hall.

II. Dodds asked for approval of the minutes from the March 31, 2017, meeting. Deborah Eakin asked that “General Educational Psychology” be removed in the description of the modification. Dan Reynolds moved to approve and Richard Harkess seconded. The motion carried with modification presented by Deborah Eakin.

III. Report from University Committee on Courses and Curricula (UCCC): Russell Carr

- **Addition of Distance to the MS in Educational Leadership: School Administration** - Carr stated this proposal requests approval of Campus 5 delivery of the School Administration concentration of the MS degree in Educational Leadership. All coursework has been previously approved for Campus 5 delivery. The concentration is currently approved for delivery on Campuses 1 and 2. Russell Carr moved to approve and Dan Reynolds seconded. The motion carried unanimously.

- **Modification of the MS in Secondary Education** – Carr stated this proposal has two changes to the program: 1.) Delete the requirement of EDS 8243 - Advanced Planning and Managing Learning; 2.) To broaden opportunities for electives, the specification that one elective must be an education course is being removed. Students will be allowed to choose 9 hours of electives to be chosen from education or from content courses. Russell Carr moved to approve and Dan Reynolds seconded. The motion carried unanimously.

- **Modification of the Masters of Professional Accountancy** – Carr stated there are two proposed changes to the MPA program: 1.) Delete ACC 6053 - International Accounting from the program of study; 2.) Add ACC 8083, International Accounting as an elective to the program of study. Russell Carr moved to approve and Dan Reynolds seconded. The motion carried unanimously.
• Modification of the Ph.D. in Kinesiology –
Carr stated Kinesiology is proposing to add new or existing courses in the Ph.D. concentration areas by adding four courses dealing with disabilities: 1.) Addition of KI 8553 - Exercise Management for Persons with Disabilities; 2.) Addition of KI 8563 - Motor Behavior in Special Populations; 3.) Addition of KI 8543 - Postural and Locomotor Rehabilitation; 4.) Modification of prefix of EP 8603 to KI 8603 - Disability, Physical Activity and Health. Dr. Bruce commented she was very impressed with their proposal; it was very well written and concise, with very clear learning outcomes. Russell Carr moved to approve and Steve Elder seconded. The motion carried unanimously.

• Modification of the MS in Kinesiology –
Carr stated Kinesiology is proposing a new concentration (Disability Studies) under the Master of Science degree. The present proposal is associated with the four other proposals submitted for: 1.) Addition if KI 8553 – Exercise Management for Persons with Disabilities; 2.) Addition of KI 8563 – Motor Behavior in Special Populations; 3.) Addition of KI 8543 – Postural and Locomotor Rehabilitation; 4.) Modification of prefix of EP 8603 – Disability, Physical Activity and Health. Dodds noted a minor typo on the description of the proposed degree description on page 1, right hand column. The first sentence in the Proposed Degree Description should state “four concentrations.” Russell Carr moved to approve with minor edit and Dan Reynolds seconded. The motion carried unanimously.

• Master of Music Education –
Carr stated this proposal is for the addition of a new program - the Master of Music Education degree with three concentrations: Instrumental Music, Choral Music, and Elementary Music. Dodds announced the chair of the curriculum committee for Music, Richard Human, and chair of the department, Barry Kopetz, were present and available for questions or concerns. Dodds stated she noticed that in Appendix 8, New Degree Program Proposal, Credit Hour Requirements the course hour requirement is 30 and should be 32 according to the Proposed Curriculum Outline. Dr. Bruce noted on page 7, the last sentence “Further information about the MME components and requirements will be found in the Department of Music Graduate Student Handbook.” Dr. Bruce stated all program requirements should be in the Graduate Catalog and there can be no additional requirements in an unofficial document like a department handbook. Dr. Bruce stated the Catalog is the official document that governs. Russell Carr moved to approve and Rebecca Robichaux-Davis seconded. The motion carried unanimously.

• Modification of Master Science in Technology –
Dodds stated the modification creates three new concentrations within the degree. Summary of proposed changes:
1) Remove 1 core course (EDF 8363) from the current degree program;
2) Add 2 new courses (TKT 8863 – Grant Writing Essentials, TKT 8873 – Communication Tools in Technology for Teachers and Administrators;
3) Add 3 new concentrations to the MST degree: a.) Endorsements, b.) Technology Facilitator/Administrator, and c.) Improving Instruction Using Technology with a 9 hour requirement for each concentration.
Russell Carr moved to approve and Dan Reynolds seconded. The motion carried unanimously.
Addition of Distance to the Master of Science in Technology –
Dodds stated this modification adds Campus 5 delivery of the existing program and parallels the just-approved program modification. Dr. Ryan stated that Appendix 10 should be sent to him. Russell Carr moved to approve and Dan Reynolds seconded. The motion carried unanimously.

IV. Report from the Graduate School: Dr. Lori Bruce
Dr. Bruce announced the following:

• Dr. Bruce distributed and discussed the enrollment funnel data. She stated she emails college deans every Monday to update them on their applicant pool. She stated applications are down for fall by 7% compared to same day last year, completed applications are up by 2%, admissions are up 15%, and there is an increase in all admission decisions (accepted and rejected) of 8%.
• May 1st was the deadline for International applicants. Dr. Bruce stated overall International applications are down by 10%, out-of-state applications are down 6%, and the in-state is flat.
• Dr. Bruce announced we have 25 marketing and recruitment electronic campaigns running. The Graduate School has purchased 21,000 names from GRE, 15,000 names from database called ENGINE (Engineering undergraduates), and 2,500 names from McNair. Each individual receives 5 emails, and in the next couple of weeks over 200,000 emails will have been sent.
• Dr. Bruce announced The Graduate School is currently working with the Career Center to plan a Grad Fair for this fall.
• Ongoing work is being done to The Graduate School website and it will be completely overhauled in the area of Assistantships to help clarify all information.
• Graduation is scheduled for Friday, May 5th, and Saturday, May 6th. Dr. Bruce announced there are over 450 graduate applicants, over 80 doctoral students.
• The Graduate School will change the way holds are placed on incoming graduate students which restricts them from registering. In the past, a new student who was contingently admitted had a hold placed on their record and could not be released for registration until they submitted their official undergraduate transcript. That hold will now be entered for a future date, allowing the student the first few weeks of the semester to register and submit the transcript.
• In the fall there will be a Graduate Orientation which will coincide with the International Orientation.
• There is a movement toward allowing undergraduate students with a scholarship who graduate in fewer than four years to use the remainder of the scholarship as graduate students.
• We have a new option to accommodate GTAs starting in the summer that allows them to complete their Haven, FERPA training, etc. in the summer, and they must complete the GTA Workshop in the fall.
• Dr. Bruce announced there is a new option in BANNER to input a student’s advisor and committee members.
V. Report from the Graduate Student Association (GSA): Jennifer Kimmons

Jennifer made the following report.

- Elections were held and new officers are working on a variety of projects for the upcoming year, including an optional orientation for students to attend.
- The GSA plans to develop more outreach for incoming graduate students to help them assimilate into MSU life.
- A “Meet and greet” will be held in the fall along with a variety other social events.
- GSA hopes to change the structural properties of the organization to more align with their constitution; for example, they have been lacking in departmental representatives for the past few years and hope to bring this group back so that these members will spread information from the Graduate School and GSA back to their departments.
- GSA will be increasing their number of service events and their involvement with established on-campus service opportunities.
- GSA will continue to their tradition of having guest speakers at their meetings. Please email Jennifer Kimmons if anyone in your respective department is interested in speaking to graduate students at their General Body Meetings.
- The GSA will host a professional development workshop focusing on students’ individual strengths and communication skills.

VI. Old Business:

- Provisional Admission: Dr. Bruce

The discussion regarding provisional admission was unofficially tabled at last meeting in order to give the committee members time to think about the topic. Dr. Bruce asked if there was any additional input from the committee regarding provisional admission. The committee was reminded that issue is the interpretation of the policy requiring the first 9 hours of coursework after provisional admission to earn 3.0 or higher GPA: does this mean each course has a B or higher or that the average of the first 9 hours is B or higher? The discussion centers on allowing a provisional admittee to have a C and earn regular admission status. After discussion, it was decided Dr. Bruce will recommend that departments enter a comment for each student they admit provisionally stating their requirements. Dodds stated she feels that if we make no changes to the catalog the “no C” rule is not clear, so anyone who wants to enforce that must add the comment to the admission screening form. Dr. Bruce said she likes that solution; departments can use the policy as currently written but those that wish to interpret the policy more strictly can specify that requirement in the admission process.

- Final report of Subcommittee on Dissertation and Thesis Guidelines: Dr. Dodds on behalf of Dr. Franz

Dodds stated she had spoken with Dana Franz regarding the subcommittee’s work and reported they had identified several small details in the current thesis/dissertation guideline (6th edition) that are errors and must be corrected. These will be brought forward to be incorporated into the guidelines as a 6A or 6th Edition Revised. In addition, the committee identified larger issues that need to be addressed and stated the 6th edition is now five years old.

Dodds stated the subcommittee has done what it needs to do but we are likely at the point of forming a committee that will work in concert with the Library to revise the
guidelines and produce a 7th Edition. Another factor is the person who directs the Thesis and Dissertation Format Review Office has left the University and the Library is in the process of filling that position. Dodds stated a new committee in 2017-18 will be appointed and tasked with revising the guidelines, taking into consideration the questions and problems that have been identified.

VII. New Business:
• AOP 12:18 Academic Amnesty for Graduate Students, potential change: Dr. Bruce
  Dr. Bruce stated she noticed a situation with the policy that logistically is difficult to manage. She is proposing the logistics of when a student will apply for amnesty, before they are enrolled into a program or after. Below is a description of the proposed change provided in the handout from Dr. Bruce:

Currently, the policy states the following.

Academic amnesty may be requested of the Dean of the Graduate School through the student’s academic dean’s office after either provisional admission to a graduate program or provisional readmission to their former program has been granted by the department. Upon successful completion of at least 9 credit hours with a 3.0 or higher GPA provisional admission is removed and the student can then request academic amnesty until the end of the semester preceding that in which the student graduates.

This means that a student must be in a provisional admission status and have been converted to regular admission before applying for academic amnesty. This can cause confusion with the student and the department, as well as confound the processes we have for dismissal of students via the academic standing reports. Dr. Bruce suggested it would be more sensible for the order of events to be the following.

1) Student seeks academic amnesty via their home department and college.
2) If supported by the Department Head, College Dean, and Graduate School Dean, academic amnesty is granted with the contingency that the student be admitted provisionally and required to complete 9 hours with B or higher. (Their record could then be “tagged” in the Graduate School so we know to treat their admission application, academic standing report status, etc. as a “special case.”)
3) Once the student completes 9 hours with B or higher, the conditions of amnesty are complete and their admission is converted to regular admission. This allows the Registrar’s Office to segment their academic record appropriately. If the student does not earn a B or higher in their first 9 hours, they are immediately dismissed from the university.

Thus, the policy could be revised to the following statement.

Academic amnesty may be requested of the Dean of the Graduate School through the student’s academic Department Head and College Dean’s offices. If a student is granted academic amnesty, the student is required to apply for admission to a graduate program housed in the department that requested the academic amnesty. Typically, the student would apply for readmission to their prior graduate program. The student must apply for admission within 30 days of the granting of amnesty. If admitted to the program, the admission is provisional. The provisionally-admitted student is eligible for a change to regular status after receiving a 3.00 GPA on
Mississippi State University - Graduate Council

the first 9 hours of graduate courses (with no grade lower than a C). The first 9 hours of graduate courses must be within the student’s program of study and must be taken at Mississippi State University.

Discussion followed with a proposal to change the statement “with no grade lower than a C” to be changed to “with no grade lower than a B.” Dr. Bruce stated she fully supports that modification. Richard Harkess suggested removing the sentence that reads “Typically, the student would apply for readmission to their prior graduate program,” stating he feels it is not necessary. Following discussion, the modified proposed policy brought forth by Dr. Bruce was as follows.

Academic amnesty may be requested of the Dean of the Graduate School through the student’s academic Department Head and College Dean’s offices. If a student is granted academic amnesty, the student is required to apply for admission to a graduate program housed in the department that requested the academic amnesty. If admitted to the program, the admission is provisional. 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 (with no grade lower than a B). The first 9 hours of graduate courses must be within the student's program of study and must be taken at Mississippi State University.

Dodds asked for a motion to support the proposal with edits. A motion was made by Dan Reynolds for Graduate Council to support the policy with edits, seconded by Steve Elder. Motion passed unanimously. Dr. Ryan asked that Dr. Bruce formally ask that the proposal AOP 12.18 brought forward for revision to Associate Deans Council.

- Accelerated Program, Aerospace Engineering
  Dodds distributed a copy of the Accelerated Program proposal submitted by Aerospace Engineering and stated we had received it too late to ask someone from the department to be present. Following discussion, Dodds asked Council for a motion to consider the program. Motion carried unanimously.

VIII. Dodds stated that elections will be held in September for new Chair and Vice-Chair in the first meeting of the Graduate Council. She thanked everyone with a special thank you to Dan Reynolds for providing ice cream. Congratulations were extended to Beth Miller for receiving her Ph.D. Also, it was announced that the Clinical Psychology program has been accredited. There being no further business, the meeting adjourned at 3:08 PM.
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, Mail Stop 9699 (25 Morgan Ave), Phone: 325-8831.

College: Veterinary Medicine  Department: Office of Research and Graduate Studies
Contact Person: Tia Perkins or Carla Huston  Mail Stop: 9825  E-mail: tia.perkins@msstate.edu
Nature of Change: Modification  Date Initiated: 03/08/2017  Effective Date: Summer 2017
Degree to be offered at: Starkville campus

Current Degree Program Name:
Major: M.S. in Veterinary Medical Science  Concentration: 1. Population Medicine Non-Thesis (PMNT)
2. Veterinary Medical Research (VMRC)
3. Computational Biology (VCBC)
4. Infectious Diseases (VIDC)
5. Toxicology (VTOX)

New Degree Program Name:
Major: M.S. in Veterinary Medical Science  Concentration: 1. Population Medicine Non-Thesis (PMNT)
2. Veterinary Medical Research (VMRC)
3. Computational Biology (VCBC)
4. Infectious Diseases (VIDC)
5. Toxicology (VTOX)

Summary of Proposed Changes:
The CVM Graduate Faculty request that the current M.S. in Veterinary Medical Science be offered with an additional concentration: Population Medicine Thesis (POPM), which will allow students a more focused degree in population systems, including research options in both animal and human health, which is currently not available in the veterinary medical sciences program. Minor changes in format have also been made to other concentration descriptions to reflect consistency throughout the VMS Program.

Approved:  Date:

Mark L. Lawrence, Associate Dean, CVM

Chair, Graduate Programs Advisory Committee

Chair, University Committee on Courses and Curricula

Chair, Graduate Council (if applicable)

Chair, Deans Council

IHL Action Required  SACS Letter Sent
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Approved: ____________________________  Date: 3/10/17

Mark L. Lawrence, Associate Dean, CVM
Chair, Graduate Programs Advisory Committee

Chair, University Committee on Courses and Curricula

Chair, Graduate Council (if applicable)

Chair, Deans Council

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IHL Action Required  SACS Letter Sent
Major Modification Proposal - M.S. in Veterinary Medical Science

1. CATALOG DESCRIPTION


Veterinary Medical Science
Graduate Coordinator, Pathobiology and Population Medicine: Dr. R. Hartford Bailey
Graduate Coordinator, Basic Sciences: Dr. Larry Hanson
Graduate Coordinator, Clinical Sciences: Dr. Andrew Mackin
R 2002 Wise Center
Box 6100
Mississippi State, MS 39762-6100
Telephone: 662-325-1417
E-mail: tia.perkins@msstate.edu

Admission Criteria
To be admitted to the Veterinary Medical Sciences Graduate Program the applicant must either
hold a D.V.M. degree from a recognized college of veterinary medicine or have at least a
bachelor’s degree from a fully recognized four-year institution of higher learning. The scholastic
record for all undergraduate, graduate, and professional school coursework will be reviewed and
should exceed a minimum GPA of 3.00 for undergraduate work; GPA of 3.00 for graduate work;
GPA of 2.75 for the four years of the veterinary curriculum or 2.75 for the last two years of the
veterinary curriculum. Also required are three reference letters, a minimum TOEFL score of 550
PBT (213 CBT or 79 iBT) or IELTS score of 6.5 for international students from countries whose
primarily language is not English, and if a Graduate Record Examination (GRE) score is
available it will be considered.

Provisional Admission
In special circumstances a student who does not meet admission criteria may be admitted
 provisionally if approved by the Graduate Program Advisory Committee (GPAC). See
Provisional Admission under Admission in this publication for provisional requirements.

Academic Performance
If a student does not show satisfactory progress toward meeting academic, research, and/or thesis
requirements, his/her performance will be reviewed in a meeting with the student’s graduate
committee. This committee may recommend a change in the student’s program or recommend
that the student be dismissed from the degree program in the College of Veterinary Medical
Science program. Students must follow all guidelines outlined in the Graduate Catalog.

Veterinary Medical Science
Graduate Coordinator, Pathobiology and Population Medicine: Dr. R. Hartford Bailey
Graduate Coordinator, Basic Sciences: Dr. Larry Hanson
Graduate Coordinator, Clinical Sciences: Dr. Cypryanna Swiderski
R 2002 Wise Center
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## 2. Curriculum Outline

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<thead>
<tr>
<th>CURRENT Degree Description</th>
<th>PROPOSED Degree Description</th>
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<tbody>
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<td>Degree: M.S.</td>
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<td>Major: Veterinary Medical Science</td>
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### Old Concentration description:

**Master of Science in Veterinary Medical Science (VMS)**  
- Population Medicine Non-Thesis Concentration (PMNT)

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1 Equivalency of seminars and coursework is determined by the student’s graduate committee.  
2 Previous graduate level statistics courses can satisfy this requirement with approval of the student’s graduate committee. Transfer of credit for any previously taken courses is subject to the MSU Bulletin of the Graduate School policy. Graduate level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.

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<td>One seminar course (CVM 8011 or equivalent)</td>
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<tr>
<td>CVM 8000 Thesis Research/Thesis in Veterinary Medicine</td>
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<td><strong>Total Hours</strong></td>
<td>30</td>
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Master of Science in Veterinary Medical Science (VMS) - Computational Biology Concentration (VCBC)

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<th>Graduate-level courses (at least 12 hours of all coursework credits must be 8000-level or higher)</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCH 8653 Genomes and Genomics or PSS 8653 Genomes and Genomics</td>
<td>3</td>
</tr>
<tr>
<td>CSE 6613 Bio-computing</td>
<td>3</td>
</tr>
<tr>
<td>CSE 6623 Computational Biology</td>
<td>3</td>
</tr>
<tr>
<td>One statistics course</td>
<td>3</td>
</tr>
<tr>
<td>One seminar course (CVM 8011 or equivalent)</td>
<td>1</td>
</tr>
<tr>
<td>CVM 8000 Thesis Research/Thesis in Veterinary Medicine</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

1 Equivalency of seminars and coursework is determined by the student's graduate committee.

2 Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.

Master of Science in Veterinary Medical Science (VMS) - Computational Biology Concentration (VCBC)

| BCH 8653 Genomes and Genomics or PSS 8653 Genomes and Genomics | 3  |
| CSE 6613 Bio-computing                                        | 3  |
| CSE 6623 Computational Biology                                | 3  |
| One statistics course                                        | 3  |
| One seminar course (CVM 8011 or equivalent)                  | 1  |
| CVM 8000 Thesis Research/Thesis in Veterinary Medicine        | 6  |
| **Additional graduate-level courses (at least 12 hours of all coursework credits must be 8000-level or higher)** | **11** |
| **Total Hours**                                               | **30** |

1 Equivalency of seminars and coursework is determined by the student's graduate committee.

2 Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.
### Infectious Diseases Concentration (VIDC)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVM 8303 Advanced Immunology</td>
<td>3</td>
</tr>
<tr>
<td>BCH 6013 Principles of Biochemistry or BCH 6713 Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>One statistics course ¹ ²</td>
<td>3</td>
</tr>
<tr>
<td>One seminar course (CVM 8011 or equivalent) ¹</td>
<td>1</td>
</tr>
<tr>
<td>Graduate-level courses (at least 12 hours of all coursework credits must be 8000-level or higher) ¹</td>
<td>14</td>
</tr>
<tr>
<td>CVM 8000 Thesis Research/Thesis in Veterinary Medicine</td>
<td>6</td>
</tr>
<tr>
<td>Total Hours</td>
<td>30</td>
</tr>
</tbody>
</table>

¹ Equivalency of seminars and coursework is determined by the student's graduate committee.

² Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee.

### Additional graduate-level courses (at least 12 hours of all coursework credits must be 8000-level or higher) ¹

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVM 8000 Thesis Research/Thesis in Veterinary Medicine</td>
<td>6</td>
</tr>
<tr>
<td>Total Hours</td>
<td>30</td>
</tr>
</tbody>
</table>

### Master of Science in Veterinary Medical Science (VMS) – Toxicology Concentration (TOXI)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVM 8543 Mechanisms of Toxic Action or CVM 8513 Applied Veterinary Epidemiology or CVM 8533 Organ Systems Toxicology II</td>
<td>3</td>
</tr>
<tr>
<td>CVM 6513 Environmental Toxicology</td>
<td>3</td>
</tr>
<tr>
<td>One statistics course ¹ ²</td>
<td>3</td>
</tr>
<tr>
<td>One seminar course (CVM 8011, 8091 or equivalent) ¹</td>
<td>1</td>
</tr>
<tr>
<td>Graduate-level courses (at least 12 hours of all coursework credits must be 8000-level or higher) ¹</td>
<td>14</td>
</tr>
<tr>
<td>CVM 8000 Thesis Research/Thesis in Veterinary Medicine</td>
<td>6</td>
</tr>
<tr>
<td>Total Hours</td>
<td>30</td>
</tr>
</tbody>
</table>

¹ Equivalency of seminars and coursework is determined by the student's graduate committee.

² Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee.
committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.

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Master of Science in Veterinary Medical Science (VMS) – Population Medicine Thesis Concentration (POPM)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Required Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVM 8333</td>
<td>Food Safety</td>
<td>3</td>
</tr>
<tr>
<td>CVM 8513</td>
<td>Applied Veterinary Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>CVM 8503</td>
<td>Epidemiology and Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>ST 8114</td>
<td>Statistical Methods 1,2</td>
<td>4</td>
</tr>
<tr>
<td>One seminar course (CVM 8011, 8091 or equivalent)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Additional graduate-level courses (at least 12 hours of all coursework credits must be 8000-level or higher)</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>CVM 8000</td>
<td>Thesis Research/Thesis in Veterinary Medicine</td>
<td>6</td>
</tr>
<tr>
<td>Total Hours</td>
<td></td>
<td>30</td>
</tr>
</tbody>
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1 Equivalency of seminars and coursework is determined by the student's graduate committee.

2 Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.

*See above section – Concentration Description and Curriculum Outline/hours are now combined in the Graduate Catalog, therefore outline is not repeated here.
3. **JUSTIFICATION AND STUDENT LEARNING OUTCOMES:**

**JUSTIFICATION:**
We are proposing the establishment of a concentration of Population Medicine Thesis within the M.S. Degree Program in Veterinary Medical Sciences. Currently the only option offered to students interested in animal and human population systems is the Population Medicine Non-Thesis Concentration (PMNT). Given the growing emphasis on population systems within the medical and research communities, this degree will offer students the opportunity to focus in a more specialized area of veterinary medicine, while potentially increasing opportunities for placement throughout the state, the southeast, and the US in general. Furthermore, the advanced knowledge and training may result in increased salaries for graduates as the demand for population-based research programs increases globally. There are currently no degrees within MSU that offer students this type of research program.

This proposal is submitted along with one additional proposal: Modification proposal for a concentration in Population Medicine within the Ph.D. Program in Veterinary Medical Sciences.

**LEARNING OUTCOMES:**
1. Students will demonstrate advanced knowledge in a research area of population medicine involving companion animal, production animal, or public health systems.
2. Students will demonstrate the ability to disseminate original research to their peers as well as to other academic and scientific communities.
3. Students will demonstrate research skills necessary for an occupation related to their field of study in population medicine.

4. **SUPPORT**

See attached letter from the CVM Graduate Program Advisory Committee (GPAC) chair indicating approval of this modification proposal.

5. **PROPOSED 4-LETTER ABBREVIATION**

Major: M.S. VMS (no change)
Concentrations:
1. Population Medicine Non-Thesis (PMNT)
2. Veterinary Medical Research (VMRC)
3. Computational Biology (VCBC)
4. Infectious Diseases (VIDC)
5. Toxicology (TOXI)

6. **EFFECTIVE DATE**

Summer 2017
March 6, 2017

Dr. Hart Bailey  
Chair, CVM Graduate Programs Advisory Committee (GPAC)  
PO Box 6100  
Mississippi State, MS 39762

Dear Dr. Bailey;

On behalf of the Epidemiology/Population Medicine faculty at the MSU College of Veterinary Medicine, I am submitting two Degree Modification proposals to the GPAC for approval. We propose to add a concentration of Population Medicine – Thesis concentration (POPM) to the MS program and a Population Medicine concentration to the PhD program within the Veterinary Medical Sciences degree program. The addition of this concentration will allow students a more focused degree in population systems, including research options in both animal and human health, which is currently not available in the veterinary medical sciences program.

Per the Degree Program Modification instructions, the attached proposal contains both current and proposed curriculum requirements. Deletions are italicized within the text, and additions are in bold type. In addition to the proposed concentration additions, several other minor changes to the current Graduate Bulletin were also made in the proposed curriculum description:

- Updated name of Graduate Coordinator for Dept. of Clinical Sciences
- Corrected name of college program from “College of Veterinary Medical Science” to “College of Veterinary Medicine Veterinary Medical Science Program” (pages 3,5 in Academic Performance section).
- Deleted PhD program statistics requirements in MS Programs.
- Corrected course requirements for VTOX concentration in MS Programs.
- Corrected requirements for VIDC concentration with and without master’s degree.

We appreciate the time and consideration of GPAC regarding these Course Modification proposals. Please let me know if I can answer any questions.

Sincerely,

[Signature]

Carla L. Huston  
Associate Professor  
Department of Pathobiology and Population Medicine
March 10, 2017

Dr. Dana Pomykal Franz, Chair
University Committee on Courses and Curricula
281 Garner Hall
PO Box 5268
Mississippi State, MS 39762

Dear Dr. Franz;

This letter is to inform you that the College of Veterinary Medicine (CVM) Graduate Programs Advisory Committee (GPAC) has approved the proposals for the addition of the Population Medicine concentration (POPM) thesis-option Master's degree and the Population Medicine concentration (POPM) Doctorate of Philosophy degree, which are being proposed by Dr. Carla Huston.

If you have any questions, please call me at 662-325-7726.

Sincerely,

[Signature]

R.Hartford Bailey, M.S., Ph.D, CFS
Professor and Chair, CVM GPAC
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, Mail Stop 9699 (25 Morgan Ave), Phone: 325-0831.

College: Veterinary Medicine  Department: Office of Research and Graduate Studies

Contact Person: Tia Perkins or Carla Huston  Mail Stop: 9825  E-mail: tia.perkins@msstate.edu

Nature of Change: Modification  Date Initiated: 03/08/2017  Effective Date: Summer 2017

Degree to be offered at: Starkville campus

Current Degree Program Name:  Concentration:
Major: Ph.D in Veterinary Medical Science

New Degree Program Name:  Concentration:
Major: Ph.D. in Veterinary Medical Science

1. Veterinary Medical Research (VMRC)
2. Computational Biology (VCBC)
3. Infectious Diseases (VIDC)
4. Population Medicine (POPM)

Summary of Proposed Changes:

The CVM Graduate Faculty request that the current Ph.D in Veterinary Medical Science be offered with an additional concentration: Population Medicine Thesis (POPM), which will allow students a more focused degree in population systems, including research options in both animal and human health, which is currently not available in the veterinary medical sciences program. In addition, the VIDC concentration requirements were listed incorrectly in the current 2016-2017 Bulletin, so corrections have been made in the new concentration descriptions. Minor changes in format have also been made to other concentration descriptions to reflect consistency throughout the VMS Program.

Approved:  Date:

Mark L. Lawrence, Associate Dean, CVM

Chair, Graduate Programs Advisory Committee

Chair, University Committee on Courses and Curricula

Chair, Graduate Council (if applicable)

Chair, Deans Council

IHL Action Required  SACS Letter Sent
APPROVAL FORM FOR

DEGREE PROGRAMS

MISSISSIPPI STATE UNIVERSITY

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College: Veterinary Medicine  Department: Office of Research and Graduate Studies

Contact Person: Tia Perkins or Carla Huston  Mail Stop: 9825  E-mail: tia.perkins@msstate.edu

Nature of Change: Modification  Date Initiated: 03/08/2017  Effective Date: Summer 2017

Degree to be offered at: Starkville campus

Current Degree Program Name: Major: Ph.D in Veterinary Medical Science

Concentration:
1. Veterinary Medical Research (VMRC)
2. Computational Biology (VCBC)
3. Infectious Diseases (VIDC)

New Degree Program Name: Major: Ph.D. in Veterinary Medical Science

Concentration:
1. Veterinary Medical Research (VMRC)
2. Computational Biology (VCBC)
3. Infectious Diseases (VIDC)
4. Population Medicine (POPM)

Summary of Proposed Changes:

The CVM Graduate Faculty request that the current Ph.D in Veterinary Medical Science be offered with an additional concentration: Population Medicine Thesis (POPM), which will allow students a more focused degree in population systems, including research options in both animal and human health, which is currently not available in the veterinary medical sciences program.

Approved: Date: 3/10/17
Mark L. Lawrence, Associate Dean, CVM
Chair, Graduate Programs Advisory Committee

Chair, University Committee on Courses and Curricula

Chair, Graduate Council (if applicable)

Chair, Deans Council

IHL Action Required  SACS Letter Sent
Major Modification Proposal – Ph.D in Veterinary Medical Science

1. CATALOG DESCRIPTION


Veterinary Medical Science
Graduate Coordinator, Pathobiology and Population Medicine: Dr. R. Hartford Bailey
Graduate Coordinator, Basic Sciences: Dr. Larry Hanson
Graduate Coordinator, Clinical Sciences: Dr. Andrew Mackin
R 2002 Wise Center
Box 6100
Mississippi State, MS 39762-6100
Telephone: 662-325-1417
E-mail: tia.perkins@msstate.edu

Admission Criteria
To be admitted to the Veterinary Medical Sciences Graduate Program the applicant must either hold a D.V.M. degree from a recognized college of veterinary medicine or have at least a bachelor’s degree from a fully recognized four-year institution of higher learning. The scholastic record for all undergraduate, graduate, and professional school coursework will be reviewed and should exceed a minimum GPA of 3.00 for undergraduate work; GPA of 3.00 for graduate work; GPA of 2.75 for the four years of the veterinary curriculum or 2.75 for the last two years of the veterinary curriculum. Also required are three reference letters, a minimum TOEFL score of 550 PBT (213 CBT or 79 iBT) or IELTS score of 6.5 for international students from countries whose primarily language is not English, and if a Graduate Record Examination (GRE) score is available it will be considered.

Provisional Admission
In special circumstances a student who does not meet admission criteria may be admitted provisionally if approved by the Graduate Program Advisory Committee (GPAC). See Provisional Admission under Admission in this publication for provisional requirements.

Academic Performance
If a student does not show satisfactory progress toward meeting academic, research, and/or thesis requirements, his/her performance will be reviewed in a meeting with the student’s graduate committee. This committee may recommend a change in the student’s program or recommend that the student be dismissed from the degree program in the College of Veterinary Medical Science program. Students must follow all guidelines outlined in the Graduate Catalog.
**Proposed Graduate Bulletin Catalog Description (2017 – 2018):**

Veterinary Medical Science  
Graduate Coordinator, Pathobiology and Population Medicine: Dr. R. Hartford Bailey  
Graduate Coordinator, Basic Sciences: Dr. Larry Hanson  
Graduate Coordinator, Clinical Sciences: **Dr. Cyprianna Swiderski**  
R 2002 Wise Center  
Box 6100  
Mississippi State, MS 39762-6100  
Telephone: 662-325-1417  
E-mail: tia.perkins@msstate.edu

**Admission Criteria**  
To be admitted to the Veterinary Medical Sciences Graduate Program the applicant must either hold a D.V.M. degree from a recognized college of veterinary medicine or have at least a bachelor’s degree from a fully recognized four-year institution of higher learning. The scholastic record for all undergraduate, graduate, and professional school coursework will be reviewed and should exceed a minimum GPA of 3.00 for undergraduate work; GPA of 3.00 for graduate work; GPA of 2.75 for the four years of the veterinary curriculum or 2.75 for the last two years of the veterinary curriculum. Also required are three reference letters, a minimum TOEFL score of 550 PBT (213 CBT or 79 iBT) or IELTS score of 6.5 for international students from countries whose primarily language is not English, and if a Graduate Record Examination (GRE) score is available it will be considered.

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**Academic Performance**  
If a student does not show satisfactory progress toward meeting academic, research, and/or thesis requirements, his/her performance will be reviewed in a meeting with the student’s graduate committee. This committee may recommend a change in the student’s program or recommend that the student be dismissed from the graduate degree program in the **College of Veterinary Medicine Veterinary Medical Science** Program. Students must follow all guidelines outlined in the Graduate Catalog.
### 2. Curriculum Outline

<table>
<thead>
<tr>
<th>CURRENT Degree Description</th>
<th>PROPOSED Degree Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Degree:</strong> Ph.D.</td>
<td><strong>Degree:</strong> Ph.D</td>
</tr>
<tr>
<td><strong>Major:</strong> Veterinary Medical Science</td>
<td><strong>Major:</strong> Veterinary Medical Science</td>
</tr>
<tr>
<td><strong>Concentrations:</strong> Veterinary Medical Research (VMRC), Computational Biology (VCBC), Infectious Diseases (VIDC)</td>
<td><strong>Concentrations:</strong> Veterinary Medical Research (VMRC), Computational Biology (VCBC), Infectious Diseases (VIDC), <strong>Population Medicine (POPM)</strong></td>
</tr>
<tr>
<td>Old degree catalog description:</td>
<td>New degree catalog description:</td>
</tr>
</tbody>
</table>

#### Admission Criteria

To be admitted to the Veterinary Medical Sciences Graduate Program, the applicant must either hold a D.V.M. degree from a recognized college of veterinary medicine or have at least a bachelor's degree from a fully recognized four-year institution of higher learning. The scholastic record for all undergraduate, graduate, and professional school coursework will be reviewed and should exceed a minimum GPA of 3.00 for undergraduate work; GPA of 3.00 for graduate work; GPA of 2.75 for the four years of the veterinary curriculum or 2.75 for the last two years of the veterinary curriculum. Also required are three reference letters, a minimum TOEFL score of 550 PBT (213 CBT or 79 iBT) or IELTS score of 6.5 for international students from countries whose primarily language is not English, and if a Graduate Record Examination (GRE) score is available it will be considered.

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or recommend that the student be dismissed from the degree program in the College of Veterinary Medical Science program. Students must follow all guidelines outlined in the Graduate Catalog.

Old Concentration description:

Doctor of Philosophy in Veterinary Medical Science (VMS) – Veterinary Medical Research Concentration (VMRC) (for students with a master's degree)

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two statistics courses*</td>
<td>6</td>
</tr>
<tr>
<td>Three seminar courses (CVM 8011 or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>Graduate-level courses (at least 12 hours of all coursework at 8000-level or higher) or additional CVM 9000 credits</td>
<td>31</td>
</tr>
<tr>
<td>CVM 9000 Dissertation Research/Dissertation in Veterinary Medicine</td>
<td>20</td>
</tr>
<tr>
<td>Total Hours</td>
<td>60</td>
</tr>
</tbody>
</table>

1 Equivalency of seminars and coursework is determined by the student’s graduate committee.
2 Previous graduate level statistics courses can satisfy this requirement with approval of the student’s graduate committee. Transfer of credit for any previously taken courses is subject to the MSU Bulletin of the Graduate School policy. Graduate level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

New Concentration description:

Doctor of Philosophy in Veterinary Medical Science (VMS) – Veterinary Medical Research Concentration (VMRC) (for students with a master's degree)

<table>
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<tr>
<th>Requirement</th>
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<td>Two statistics courses*</td>
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<td>Three seminar courses (CVM 8011 or equivalent)</td>
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<tr>
<td>Additional graduate-level courses (at least 12 hours of all coursework at 8000-level or higher) or additional CVM 9000 credits</td>
<td>31</td>
</tr>
<tr>
<td>CVM 9000 Dissertation Research/Dissertation in Veterinary Medicine</td>
<td>20</td>
</tr>
<tr>
<td>Total Hours</td>
<td>60</td>
</tr>
</tbody>
</table>

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Doctor of Philosophy in Veterinary Medical Science (VMS) – Veterinary Medical Research Concentration (VMRC) (for students with a bachelor's but no master's degree)

<table>
<thead>
<tr>
<th>Requirement</th>
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<tr>
<td>Two statistics courses*</td>
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</tr>
<tr>
<td>Graduate-level courses (at least 12 hours of all coursework at 8000-level or higher)</td>
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</tr>
<tr>
<td>CVM 9000 Dissertation Research/Dissertation in Veterinary Medicine</td>
<td>20</td>
</tr>
<tr>
<td>Additional graduate-level coursework and/or CVM 9000 credits</td>
<td>46</td>
</tr>
<tr>
<td>Total Hours</td>
<td>90</td>
</tr>
</tbody>
</table>

1 Equivalency of seminars and coursework is determined by the student’s graduate committee.
2 Previous graduate-level statistics courses can satisfy this requirement with approval of the student’s graduate committee.
committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.  
3Students must have 24 hours of graduate coursework to graduate with a Ph.D. in VMS.

### Doctor of Philosophy in Veterinary Medical Science (VMS) – Computational Biology Concentration (VCBC)
(for students with a master’s degree)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCH 8653 Genomes and Genomics or PSS</td>
<td>3</td>
</tr>
<tr>
<td>8653 Genomes and Genomics</td>
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<td>3</td>
</tr>
<tr>
<td>Two graduate-level statistics courses 1,2</td>
<td>6</td>
</tr>
<tr>
<td>Graduate-level courses (at least 12 hours of all coursework at 8000-level) or additional CVM 9000 credits 1</td>
<td>22</td>
</tr>
<tr>
<td>CVM 9000</td>
<td>20</td>
</tr>
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### Doctor of Philosophy in Veterinary Medical Science (VMS) – Computational Biology Concentration (VCBC)
(for students with a bachelor’s but no master’s degree)

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<tr>
<th>Course</th>
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<tr>
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<td>6</td>
</tr>
<tr>
<td>CVM 9000 Dissertation</td>
<td>20</td>
</tr>
<tr>
<td>Research/Dissertation in Veterinary Medicine</td>
<td></td>
</tr>
<tr>
<td>Graduate-level coursework and/or additional</td>
<td>46</td>
</tr>
<tr>
<td>CVM 9000 credits</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td>90</td>
</tr>
</tbody>
</table>

1 Equivalency of seminars and coursework is determined by the student’s graduate committee.
2 Previous graduate-level statistics courses can satisfy this requirement with approval of the student’s graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

### Doctor of Philosophy in Veterinary Medical Science (VMS) – Computational Biology Concentration (VCBC)
(for students with a bachelor’s but no master’s degree)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCH 8653 Genomes and Genomics or PSS</td>
<td>3</td>
</tr>
<tr>
<td>8653 Genomes and Genomics</td>
<td></td>
</tr>
<tr>
<td>CSE 6613 Bio-computing</td>
<td>3</td>
</tr>
<tr>
<td>CSE 6623 Computational Biology</td>
<td>3</td>
</tr>
<tr>
<td>Three seminar courses (CVM 8011 or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>Two graduate-level statistics courses 1,2</td>
<td>6</td>
</tr>
<tr>
<td>Graduate-level courses (at least 12 hours of all coursework at 8000-level or higher)</td>
<td>6</td>
</tr>
<tr>
<td>CVM 9000 Dissertation</td>
<td>20</td>
</tr>
<tr>
<td>Research/Dissertation in Veterinary Medicine</td>
<td></td>
</tr>
<tr>
<td>Graduate-level coursework and/or additional</td>
<td>46</td>
</tr>
<tr>
<td>CVM 9000 credits</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td>90</td>
</tr>
</tbody>
</table>

1 Equivalency of seminars and coursework is determined by the student’s graduate committee.
2 Previous graduate-level statistics courses can satisfy this requirement with approval of the student’s graduate committee.
counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

\(^3\) Students must have 24 hours of graduate coursework to graduate with a Ph.D. in VMS.

**Doctor of Philosophy in Veterinary Medical Science (VMS) – Infectious Diseases Concentration (VIDC)** (for students with a bachelor's but no master's degree)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVM 8303 Advanced Immunology</td>
<td>3</td>
</tr>
<tr>
<td>BCH 6013 Principles of Biochemistry or BCH 6713 Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>Two statistics courses (^1,^2)</td>
<td>6</td>
</tr>
<tr>
<td>Three seminar courses (CVM 8011 or equivalent) (^1)</td>
<td>6</td>
</tr>
<tr>
<td>Graduate-level courses (at least 12 hours of all coursework at 8000-level or higher)</td>
<td>22</td>
</tr>
<tr>
<td>CVM 9000 Dissertation</td>
<td>20</td>
</tr>
<tr>
<td>Research/Dissertation in Veterinary Medicine</td>
<td></td>
</tr>
<tr>
<td>Total Hours</td>
<td>60</td>
</tr>
</tbody>
</table>

\(^1\) Equivalency of seminars and coursework is determined by the student's graduate committee.

\(^2\) Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

\(^3\) Students must have 24 hours of graduate coursework to graduate with a Ph.D. in VMS.

**Doctor of Philosophy in Veterinary Medical Science (VMS) – Infectious Diseases Concentration (VIDC)** (for students with a master's degree)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVM 8303 Advanced Immunology</td>
<td>3</td>
</tr>
<tr>
<td>BCH 6013 Principles of Biochemistry or BCH 6713 Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>Two statistics courses (^1,^2)</td>
<td>6</td>
</tr>
<tr>
<td>Three seminar courses (CVM 8011 or equivalent) (^1)</td>
<td>6</td>
</tr>
<tr>
<td>Graduate-level courses (at least 12 hours of all coursework at 8000-level or higher)</td>
<td>22</td>
</tr>
<tr>
<td>Additional graduate-level courses (at least 12 hours of all coursework at 8000-level or higher)</td>
<td>3</td>
</tr>
<tr>
<td>Total Hours</td>
<td>60</td>
</tr>
</tbody>
</table>

\(^1\) Equivalency of seminars and coursework is determined by the student's graduate committee.

\(^2\) Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

**Doctor of Philosophy in Veterinary Medical Science (VMS) – Infectious Diseases Concentration (VIDC)** (for students with a bachelor's but no master's degree)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVM 8303 Advanced Immunology</td>
<td>3</td>
</tr>
<tr>
<td>BCH 6013 Principles of Biochemistry or BCH 6713 Molecular Biology</td>
<td>3</td>
</tr>
<tr>
<td>Two statistics courses (^1,^2)</td>
<td>6</td>
</tr>
<tr>
<td>Three seminar courses (CVM 8011 or equivalent) (^1)</td>
<td>6</td>
</tr>
<tr>
<td>Graduate-level courses (at least 12 hours of all coursework must be at 8000-level or higher)</td>
<td>6</td>
</tr>
<tr>
<td>CVM 9000 Dissertation</td>
<td>20</td>
</tr>
<tr>
<td>Research/Dissertation in Veterinary Medicine</td>
<td></td>
</tr>
<tr>
<td>Additional graduate-level coursework and/or CVM 9000 credits (^1)</td>
<td>46</td>
</tr>
<tr>
<td>Total Hours</td>
<td>90</td>
</tr>
</tbody>
</table>

\(^1\) Equivalency of seminars and coursework is determined by the student's graduate committee.

\(^2\) Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.
but will not be calculated towards the Ph.D. coursework hours.

by the student's graduate committee.

2 Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

3 Students must have 24 hours of graduate coursework to graduate with a Ph.D. in VMS.

Doctor of Philosophy in Veterinary Medical Science (VMS) – Population Medicine Concentration (POPM) (for students with a master's degree)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVM 8333</td>
<td>Food Safety</td>
<td>3</td>
</tr>
<tr>
<td>CVM 8513</td>
<td>Applied Veterinary Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>CVM 8503</td>
<td>Epidemiology and Biostatistics</td>
<td>3</td>
</tr>
<tr>
<td>ST 8114</td>
<td>Statistical Methods</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Three seminar courses (CVM 8011, 8091 or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Additional graduate-level courses (at least 12 hours of all coursework must be at 8000-level or higher) or additional 9000-level credit</td>
<td>24</td>
</tr>
<tr>
<td>CVM 9000</td>
<td>Dissertation Research/Dissertation in Veterinary Medicine</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>Total Hours</td>
<td>60</td>
</tr>
</tbody>
</table>

1 Equivalency of seminars and coursework is determined by the student's graduate committee.

2 Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.

Doctor of Philosophy in Veterinary Medical Science (VMS) – Population Medicine Concentration (POPM) (for students with a bachelor's but no master's degree)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVM 8333</td>
<td>Food Safety</td>
<td>3</td>
</tr>
<tr>
<td>CVM 8513</td>
<td>Applied Veterinary Epidemiology</td>
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</tr>
<tr>
<td>CVM 8503</td>
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<td>3</td>
</tr>
<tr>
<td>ST 8114</td>
<td>Statistical Methods</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Three seminar courses (CVM 8011, 8091, or equivalent)</td>
<td>3</td>
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<tr>
<td></td>
<td>Additional graduate-level courses (at least 12 hours of all coursework must be at 8000-level or higher) or additional 9000-level credit</td>
<td>54</td>
</tr>
<tr>
<td>CVM 9000</td>
<td>Dissertation Research/Dissertation in Veterinary Medicine</td>
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</tr>
<tr>
<td>Medicine</td>
<td>Total Hours</td>
<td>90</td>
</tr>
</tbody>
</table>

1. Equivalency of seminars and coursework is determined by the student's graduate committee.
2. Previous graduate-level statistics courses can satisfy this requirement with approval of the student's graduate committee. Graduate-level statistics courses that have counted towards a previous degree can satisfy this policy but will not be calculated towards the Ph.D. coursework hours.
3. Students must have 24 hours of graduate coursework to graduate with a Ph.D. in VMS.

A final examination (oral and/or written) which covers both the major and supportive fields and includes defense of the thesis is required. Students must present an open seminar of the thesis research just prior to oral final examinations. The student must adhere to the University and College regulations regarding his/her graduate program.

<table>
<thead>
<tr>
<th>CURRENT CURRICULUM OUTLINE</th>
<th>Required Hours</th>
<th>PROPOSED CURRICULUM OUTLINE</th>
<th>Required Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>*See above section – Concentration Description and Curriculum Outline/hours are now combined in the Graduate Catalog, therefore outline is not repeated here.</td>
<td></td>
<td>*See above section – Concentration Description and Curriculum Outline/hours are now combined in the Graduate Catalog, therefore outline is not repeated here.</td>
<td></td>
</tr>
</tbody>
</table>
3. **JUSTIFICATION AND STUDENT LEARNING OUTCOMES:**

**JUSTIFICATION:**
We are proposing the establishment of a concentration of Population Medicine Thesis within the Ph.D. Degree Program in Veterinary Medical Sciences. Currently the only option offered to students interested in animal and human population systems is the M.S. Degree in Population Medicine Non-Thesis Concentration (PMNT). Given the growing emphasis on population systems within the medical and research communities, this degree will offer students the opportunity to focus in a more specialized area of veterinary medicine, while potentially increasing opportunities for placement throughout the state, the southeast, and the US in general. Furthermore, the advanced knowledge and training may result in increased salaries for graduates as the demand for population-based research programs increases globally. There are currently no degrees within MSU that offer students this type of research program.

This proposal is submitted along with one additional proposal: Modification proposal for a concentration in Population Medicine within the M.S. Program in Veterinary Medical Sciences.

**LEARNING OUTCOMES:**
1. Students will demonstrate advanced knowledge in a research area of population medicine involving companion animal, production animal, or public health systems.
2. Students will demonstrate the ability to disseminate original research to their peers as well as to other academic and scientific communities.
3. Students will demonstrate research skills necessary for an occupation related to their field of study in population medicine.

4. **SUPPORT**

See attached letter from the CVM Graduate Program Advisory Committee (GPAC) chair indicating approval of this modification proposal.

5. **PROPOSED 4-LETTER ABBREVIATION**

Major: Ph.D. VMS (no change)
Concentrations: 1. Veterinary Medical Research (VMRC)
                2. Computational Biology (VCBC)
                3. Infectious Diseases (VIDC)
                4. Population Medicine (POPM)

6. **EFFECTIVE DATE**

Summer 2017
March 6, 2017

Dr. Hart Bailey  
Chair, CVM Graduate Programs Advisory Committee (GPAC)  
PO Box 6100  
Mississippi State, MS 39762

Dear Dr. Bailey,

On behalf of the Epidemiology/Population Medicine faculty at the MSU College of Veterinary Medicine, I am submitting two Degree Modification proposals to the GPAC for approval. We propose to add a concentration of Population Medicine – Thesis concentration (POPM) to the MS program and a Population Medicine concentration to the PhD program within the Veterinary Medical Sciences degree program. The addition of this concentration will allow students a more focused degree in population systems, including research options in both animal and human health, which is currently not available in the veterinary medical sciences program.

Per the Degree Program Modification instructions, the attached proposal contains both current and proposed curriculum requirements. Deletions are italicized within the text, and additions are in bold type. In addition to the proposed concentration additions, several other minor changes to the current Graduate Bulletin were also made in the proposed curriculum description:

- Updated name of Graduate Coordinator for Dept. of Clinical Sciences
- Corrected name of college program from “College of Veterinary Medical Science” to “College of Veterinary Medicine Veterinary Medical Science Program” (pages 3, 5 in Academic Performance section).
- Deleted PhD program statistics requirements in MS Programs.
- Corrected course requirements for VTOX concentration in MS Programs.
- Corrected requirements for VIDC concentration with and without master’s degree.

We appreciate the time and consideration of GPAC regarding these Course Modification proposals. Please let me know if I can answer any questions.

Sincerely,

Carla L. Huston  
Associate Professor  
Department of Pathobiology and Population Medicine
March 10, 2017

Dr. Dana Pomykal Franz, Chair  
University Committee on Courses and Curricula  
281 Garner Hall  
PO Box 5268  
Mississippi State, MS 39762

Dear Dr. Franz;

This letter is to inform you that the College of Veterinary Medicine (CVM) Graduate Programs Advisory Committee (GPAC) has approved the proposals for the addition of the Population Medicine concentration (POPM) thesis-option Master's degree and the Population Medicine concentration (POPM) Doctorate of Philosophy degree, which are being proposed by Dr. Carla Huston.

If you have any questions, please call me at 662-325-7726.

Sincerely,

R. Hartford Bailey, M.S., Ph.D, CFS  
Professor and Chair, CVM GPAC
NOTE: This form is a cover sheet that must accompany the degree program change proposal. The actual proposal should be prepared in accordance with format requirements provided in the Guide and Format for Curriculum Proposals published by the UCCC. Both cover sheet and proposal should be submitted, along with all required copies, to UCCC, Garner Hall, Room 279, Mail Stop 9702.

College or School: Ag & Life Sciences
Contact Person: Julie Parker
Nature of Change: Authorization to Plan
Current Degree Program Name: Early Intervention

Major:

Department: School of Human Sciences
Phone: 662-325- E-mail: Jparker@humansci.msstate.edu
Date Initiated: 3/2017 Effective Date: 1/2019

Concentration:

Summary of Proposed Changes:

New Degree

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

RECEIVED
SEP 14 2017
The Graduate School
Appendix 7: Authorization to Plan a New Degree Program

<table>
<thead>
<tr>
<th>Institution:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date of Implementation:</strong></td>
</tr>
<tr>
<td>Fall 2019</td>
</tr>
</tbody>
</table>

**Program Title as will Appear on Academic Program Inventory, Diploma, and Transcript:**
Master of Science in Early Intervention

**Six Digit CIP Code:**
19.0710

**Degree(s) to be Awarded:**
Master of Science (M.S.)

**Credit Hour Requirements:**
30

**List any institutions within the state offering similar programs:**
None. In Mississippi there are currently no other programs that offer a Master of Science degree in Early Intervention, with a specific focus on IDEA-Part C (Birth to 3).

**Responsible Academic Unit(s):**
School of Human Sciences

**Institutional Contact:**
Julie Parker

**Number of Students Expected to Enroll in First Six Years:**

<table>
<thead>
<tr>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
<th>Year Six</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>16</td>
<td>20</td>
<td>20</td>
<td>23</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>116</td>
</tr>
</tbody>
</table>

**Number of Graduates Expected in First Six Years:**

<table>
<thead>
<tr>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
<th>Year Six</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>8</td>
<td>10</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
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<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total</td>
</tr>
</tbody>
</table>

70

**Program Summary:**
The Master of Science Degree in Early Intervention is framed by developmental, ecological, and family systems theories and evidence-based practices that emphasize the interactive nature of child development. The program will produce personnel with highly specialized skills and knowledge about critical assessment, intervention, and instructional programming, addressing the unique needs of infants, toddlers, and preschool children with disabilities or at-risk conditions and their families. The program will draw upon a range of approaches that acknowledge the central role of the family in a child’s life with services provided in natural environments, i.e., home and community-based settings.
1. Describe the proposed program and explain how it fits within the mission of the institution.

The master of science degree in Early Intervention (EI) will be offered through the School of Human Sciences and the Human Development and Family Science program at Mississippi State University. Human Development and Family Science (HDFS) is an interdisciplinary lifespan approach to the study of children, youth, and families. The Early Intervention (EI) program fits well within the mission and philosophy of the HDFS program, as the focus of the EI program will be on young children who have or are at risk for developmental delays or disabilities from birth through age five and their families.

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

The importance of early intervention has been addressed on many levels but still remains difficult for some communities because of the limited training available for professionals to serve very young children with special needs. It is estimated that up to 23.4% of young children (infants and toddlers) with disabilities are not receiving important early intervention services (National Survey of Child and Adolescent Well-Being, 2012).

The proposed Early Intervention program is an innovative and comprehensive program designed to address the shortage of trained professionals with expertise in working with infants, toddlers, and preschoolers with special needs, and their families. Early intervention and early childhood inclusive programming are important topics, and the requirements for highly trained personnel under the Individuals with Disabilities Education Act (IDEA) that support early intervention and inclusive programming are timely for Mississippi, as the state moves to more comprehensive Pre-K and IDEA, Part C, systems. The supply-demand gap in the number of professionals available and prepared to serve infants, toddlers, and preschoolers with special needs and their families is significant in Mississippi and in other parts of the nation. A shortage of well-trained professionals limits accessibility to services in many areas of the state. The Individuals with Disabilities Education Act (2004) requires states to ensure that professionals providing services under IDEA, Part C, have the skills and knowledge base necessary to provide comprehensive assessment and intervention to eligible participants.

This program will address two identified gaps in service that persist in the EI field in Mississippi: (a) The need to increase the quantity and diversity of early interventionists prepared to serve the increasing numbers of infants and toddlers eligible for services under IDEA, Part C, and (b) The need to increase the qualifications of early childhood educators to implement evidence-based practices for inclusive programming in community-based and school-based pre-K classrooms.

The National Center to Improve the Recruitment and Retention of Qualified Personnel for Children with Disabilities (Personnel Improvement Center), a division of the U.S. Department of Education, predicts the current level of need for personnel in the Early Intervention field is very high. Recent legislation has provided for more jobs, with many grants being awarded to agencies targeted at "seeking out" this population of children and serving them more effectively (2013). The U.S. Bureau of Labor Statistics (2016) predicts a 9% increase in Early Intervention jobs over the next 10 years.

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

The Center for Distance Education contracted with EAB Strategic Research firm to conduct a market analysis during the spring of 2017, the data collected indicated in 2018 there were 825 career positions posted in the Southeastern Region and 7,173 career positions posted nationally. As reported by the Mississippi State Department of Health- First Steps Early Intervention Program, there are currently 60 Service Coordinators, 9 District Coordinators, 2 evaluation specialist, and approximately 200+ providers (including Early Interventionists) and only one (1) has a degree in early intervention. The requirements in Mississippi for early intervention professionals are currently being evaluated and revised and an individual with a Master of Science Degree in Early Intervention would be eligible for any of the previous positions. Additionally, there are currently (as of spring 2017) 26 positions posted in other agencies that require a degree in the area of early intervention.
4. Describe the anticipated institutional impact including any research efforts associated with this program.

A graduate program in Early Intervention will generate additional students to the university in addition to research and external funding opportunities. The Early Intervention graduate program will enhance the university’s reputation as the only Early Intervention graduate program in the State of Mississippi. Students will be prepared to present at conferences, publish papers, and collaborate with faculty on research and programming. Additionally, graduates will begin careers as early interventionists serving the needs of Mississippi’s most valuable resource, its youngest citizens.

5. Provide the total anticipated budget for the program. Indicate from where the funds will come.

One additional HDFS 9-month faculty member at $60,000 will be needed. The new faculty member will be 50% time in M.S. program and 50% in the undergraduate HDFS program.

The HDFS faculty has investigated opportunities to find matching funds for the requested faculty position from external funding sources and the Mississippi Ag and Forestry Experiment Station. We will have a plan in place to find hard money for these positions within a 5-year period.

<table>
<thead>
<tr>
<th>Program Year</th>
<th>Costs</th>
<th>Student Enrollment</th>
<th>Cost per Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>1 FTE HDFS Asst./Assoc. Professor @ $60,000</td>
<td>12 new students</td>
<td>5,000.00</td>
</tr>
<tr>
<td>Year 2</td>
<td>1 FTE HDFS Asst./Assoc. Professor @ $60,000</td>
<td>16 new students + 12 2nd year students</td>
<td>2,142.86</td>
</tr>
<tr>
<td>Year 3</td>
<td>1 FTE HDFS Asst./Assoc. Professor @ $60,000</td>
<td>20 new students + 16 2nd year students</td>
<td>1,666.67</td>
</tr>
<tr>
<td>Year 4</td>
<td>1 FTE HDFS Asst./Assoc. Professor @ $60,000 + 1 FTE HDFS Asst./Assoc. Professor @ $60,000 = $120,000.00</td>
<td>20 new students + 20 3rd year students</td>
<td>3,000.00</td>
</tr>
<tr>
<td>Year 5</td>
<td>$120,000.00</td>
<td>23 new students + 20 4th year students</td>
<td>2,790.70</td>
</tr>
<tr>
<td>Year 6</td>
<td>$120,000.00</td>
<td>25 new students + 23 4th year students</td>
<td>2,500.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td>540,000.00</td>
<td>116</td>
<td>4,655.17</td>
</tr>
</tbody>
</table>

6. Use a chart to show anticipated enrollment for the first five years of the program.
7. Indicate where the proposed program is offered within the state

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

<table>
<thead>
<tr>
<th>Mississippi State University</th>
<th>The University of Southern Mississippi</th>
<th>The University of Mississippi</th>
<th>Jackson State University</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.S.—Early Intervention— online—proposed</td>
<td>M.S.—Child and Family Studies— online</td>
<td>M.Ed.—Early Childhood Education— online</td>
<td>M.Ed.—Early Childhood Education</td>
</tr>
</tbody>
</table>

As detailed in the chart above, the University of Southern Mississippi does offer an online master’s in Child and Family Studies, but this degree has a very general focus and does not specifically focus on young children at risk for disabilities or with developmental disabilities. The coursework and field experience will be vastly different as the Early Intervention degree is more narrow in focus, providing specific training for implementation and evaluation for children with specific at-risk conditions or disabilities. This graduate program will incorporate appropriate specialist concepts and practices supporting effective intervention and pedagogies focusing on inclusion and interventions provided in natural environments (home and community-based centers).

The University of Mississippi has a new online M.Ed. program with a focus on early childhood. This program was established to prepare teachers for work with young children in Pre-K–K settings. This program offers State of Mississippi teacher licensure, but coursework does not prepare students to work within inclusive classrooms or with infants or toddlers. Also, this program does not emphasize a family-centered approach and the need to work with families. The coursework does not place an emphasis on inclusion, assessment, intervention, or family-centered care.

Jackson State University offers a M.Ed. in Early Childhood Education, but these programs are offered through the College of Education and, therefore, focus primarily on early school age children and preparation of teachers for public school classrooms, thus, no focus on very young children with or at-risk for disabilities.

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

We do not anticipate interfering with the enrollments at JSU, USM, University of Mississippi, or other institutions.
8. What is the specific basis for formulating the number of graduates expected in the first six years?

There are currently no early intervention-specific graduate programs in the state of Mississippi or in the region that are offered through Distance Education. This proposed program will be uniquely designed to address the needs of children birth to age 5, with disabilities or at-risk conditions, and their families. Early intervention is a fast-growing special education field devoted to addressing developmental delays and disabilities at the earliest age possible. Under the IDEA Act, Part C, all 50 states must make early intervention available to at-risk infants and toddlers. Research has demonstrated many benefits of early intervention, including higher intellectual achievement, less grade retention, better graduation rates, and improved health outcomes. Early intervention specialists are child development experts, who design and modify evidence-based plans to improve young children's ability. Early intervention specialists generally must hold master's-level training with state teaching certification. The Early Intervention program at Mississippi State University will serve students from within Mississippi and throughout the nation by providing a comprehensive online educational program.
July 7, 2017

Ms. Jessica Graves
Chair, CALS Curriculum Committee
Box 9815
Mississippi State, MS 39762

Ms. Graves:

The School of Human Sciences Curriculum Committee has reviewed the new degree proposal for a Master of Science in Early Intervention, and we support its approval. The proposal demonstrates the availability of staff, library support, funds for setting up and continuing the degree, and other necessary resources. We believe the proposed degree will benefit our department as well as young children with developmental disabilities and the professionals that work with them in Mississippi and other states.

Sincerely,

Joe D. Wilmoth, Chair

Alisha Hardman, Member

Julie Parker, Member

Quisto Settle, Member

Brandan Wheeler, Member
NOTE: This form is a cover sheet that must accompany the degree program change proposal. The actual proposal should be prepared in accordance with format requirements provided in the Guide and Format for Curriculum Proposals published by the UCCC. Both cover sheet and proposal should be submitted, along with all required copies, to UCCC, Garner Hall, Room 279, Mail Stop 9702.

College: Engineering
Contact Person: Stan Bullington
Nature of Change: Modification
Program will be offered at: Starkville (Campus 1)

Department: Industrial and Systems Engineering
Mail Stop: 9542

E-mail: bullington@lse.msstate.edu
Date: 6/27/2017

Current Degree Program Name: Master of Science
Major: Industrial Engineering
Concentration: All--Human Factors/Ergo, Mfg Sys, Ind Sys, Mgt Sys, Ops Research

Effective Date: Fall 2017

New Degree Program Name: Select One
Major:
Concentration:

Summary of Proposed Changes:
Reduction in MS non-thesis hours from 33 to 30.

Digital Signature: [Signature]
Date: 2017.08.28 15:37:56 -05'00'

RECEIVED
SEP 14 2017
The Graduate School
1. **CATALOG DESCRIPTION**

   Please see table below for the current and proposed catalog descriptions.

2. **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.

<table>
<thead>
<tr>
<th>CURRENT Degree Description</th>
<th>PROPOSED Degree Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Degree:</strong> Master of Science</td>
<td><strong>Degree:</strong> Master of Science</td>
</tr>
<tr>
<td><strong>Major:</strong> Industrial Engineering</td>
<td><strong>Major:</strong> Industrial Engineering</td>
</tr>
<tr>
<td>The Department of Industrial and Systems Engineering offers the Doctor of Philosophy in Industrial and Systems Engineering. In addition, the Department offers the Master of Science in Industrial Engineering with both thesis and non-thesis options. The M.S. (thesis option) is a research-oriented degree and serves to prepare students for positions in industry or government or for further graduate study in industrial and systems engineering or related areas. The M.S. (non-thesis option) is designed to prepare students for positions in business and industry that require a graduate education.</td>
<td>The Department of Industrial and Systems Engineering offers the Doctor of Philosophy in Industrial and Systems Engineering. In addition, the Department offers the Master of Science in Industrial Engineering with both thesis and non-thesis options. The M.S. (thesis option) is a research-oriented degree and serves to prepare students for positions in industry or government or for further graduate study in industrial and systems engineering or related areas. The M.S. (non-thesis option) is designed to prepare students for positions in business and industry that require a graduate education.</td>
</tr>
<tr>
<td>Concentrations offered at the master’s level are:</td>
<td>Concentrations offered at the master’s level are:</td>
</tr>
<tr>
<td>Human Factors and Ergonomics Concentration (HFE): This concentration is designed for students who wish to increase their understanding of Human Factors and Ergonomics (HFE). Students will be exposed to both a breadth and depth of HFE principles and practices including but not limited to physical ergonomics, cognitive ergonomics, and occupational safety and health.</td>
<td>Human Factors and Ergonomics Concentration (HFE): This concentration is designed for students who wish to increase their understanding of Human Factors and Ergonomics (HFE). Students will be exposed to both a breadth and depth of HFE principles and practices including but not limited to physical ergonomics, cognitive ergonomics, and occupational safety and health.</td>
</tr>
<tr>
<td>Industrial Systems Concentration (SYS): This concentration prepares students for general Industrial and Systems Engineering (ISE) work. It is designed to allow the student a high degree of flexibility in selecting a program that meets his/her needs. For example, the student might choose to specialize in one or more areas of ISE (e.g., quality engineering) or choose a very broad program covering several ISE fields.</td>
<td>Industrial Systems Concentration (SYS): This concentration prepares students for general Industrial and Systems Engineering (ISE) work. It is designed to allow the student a high degree of flexibility in selecting a program that meets his/her needs. For example, the student might choose to specialize in one or more areas of ISE (e.g., quality engineering) or choose a very broad program covering several ISE fields.</td>
</tr>
<tr>
<td>Management Systems Engineering Concentration (MGTS): This concentration is designed for students who wish to increase their understanding and capability in the areas of management systems</td>
<td>Management Systems Engineering Concentration (MGTS): This concentration is designed for students who wish to increase their understanding and capability in the areas of management systems</td>
</tr>
</tbody>
</table>
Engineering and general engineering management. The philosophy behind this option is that students can be provided with knowledge that will enable them to apply an engineering approach to problems involved in the design and operation of management systems.

Manufacturing Systems Concentration (MFGS): This concentration is designed for students who wish to increase their understanding of the design, analysis and control of manufacturing systems and processes.

Operations Research Concentration (OPRS): This concentration is designed for students who wish to increase their understanding of and use of Operations Research (OR) skills for systems analysis and design.

Admission Criteria: Typically, an entering M.S. student should have a grade point average of 3.00 out of 4.00 for the junior and senior years. Likewise, an entering Ph.D. student with an M.S. degree should have a 3.50 out of 4.00 grade point average on the M.S. work, while a Ph.D. student entering with only a B.S. degree is expected to have a 3.50 out of 4.00 on the last two years of the undergraduate program. A student with a lower GPA may still be eligible for admission based on outstanding qualifications in other areas. All entering students must submit GRE general-test scores. International students must have a minimum TOEFL score of 550 PBT (213 CBT or 80 iBT) or IELTS score of 6.5.

The department reviews completed applications four times a year: February 15, May 15, August 15, and November 15. Incomplete or not fully processed applications will be reviewed during the next cycle.

Provisional Admission: If a student does not fully meet the admission requirements of the program, it may be possible for that student to be provisionally admitted. If provisionally admitted, the student must attain a 3.00 GPA on the first 9 hours of graduate courses at Mississippi State University after admission to the program. 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 GPA is not attained, the student will be dismissed from the graduate program.

Academic Performance: In addition to the criteria defined in the current Bulletin of the Graduate School, unsatisfactory performance in the graduate program in Industrial and Systems Engineering is defined as any
of the following:

- failure to maintain a 3.00 average in the M.S. program or 3.30 in the Ph.D. program,
- failure of the qualifying exam (Ph.D. students only),
- failure of the preliminary exam (Ph.D. students only);
- failure of the comprehensive final exam (M.S. non-thesis option only),
- unsatisfactory evaluation of thesis or dissertation, or
- a failure of the required component of the program of study.

Any one of these will constitute the basis for review for possible dismissal. If the student drops six or more quality points below the required average (3.00 for M.S. or 3.30 for Ph.D.), the graduate coordinator will review the record along with the student’s graduate committee and will recommend a final course of action, which will be immediate dismissal or the establishment of a probationary period in which corrective action must take place.

While on probation, the student is not eligible to receive an assistantship and is required to raise his/her cumulative GPA to 3.00 for M.S. or 3.30 for Ph.D. by the end of the following semester of enrollment. During that semester, the student must enroll in 9 credit hours of coursework; Directed Individual Study courses are excluded.

In case of a dismissal from the graduate program, a student may appeal his/her academic dismissal according to the following procedure:

- Within four weeks of being notified of the official dismissal, the student must present the request and related explanation in writing to the graduate coordinator. The graduate coordinator will review the appeal with the appropriate departmental committee and render a recommendation.
- If the appeal at the departmental level is unsuccessful, a student may then appeal to the Associate Dean for Research and Graduate Studies in the college.
- If the appeal at the college level is unsuccessful, the student may then appeal to the Office of the Provost.

Any one of these will constitute the basis for review for possible dismissal. If the student drops six or more quality points below the required average (3.00 for M.S. or 3.30 for Ph.D.), the graduate coordinator will review the record along with the student’s graduate committee and will recommend a final course of action, which will be immediate dismissal or the establishment of a probationary period in which corrective action must take place.

While on probation, the student is not eligible to receive an assistantship and is required to raise his/her cumulative GPA to 3.00 for M.S. or 3.30 for Ph.D. by the end of the following semester of enrollment. During that semester, the student must enroll in 9 credit hours of coursework; Directed Individual Study courses are excluded.

In case of a dismissal from the graduate program, a student may appeal his/her academic dismissal according to the following procedure:

- Within four weeks of being notified of the official dismissal, the student must present the request and related explanation in writing to the graduate coordinator. The graduate coordinator will review the appeal with the appropriate departmental committee and render a recommendation.
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Doctor of Philosophy in Industrial & Systems Engineering

Industrial Engineering courses 30
Courses in discipline other than Industrial Engineering 6

**IE 6623**
Statistics II (or equivalent) 3

**IE 6773**
Simulation I (or equivalent) 3

Additional Graduate-level coursework 6
Research 20
Total Hours 68

A preliminary examination, a dissertation, and an oral examination in defense of the dissertation are required.

Additional requirements are:

1. No ISE graduate student may list **ST 8114** or **IE 6613** on his/her graduate program
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
3. No program can contain more than 6 hours of Directed Individual Study (**IE 7000**).

Doctoral students must complete at least 48 hours of coursework beyond the B.S. level.

Master of Science in Industrial Engineering with Human Factors and Ergonomics Concentration (HFE) - Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- IE 3123
- IE 4613/6613

**IE 6773**
Systems Simulation I 3
**IE 6623**
Engineering Statistics II 3
At least 3 HFE ISE courses 9

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Doctor of Philosophy in Industrial & Systems Engineering

Industrial Engineering courses 30
Courses in discipline other than Industrial Engineering 6

**IE 6623**
Statistics II (or equivalent) 3

**IE 6773**
Simulation I (or equivalent) 3

Additional Graduate-level coursework 6
Research 20
Total Hours 68

A preliminary examination, a dissertation, and an oral examination in defense of the dissertation are required.

Additional requirements are:

1. No ISE graduate student may list **ST 8114** or **IE 6613** on his/her graduate program
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
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Doctoral students must complete at least 48 hours of coursework beyond the B.S. level.

Master of Science in Industrial Engineering with Human Factors and Ergonomics Concentration (HFE) - Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
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**IE 6773**
Systems Simulation I 3
**IE 6623**
Engineering Statistics II 3
At least 3 HFE ISE courses 9
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE 8000</td>
<td>Thesis Research/Thesis in Industrial Engineering</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>At least one non-HFE ISE course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>At least one course from Mathematics (MA) or Statistics (ST)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>At least one course from a supporting area (Biological Engineering [ABE], Psychology [PSY], Kinesiology [KI], Mechanical Engineering [ME], Mathematics [MA], Statistics [ST], etc.)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>30</td>
</tr>
</tbody>
</table>

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours coursework must be at the 8000-level or higher.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Human Factors and Ergonomics Concentration (HFE) - Non-Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- IE 3123
- IE 4613/6613

<table>
<thead>
<tr>
<th>Course</th>
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<td>IE 6773</td>
<td>Systems Simulation I</td>
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<td>IE 6623</td>
<td>Engineering Statistics II</td>
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</tr>
<tr>
<td></td>
<td>At least three HFE ISE courses</td>
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</tr>
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<td></td>
<td>At least two non-HFE ISE courses</td>
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</tr>
<tr>
<td></td>
<td>At least two courses from Mathematics (MA) or Statistics (ST)</td>
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</tr>
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</table>

IE 6773  | Systems Simulation I                              | 3       |
| IE 6623  | Engineering Statistics II                         | 3       |
|          | At least three HFE ISE courses                    | 9       |
|          | At least two non-HFE ISE courses                  | 6       |
|          | At least two courses from Mathematics (MA) or Statistics (ST) | 6 |
At least one course from a supporting area (Biological Engineering [ABE], Psychology [PSY], Kinesiology [K], Mechanical Engineering [ME], Mathematics [MA], Statistics [ST], etc.)
Course to be selected by the academic advisor and graduate program committee
Total Hours

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student’s area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 33 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Industrial Systems Concentration (SYS) - Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 3123
- IE 3913
- IE 4333
- IE 4613/6613

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE 6773</td>
<td>Systems Simulation I</td>
<td>3</td>
</tr>
<tr>
<td>IE 8000</td>
<td>Thesis Research/ Thesis in Industrial Engineering</td>
<td>6</td>
</tr>
</tbody>
</table>

All other courses to be selected by the student

At least one course from a supporting area (Biological Engineering [ABE], Psychology [PSY], Kinesiology [K], Mechanical Engineering [ME], Mathematics [MA], Statistics [ST], etc.)

Total Hours

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student’s area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 30 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Industrial Systems Concentration (SYS) - Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 3123
- IE 3913
- IE 4333
- IE 4613/6613

<table>
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<tbody>
<tr>
<td>IE 6773</td>
<td>Systems Simulation I</td>
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</tr>
<tr>
<td>IE 8000</td>
<td>Thesis Research/ Thesis in Industrial Engineering</td>
<td>6</td>
</tr>
</tbody>
</table>

All other courses to be selected by the student along with the academic advisor and graduate
A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours coursework must be at the 8000-level or higher.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
3. No program can contain more than 9 hours of courses that are required in the bachelor's degree curriculum.
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 3123
- IE 3913
- IE 4333
- IE 4613/6613

At least 15 hours of 8000-level courses selected by the student along with the academic advisor and grade program committee. 

Other courses to be selected by the student along with the academic advisor and grade program committee. 

Total Hours 30

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above.
A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student's area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
2. No program can contain more than 9 hours of courses that are required in the bachelor's degree curriculum.
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 30 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Management Systems Engineering Concentration (MGTS) - Thesis

Prerequisites (foundational courses) are:

- B.S. in engineering from an ABET-accredited program or permission from the MSE Technical Committee
- IE 3913
- IE 4613/6613

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE 6513</td>
<td>Engineering Administration</td>
<td>3</td>
</tr>
<tr>
<td>IE 6533</td>
<td>Project Management</td>
<td>3</td>
</tr>
<tr>
<td>IE 6573</td>
<td>Process Improvement</td>
<td>3</td>
</tr>
<tr>
<td>IE 6573</td>
<td>Engineering</td>
<td>3</td>
</tr>
<tr>
<td>IE 8583</td>
<td>Enterprise Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>IE 8913</td>
<td>Engineering Economy II</td>
<td>3</td>
</tr>
<tr>
<td>IE 8000</td>
<td>Thesis Research/ Thesis in Industrial Engineering</td>
<td>6</td>
</tr>
</tbody>
</table>

At least two non-MSE ISE courses
Course to be selected by the student along with academic advisor and graduate program committee
Total Hours

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:
A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours at the 8000-level is required.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Management Systems Engineering Concentration (MGTS) - Non-Thesis

Prerequisites (foundational courses) are:

- B.S. in engineering from an ABET-accredited program or permission from the MSE Technical Committee
- IE 3913
- IE 4613/6613

IE 6513 Engineering Administration 3
IE 6533 Project Management 3
IE 6573 Process Improvement 3
IE 8583 Enterprise Systems Engineering 3
IE 8913 Engineering Economy II 3

At least two non-MSE ISE courses 6
Other courses to be selected by the student along with the academic advisor and graduate program committee 9
Total Hours 30

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student’s area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students.

Additional requirements are:
student’s area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 30 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Manufacturing Systems Concentration (MFGS) - Thesis

Prerequisites (foundational courses) are:

- B.S. in engineering from an ABET-accredited program or permission from the Manufacturing Systems Technical Committee
- Computer programming proficiency
- IE 4333/6333
- IE 4613/6613

IE 6653 Industrial Quality Control 3
IE 8333 Production Control Systems II 3
IE 8353 Manufacturing Systems 3
IE 8000 Modeling 3
IE 8000 Thesis Research/Thesis in Industrial Engineering 6

At least two Manufacturing Systems ISE courses 6
At least two non-Manufacturing Systems ISE courses 6
Course to be selected by the student along with the academic advisor and graduate program committee 3
Total Hours 30

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours coursework must be at the 8000-level or higher.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program
3. No program can contain more than 9 hours of
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2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.

3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.

4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Manufacturing Systems Concentration (MFGS) - Non-Thesis

Prerequisites (foundational courses) are:

- B.S. in engineering from an ABET-accredited program or permission from the Manufacturing Systems Technical Committee
- Computer programming proficiency
- IE 4333/6333
- IE 4613/6613

IE 6653  Industrial Quality Control  3
IE 8333  Production Control Systems II  3
IE 8353  Manufacturing Systems  3
Modeling
At least two Manufacturing Systems ISE courses  6
At least two non-Manufacturing Systems ISE courses  6
Other courses to be selected by the student along with the academic advisor and graduate program committee  9
Total Hours  30

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student’s area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students. IE 9000 does not apply to M.S. students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.

2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
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2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 33 credit hours of coursework above the baccalaureate degree.

Master of Science in Industrial Engineering with Operations Research Concentration (OPRS) - Thesis

Prerequisites (foundational courses) are:
- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 4613/6613

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE 6733</td>
<td>Linear Programming</td>
<td>3</td>
</tr>
<tr>
<td>IE 6773</td>
<td>Systems Simulation I</td>
<td>3</td>
</tr>
<tr>
<td>IE 8000</td>
<td>Thesis Research/Thesis in Industrial Engineering</td>
<td>6</td>
</tr>
</tbody>
</table>

At least two OR ISE courses
At least two non-OR ISE courses
At least one course from Computer Science (CSE), Mathematics (MA), or Statistics (ST)
Course to be selected by the student along with the academic advisor and graduate program committee
Total Hours

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:
1. A minimum of 12 hours coursework must be at the 8000-level or higher.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

No program can contain more than 9 hours of courses.
degree curriculum

4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Operations Research Concentration (OPRS) - Non-Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 4613/6613

IE 6733 Linear Programming 3
IE 6773 Systems Simulation I 3

At least two Operations Research ISE courses 6
At least two non-Operations Research ISE courses 6
At least one course from Computer Science (CSE), Mathematics (MA), or Statistics (ST) 3
Courses to be selected by the student along with the academic advisor and graduate program committee 12
Total Hours 33

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student's area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students. IE 9000 does not apply to M.S. students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program
2. No program can contain more than 9 hours of courses that are required in the bachelor's degree curriculum
3. No program can contain more than 6 hours of that are required in the bachelor's degree.

The non-thesis Master of Science requires at least 30 credit hours.
Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 33 credit hours of coursework above the baccalaureate degree.

5-Year BS/MS Program

The 5-Year BS/MS Program enables a student to complete both a BS degree in their chosen engineering discipline and a MS degree in Industrial Engineering in approximately five years. The program has the following features.

- A student must apply for admission to the program no sooner than the completion of 75 hours or more of graded courses in their respective BS program. The criteria for admission assesses whether the applicant possesses those qualifications and interests that indicate to the department’s Graduate Committee that the applicant will be successful in the MS in Industrial Engineering program. The applicant must have an overall GPA of 3.5 to apply. Applications will be reviewed on 8/1, 12/1, and 5/1 each year, with students formally entering the program in the following Fall, Spring, and Summer semesters respectively.
- A student is classified as an undergraduate until all the requirements for the undergraduate degree are fulfilled, at which point the student is then classified as a graduate student upon successful application and admission in the MS in Industrial Engineering Program.
- A maximum of 9 hours of graduate courses taken after entering the program and prior to completing the BS can count toward both the BS and MS degrees. The Dean can approve exceptions, such as lab courses (4 credits), which may cause the total to exceed this limit. In order to count toward the MS degree, such courses must conform to other requirements for the MS degree. The program will follow procedures established by the Registrar for dual counting.
- If a student in the program enrolls in any graduate courses during a given term, then the maximum load of combined graduate and undergraduate courses is limited to 16 credits during that fall or spring semester, and 6 hours total in the summer semesters.
- Approval to enroll in graduate courses will be granted by the department’s graduate coordinator.
- Graduate courses at the 6000-level will count toward the BS degree similarly to the
coordinator.

- Graduate courses at the 6000-level will count toward the BS degree similarly to the corresponding 4000-level courses. Graduate courses at the 7000-level or above will count toward the Bachelor of Science degree as electives.
- During the senior year, the student will formally apply to the MS in Industrial Engineering degree, submitting all required documents.
- Upon earning the BS degree and being admitted to the MS in Industrial Engineering program, the student will complete the M.S. degree requirements in the normal manner.

An undergraduate student may opt out of the program at any time and complete only the undergraduate portion of the program. No additional dual counting will occur after opting out.

<table>
<thead>
<tr>
<th>CURRENT CURRICULUM OUTLINE</th>
<th>PROPOSED CURRICULUM OUTLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Required Courses</td>
<td>College Required Courses</td>
</tr>
<tr>
<td>Required Hours</td>
<td>Required Hours</td>
</tr>
<tr>
<td>n/a</td>
<td>N/a</td>
</tr>
<tr>
<td>Major Required Courses</td>
<td>Major Required Courses</td>
</tr>
<tr>
<td>Concentration Specific</td>
<td>Concentration Specific</td>
</tr>
<tr>
<td>Concentration 1. Courses—Human Factors And Ergonomics</td>
<td>Concentration 1. Courses—Human Factors And Ergonomics</td>
</tr>
<tr>
<td>Pre-Requisites (Foundational Courses)</td>
<td>Pre-Requisites (Foundational Courses)</td>
</tr>
<tr>
<td>MA 1713 Calculus I</td>
<td>MA 1713 Calculus I</td>
</tr>
<tr>
<td>MA 1723 Calculus II</td>
<td>MA 1723 Calculus II</td>
</tr>
<tr>
<td>MA 2733 Calculus III</td>
<td>MA 2733 Calculus III</td>
</tr>
<tr>
<td>MA 2743 Calculus IV</td>
<td>MA 2743 Calculus IV</td>
</tr>
<tr>
<td>IE 3123 Industrial Ergonomics</td>
<td>IE 3123 Industrial Ergonomics</td>
</tr>
<tr>
<td>IE 4613/6613 Engineering Statistics I</td>
<td>IE 4613/6613 Engineering Statistics I</td>
</tr>
<tr>
<td>Program Requirements (Thesis Option—30 hrs total)</td>
<td>Program Requirements (Thesis Option—30 hrs total)</td>
</tr>
<tr>
<td>IE 6773 Systems Simulation I</td>
<td>IE 6773 Systems Simulation I</td>
</tr>
<tr>
<td>IE 6623 Engineering Statistics II</td>
<td>IE 6623 Engineering Statistics II</td>
</tr>
<tr>
<td>IE 8000 Research/Thesis (6 hrs)</td>
<td>IE 8000 Research/Thesis (6 hrs)</td>
</tr>
<tr>
<td>At least 3 HFE courses</td>
<td>At least 3 HFE courses</td>
</tr>
<tr>
<td>At least 1 non-HFE IE course</td>
<td>At least 1 non-HFE IE course</td>
</tr>
<tr>
<td>At least 1 course from</td>
<td>At least 1 course from</td>
</tr>
</tbody>
</table>

An undergraduate student may opt out of the program at any time and complete only the undergraduate portion of the program. No additional dual counting will occur after opting out.

<table>
<thead>
<tr>
<th>Mathematics (MA) or Statistics (ST)</th>
<th>At least 1 course from a supporting area (Biological Engineering, Psychology, Kinesiology, Mechanical Engineering, Math/Statistics, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(non-Thesis Option—33 hrs total)</td>
<td>In addition to the above requirements, non-thesis students must also take one additional Math/Statistics course and one additional non-HFE IE graduate level course. For both thesis and non-thesis students, any remaining hours are electives to be selected in consultation with the student's graduate program committee. IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students.</td>
</tr>
</tbody>
</table>

**Concentration 2. Courses—Industrial Systems**

**Pre-Requisites (Foundational Courses)**
- MA 1713 Calculus I
- MA 1723 Calculus II
- MA 2733 Calculus III
- MA 2743 Calculus IV
- Computer programming proficiency
- IE 3123 Industrial Ergonomics
- IE 3913 Engineering Economy I
- IE 4333 Production Control Systems I
- IE 4613/6613 Engineering Statistics I

**Program Requirements (Thesis Option—30 hrs total)**
- IE 6773 Systems Simulation I
- IE 8000 Research/Thesis

All other courses to be selected by the student along with their academic advisor and graduate program committee.

<table>
<thead>
<tr>
<th>(MA) or Statistics (ST)</th>
<th>At least 1 course from a supporting area (Biological Engineering, Psychology, Kinesiology, Mechanical Engineering, Math/Statistics, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(non-Thesis Option—30 hrs total)</td>
<td>In addition to the above requirements, non-thesis students must also take one additional Math/Statistics course and one additional non-HFE IE graduate level course. For both thesis and non-thesis students, any remaining hours are electives to be selected in consultation with the student's graduate program committee. IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students.</td>
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</tbody>
</table>

**Concentration 2. Courses—Industrial Systems**

**Pre-Requisites (Foundational Courses)**
- MA 1713 Calculus I
- MA 1723 Calculus II
- MA 2733 Calculus III
- MA 2743 Calculus IV
- Computer programming proficiency
- IE 3123 Industrial Ergonomics
- IE 3913 Engineering Economy I
- IE 4333 Production Control Systems I
- IE 4613/6613 Engineering Statistics I

**Program Requirements (Thesis Option—30 hrs total)**
- IE 6773 Systems Simulation I
- IE 8000 Research/Thesis

All other courses to be selected by the student along with their academic advisor and graduate program committee.
| Concentration 3. Courses—Management Systems Engineering (MSE) | 30 for thesis  
|---|---|---|---|
| Pre-Requisites (Foundational Courses)  
BS in engineering from and ABET-accredited program or permission from the MSE Technical Committee  
IE 3913 Engineering Economy I  
IE 4613/6613 Engineering Statistics I |  | Pre-Requisites (Foundational Courses)  
BS in engineering from and ABET-accredited program or permission from the MSE Technical Committee  
IE 3913 Engineering Economy I  
IE 4613/6613 Engineering Statistics I |  |
| Program Requirements (Thesis Option—30 hrs total)  
IE 6513 Engineering Administration  
IE 6533 Project Management  
IE 6573 Process Improvement Engineering  
IE 8583 Enterprise Systems Engineering  
IE 8913 Engineering Economy II  
IE 8000 Research/Thesis |  | Program Requirements (Thesis Option—30 hrs total)  
IE 6513 Engineering Administration  
IE 6533 Project Management  
IE 6573 Process Improvement Engineering  
IE 8583 Enterprise Systems Engineering  
IE 8913 Engineering Economy II  
IE 8000 Research/Thesis |  |
| At least 2 non-MGT IE courses  
All other courses to be selected by the student along with their academic advisor and graduate program committee. |  | At least 2 non-MGT IE courses  
All other courses to be selected by the student along with their academic advisor and graduate program committee. |  |
| (non-Thesis Option—33 hrs total)  
Same as above. IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students. |  | (non-Thesis Option—30 hrs total)  
Same as above. IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students. |  |
| Concentration 4. Courses—Manufacturing Systems | 30 for thesis  
33 for non-thesis | Concentration 4. Courses—Manufacturing Systems |  |
| Pre-Requisites (Foundational Courses)  
BS in engineering from and ABET-accredited program or permission from the Manufacturing Systems Technical Committee |  | Pre-Requisites (Foundational Courses)  
BS in engineering from and ABET-accredited program or permission from the Manufacturing Systems Technical Committee |  |
<table>
<thead>
<tr>
<th>Computer Programming Proficiency</th>
<th>Computer Programming Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE 4333/6333 Production Control Systems I</td>
<td>IE 4333/6333 Production Control Systems I</td>
</tr>
<tr>
<td>IE 4613/6613 Engineering Statistics I</td>
<td>IE 4613/6613 Engineering Statistics I</td>
</tr>
<tr>
<td><strong>Program Requirements (Thesis Option—30 hrs total)</strong></td>
<td><strong>Program Requirements (Thesis Option—30 hrs total)</strong></td>
</tr>
<tr>
<td>IE 6653 Industrial Quality Control I</td>
<td>IE 6653 Industrial Quality Control I</td>
</tr>
<tr>
<td>IE 8333 Production Control Systems II</td>
<td>IE 8333 Production Control Systems II</td>
</tr>
<tr>
<td>IE 8353 Manufacturing Systems Modeling</td>
<td>IE 8353 Manufacturing Systems Modeling</td>
</tr>
<tr>
<td>IE 8000 Research/Thesis</td>
<td>IE 8000 Research/Thesis</td>
</tr>
<tr>
<td>At least 2 of the following</td>
<td>At least 2 of the following</td>
</tr>
<tr>
<td>IE 6193 Automotive Engineering</td>
<td>IE 6193 Automotive Engineering</td>
</tr>
<tr>
<td>IE 6353 Materials Handling</td>
<td>IE 6353 Materials Handling</td>
</tr>
<tr>
<td>IE 6373 Automation</td>
<td>IE 6373 Automation</td>
</tr>
<tr>
<td>IE 6923 Six Sigma Methods and Projects</td>
<td>IE 6923 Six Sigma Methods and Projects</td>
</tr>
<tr>
<td>At least 2 non-MFG IE courses</td>
<td>At least 2 non-MFG IE courses</td>
</tr>
<tr>
<td>All other courses to be selected by the student along with their academic advisor and graduate program committee.</td>
<td>All other courses to be selected by the student along with their academic advisor and graduate program committee.</td>
</tr>
<tr>
<td><strong>(non-Thesis Option—33 hrs total)</strong></td>
<td><strong>(non-Thesis Option—30 hrs total)</strong></td>
</tr>
<tr>
<td>Same as above IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students.</td>
<td>Same as above IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students.</td>
</tr>
</tbody>
</table>

| Pre-Requisites (Foundational Courses) | Pre-Requisites (Foundational Courses) |
| MA 1713 Calculus I | MA 1713 Calculus I |
| MA 1723 Calculus II | MA 1723 Calculus II |
| MA 2733 Calculus III | MA 2733 Calculus III |
| MA 2743 Calculus IV | MA 2743 Calculus IV |
| Computer programming proficiency | Computer programming proficiency |
| IE 4613/6613 Engineering Statistics I | IE 4613/6613 Engineering Statistics I |
| Program Requirements (Thesis) | Program Requirements (Thesis) |
| 30 for thesis | 30 for thesis/non-thesis |
| 33 for non-thesis | |
Option—30 hrs total)  
IE 6733 Linear Programming I  
IE 6773 Systems Simulation I  
IE 8000 Research/Thesis

At least 2 OR IE courses  
At least 2 non-IR IE courses  
At least 1 course from Computer Science (CSE), Mathematics (MA), or Statistics (ST).  
All other courses to be selected by the student along with their academic advisor and graduate program committee.

(non-Thesis Option—33 hrs total)  
Same as above. IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students.

Total Hours  
30 for thesis / 33 for non-thesis

Option—30 hrs total)  
IE 6733 Linear Programming I  
IE 6773 Systems Simulation I  
IE 8000 Research/Thesis

At least 2 OR IE courses  
At least 2 non-IR IE courses  
At least 1 course from Computer Science (CSE), Mathematics (MA), or Statistics (ST).  
All other courses to be selected by the student along with their academic advisor and graduate program committee.

(non-Thesis Option—30 hrs total)  
Same as above. IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students.

Total Hours  
30 for thesis/non-thesis

3. JUSTIFICATION AND STUDENT LEARNING OUTCOMES

This modification is being proposed to align our non-thesis program with national program trends, which requires the completion of 30 hours. This change will make the non-thesis MS degree more competitive with our peer and peer plus institutions. There are no modifications to learning outcomes with this degree modification, as the change resulted in a reduction in elective hours for the students under each concentration. The department’s learning outcomes and objectives remain:

<table>
<thead>
<tr>
<th>Expected Outcomes</th>
<th>Assessment Criteria/Procedures</th>
</tr>
</thead>
</table>
| 1. Students will demonstrate an advanced understanding of industrial and systems engineering principles. | 1a. Over the last three years, at least 80% of the students will score 80% or better on the principal course evaluation component (e.g., final exam, project, etc.) in one or more of the following courses:  
  1a.i IE 8163 - Macro Ergonomics  
  1a.ii IE 8333 - Production Control II  
  1a.iii IE 8583 - Enterprise Systems Engineering  
  1a.iv IE 8733 - Decision Theory  
  
  Note: These courses represent each of the four primary areas of study an MS student may focus on within the program. Therefore, each MS student will take at least one of these courses.  
  1b. At least 80% of the non-thesis graduates over the last three years will successfully pass their comprehensive exam on the first attempt. |
| 2. Students will demonstrate the ability to communicate technical material effectively in written and oral format. | 2a. At least 70% of MS thesis graduates over the last three years will have published one or more papers in peer-reviewed journals or in technical symposia/conferences.  
2b. At least 70% of MS thesis graduates over the last three years will have presented orally one or more papers at technical symposia or conferences.  
2c. At least 80% of graduates will average 4.0 out of 5.0 on defense rubrics for the following:  
2c.i MS non-thesis comprehensive defense rubric  
2c.ii MS thesis defense rubric  

| 3. Students will have acquired the necessary skills for a professional employment position in industrial and systems engineering or a related discipline, or gone on to pursue a doctorate. | 3a. At least 80% of the thesis-based graduates over the last three years will successfully defend their thesis on the first attempt.  
3b. At least 70% of the graduates over the last three years will have a professional position in industrial and systems engineering or a related discipline, or been accepted to a doctorate program. |

MSU currently provides the only Industrial and Systems Engineering degree program in the state, and as such there will be no duplication of this program at MSU or within the state of Mississippi. Therefore, this program and modification do meet the needs of the state to provide qualified engineers into the local, state, and national workforce.
August 8, 2017

RE: Reduction in MS non-thesis hours from 33 to 30

To whom it may concern:

We, the faculty of the Department of Industrial and Systems Engineering, provide our support for the reduction of MS non-thesis required hours from 33 to 30.

Kindest Regards,

John Usher, Department Head

Linkan Bian, Assistant Professor

Stanley Bullington, Professor

Reuben Burch, Assistant Professor

Ra’ed Jaradat, Assistant Professor

Junfeng Ma, Assistant Professor

Mohammad Marufuzzaman, Assistant Professor

Date: 8/8/17

Date: 8/8/17

Date: 8/8/17

Date: 8-6-17

Date: 8-10-17

Date: 8-8-17
Hugh Medal, Assistant Professor

Brian Smith, Assistant Professor

Lesley Strawderman, Associate Professor

8/8/17

8/8/2017

8/8/17

RECEIVED
SEP 14 2017
The Graduate School
APPROVAL FORM FOR

DEGREE PROGRAMS

MISSISSIPPI STATE UNIVERSITY

NOTE: This form is a cover sheet that must accompany the degree program change proposal. The actual proposal should be prepared in accordance with format requirements provided in the Guide and Format for Curriculum Proposals published by the UCCC. Both cover sheet and proposal should be submitted, along with all required copies, to UCCC, Garner Hall, Room 279, Mail Stop 9702.

College: Engineering Department: Industrial and Systems Engineering Mail Stop: 9542 E-mail: bullington@ise.msstate.edu

Contact Person: Stan Bullington Date: 6/27/2017

Nature of Change: Modification

Program will be offered at: Distance Learning (Campus 5)

Current Degree Program Name: Master of Science Effective Date: Fall 2017

Major: Industrial Engineering Concentration: All--Human Factors/Ergo, Mfg Sys, Ind Sys, Mgt Sys, Ops Research

New Degree Program Name: Select One

Major: Concentration:

Summary of Proposed Changes:

Reduction in MS non-thesis hours from 33 to 30.

Chair, College or School Curriculum Committee

Dean of College or School

Chair, University Committee on Courses and Curricula

Chair, Graduate Council (if applicable)

Chair, Deans Council

☑ SACS Letter Sent

RECEIVED
SEP 14 2017
The Graduate School
1. CATALOG DESCRIPTION
Please see table below for the current and proposed catalog descriptions.

2. 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.

<table>
<thead>
<tr>
<th>CURRENT Degree Description</th>
<th>PROPOSED Degree Description</th>
</tr>
</thead>
</table>
| Degree: Master of Science  
Major: Industrial Engineering  
Concentrations: Human Factors and Ergonomics,  
Industrial Systems, Management Systems Engineering,  
Manufacturing Systems, and Operations Research | Degree: Master of Science  
Major: Industrial Engineering  
Concentrations: Human Factors and Ergonomics,  
Industrial Systems, Management Systems Engineering,  
Manufacturing Systems, and Operations Research |
<p>| The Department of Industrial and Systems Engineering offers the Doctor of Philosophy in Industrial and Systems Engineering. In addition, the Department offers the Master of Science in Industrial Engineering with both thesis and non-thesis options. The M.S. (thesis option) is a research-oriented degree and serves to prepare students for positions in industry or government or for further graduate study in industrial and systems engineering or related areas. The M.S. (non-thesis option) is designed to prepare students for positions in business and industry that require a graduate education. | The Department of Industrial and Systems Engineering offers the Doctor of Philosophy in Industrial and Systems Engineering. In addition, the Department offers the Master of Science in Industrial Engineering with both thesis and non-thesis options. The M.S. (thesis option) is a research-oriented degree and serves to prepare students for positions in industry or government or for further graduate study in industrial and systems engineering or related areas. The M.S. (non-thesis option) is designed to prepare students for positions in business and industry that require a graduate education. |
| Concentrations offered at the master's level are:                                          | Concentrations offered at the master's level are:                                           |
| Human Factors and Ergonomics Concentration (HFE): This concentration is designed for students who wish to increase their understanding of Human Factors and Ergonomics (HFE). Students will be exposed to both a breadth and depth of HFE principles and practices including but not limited to physical ergonomics, cognitive ergonomics, and occupational safety and health. | Human Factors and Ergonomics Concentration (HFE): This concentration is designed for students who wish to increase their understanding of Human Factors and Ergonomics (HFE). Students will be exposed to both a breadth and depth of HFE principles and practices including but not limited to physical ergonomics, cognitive ergonomics, and occupational safety and health. |
| Industrial Systems Concentration (SYS): This concentration prepares students for general Industrial and Systems Engineering (ISE) work. It is designed to allow the student a high degree of flexibility in selecting a program that meets his/her needs. For example, the student might choose to specialize in one or more areas of ISE (e.g., quality engineering) or choose a very broad program covering several ISE fields. | Industrial Systems Concentration (SYS): This concentration prepares students for general Industrial and Systems Engineering (ISE) work. It is designed to allow the student a high degree of flexibility in selecting a program that meets his/her needs. For example, the student might choose to specialize in one or more areas of ISE (e.g., quality engineering) or choose a very broad program covering several ISE fields. |
| Management Systems Engineering Concentration (MGTS): This concentration is designed for students who wish to increase their understanding and capability in the areas of management systems | Management Systems Engineering Concentration (MGTS): This concentration is designed for students who wish to increase their understanding and capability in the areas of management systems |</p>
<table>
<thead>
<tr>
<th>section</th>
<th>text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering and General Engineering Management.</td>
<td>The philosophy behind this option is that students can be provided with knowledge that will enable them to apply an engineering approach to problems involved in the design and operation of management systems.</td>
</tr>
<tr>
<td>Manufacturing Systems Concentration (MFGS): This concentration is designed for students who wish to increase their understanding of the design, analysis and control of manufacturing systems and processes.</td>
<td>Manufacturing Systems Concentration (MFGS): This concentration is designed for students who wish to increase their understanding of the design, analysis and control of manufacturing systems and processes.</td>
</tr>
<tr>
<td>Operations Research Concentration (OPRS): This concentration is designed for students who wish to increase their understanding of and use of Operations Research (OR) skills for systems analysis and design.</td>
<td>Operations Research Concentration (OPRS): This concentration is designed for students who wish to increase their understanding of and use of Operations Research (OR) skills for systems analysis and design.</td>
</tr>
<tr>
<td>Admission Criteria: Typically, an entering M.S. student should have a grade point average of 3.00 out of 4.00 for the junior and senior years. Likewise, an entering Ph.D. student with an M.S. degree should have a 3.50 out of 4.00 grade point average on the M.S. work, while a Ph.D. student entering with only a B.S. degree is expected to have a 3.50 out of 4.00 on the last two years of the undergraduate program. A student with a lower GPA may still be eligible for admission based on outstanding qualifications in other areas. All entering students must submit GRE general-test scores. International students must have a minimum TOEFL score of 550 PBT (213 CBT or 80 iBT) or IELTS score of 6.5.</td>
<td>Admission Criteria: Typically, an entering M.S. student should have a grade point average of 3.00 out of 4.00 for the junior and senior years. Likewise, an entering Ph.D. student with an M.S. degree should have a 3.50 out of 4.00 grade point average on the M.S. work, while a Ph.D. student entering with only a B.S. degree is expected to have a 3.50 out of 4.00 on the last two years of the undergraduate program. A student with a lower GPA may still be eligible for admission based on outstanding qualifications in other areas. All entering students must submit GRE general-test scores. International students must have a minimum TOEFL score of 550 PBT (213 CBT or 80 iBT) or IELTS score of 6.5.</td>
</tr>
<tr>
<td>The department reviews completed applications four times a year: February 15, May 15, August 15, and November 15. Incomplete or not fully processed applications will be reviewed during the next cycle.</td>
<td>The department reviews completed applications four times a year: February 15, May 15, August 15, and November 15. Incomplete or not fully processed applications will be reviewed during the next cycle.</td>
</tr>
<tr>
<td>Provisional Admission: If a student does not fully meet the admission requirements of the program, it may be possible for that student to be provisionally admitted. If provisionally admitted, the student must attain a 3.00 GPA on the first 9 hours of graduate courses at Mississippi State University after admission to the program. 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 GPA is not attained, the student will be dismissed from the graduate program.</td>
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</tr>
<tr>
<td>Academic Performance: In addition to the criteria defined in the current Bulletin of the Graduate School, unsatisfactory performance in the graduate program in Industrial and Systems Engineering is defined as any</td>
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</tr>
</tbody>
</table>
of the following:

- failure to maintain a 3.00 average in the M.S. program or 3.30 in the Ph.D. program,
- failure of the qualifying exam (Ph.D. students only),
- failure of the preliminary exam (Ph.D. students only);
- failure of the comprehensive final exam (M.S. non-thesis option only),
- unsatisfactory evaluation of thesis or dissertation, or
- a failure of the required component of the program of study.

Any one of these will constitute the basis for review for possible dismissal. If the students drops six or more quality points below the required average (3.00 for M.S. or 3.30 for Ph.D.), the graduate coordinator will review the record along with the student’s graduate committee and will recommend a final course of action, which will be immediate dismissal or the establishment of a probationary period in which corrective action must take place.

While on probation, the student is not eligible to receive an assistantship and is required to raise his/her cumulative GPA to 3.00 for M.S. or 3.30 for Ph.D. by the end of the following semester of enrollment. During that semester, the student must enroll in 9 credit hours of coursework; Directed Individual Study courses are excluded.

In case of a dismissal from the graduate program, a student may appeal his/her academic dismissal according to the following procedure:

- Within four weeks of being notified of the official dismissal, the student must present the request and related explanation in writing to the graduate coordinator. The graduate coordinator will review the appeal with the appropriate departmental committee and render a recommendation.
- If the appeal at the departmental level is unsuccessful, a student may then appeal to the Associate Dean for Research and Graduate Studies in the college.
- If the appeal at the college level is unsuccessful, the student may then appeal to the Office of the Provost.

<table>
<thead>
<tr>
<th>of the following:</th>
<th>of the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>failure to maintain a 3.00 average in the M.S. program or 3.30 in the Ph.D.</td>
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</tr>
<tr>
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</tr>
<tr>
<td>failure of the qualifying exam (Ph.D. students only),</td>
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</tr>
<tr>
<td>failure of the preliminary exam (Ph.D. students only);</td>
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</tr>
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</tr>
<tr>
<td>unsatisfactory evaluation of thesis or dissertation, or</td>
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</tr>
<tr>
<td>a failure of the required component of the program of study.</td>
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Any one of these will constitute the basis for review for possible dismissal. If the students drops six or more quality points below the required average (3.00 for M.S. or 3.30 for Ph.D.), the graduate coordinator will review the record along with the student’s graduate committee and will recommend a final course of action, which will be immediate dismissal or the establishment of a probationary period in which corrective action must take place.

While on probation, the student is not eligible to receive an assistantship and is required to raise his/her cumulative GPA to 3.00 for M.S. or 3.30 for Ph.D. by the end of the following semester of enrollment. During that semester, the student must enroll in 9 credit hours of coursework; Directed Individual Study courses are excluded.

In case of a dismissal from the graduate program, a student may appeal his/her academic dismissal according to the following procedure:

- Within four weeks of being notified of the official dismissal, the student must present the request and related explanation in writing to the graduate coordinator. The graduate coordinator will review the appeal with the appropriate departmental committee and render a recommendation.
- If the appeal at the departmental level is unsuccessful, a student may then appeal to the Associate Dean for Research and Graduate Studies in the college.
- If the appeal at the college level is unsuccessful, the student may then appeal to the Office of the Provost.
Doctor of Philosophy in Industrial & Systems Engineering

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Industrial Engineering courses</td>
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</tr>
<tr>
<td>Courses in discipline other than</td>
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<tr>
<td>Industrial Engineering</td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>6</td>
</tr>
<tr>
<td>Statistics II (or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>Systems</td>
<td></td>
</tr>
<tr>
<td>Simulation I (or equivalent)</td>
<td>3</td>
</tr>
<tr>
<td>Additional Graduate-level coursework</td>
<td>6</td>
</tr>
<tr>
<td>Research</td>
<td>20</td>
</tr>
<tr>
<td>Total Hours</td>
<td>68</td>
</tr>
</tbody>
</table>

A preliminary examination, a dissertation, and an oral examination in defense of the dissertation are required.

Additional requirements are:

1. No ISE graduate student may list **ST 8114** or **IE 6613** on his/her graduate program
2. No program can contain more than 9 hours of courses that are required in the bachelor's degree curriculum
3. No program can contain more than 6 hours of Directed Individual Study (**IE 7000**).

Doctoral students must complete at least 48 hours of coursework beyond the B.S. level.

Master of Science in Industrial Engineering with Human Factors and Ergonomics Concentration (HFE) - Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- IE 3123
- IE 4613/6613

**IE 6773** Systems Simulation I 3
**IE 6623** Engineering Statistics II 3
At least 3 HFE ISE courses 9

Doctor of Philosophy in Industrial & Systems Engineering

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Industrial Engineering courses</td>
<td>30</td>
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<td></td>
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<tr>
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<td>Additional Graduate-level coursework</td>
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1. No ISE graduate student may list **ST 8114** or **IE 6613** on his/her graduate program
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
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Doctoral students must complete at least 48 hours of coursework beyond the B.S. level.

Master of Science in Industrial Engineering with Human Factors and Ergonomics Concentration (HFE) - Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- IE 3123
- IE 4613/6613

**IE 6773** Systems Simulation I 3
**IE 6623** Engineering Statistics II 3
At least 3 HFE ISE courses 9
IE 8000  Thesis Research/ Thesis in Industrial Engineering  6
At least one non-HFE ISE course  3
At least one course from Mathematics (MA) or Statistics (ST)  3
At least one course from a supporting area (Biological Engineering [ABE], Psychology [PSY], Kinesiology [K]), Mechanical Engineering [ME], Mathematics [MA], Statistics [ST], etc.)  3
Total Hours  30

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours coursework must be at the 8000-level or higher.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Human Factors and Ergonomics Concentration (HFE) - Non-Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- IE 3123
- IE 4613/6613

IE 6773 Systems Simulation I  3
IE 6623 Engineering Statistics II  3
At least three HFE ISE courses  9
At least two non-HFE ISE courses  6
At least two courses from Mathematics (MA) or Statistics (ST)  6

IE 6773 Systems Simulation I  3
IE 6623 Engineering Statistics II  3
At least three HFE ISE courses  9
At least two non-HFE ISE courses  6
At least two courses from Mathematics (MA) or Statistics (ST)  6

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At least one course from a supporting area (Biological Engineering [ABE], Psychology [PSY], Kinesiology [KL], Mechanical Engineering [ME], Mathematics [MA], Statistics [ST], etc.)
Course to be selected by the academic advisor and graduate program committee
Total Hours

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student's area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
2. No program can contain more than 9 hours of courses that are required in the bachelor's degree curriculum.
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 33 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Industrial Systems Concentration (SYS) - Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 3123
- IE 3913
- IE 4333
- IE 4613/6613

IE 6773 Systems Simulation I 3
IE 8000 Thesis Research/ Thesis in Industrial Engineering 6
All other courses to be selected by the student 21

At least one course from a supporting area (Biological Engineering [ABE], Psychology [PSY], Kinesiology [KL], Mechanical Engineering [ME], Mathematics [MA], Statistics [ST], etc.)

**Total Hours** 30

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student's area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
2. No program can contain more than 9 hours of courses that are required in the bachelor's degree curriculum.
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 30 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Industrial Systems Concentration (SYS) - Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 3123
- IE 3913
- IE 4333
- IE 4613/6613

IE 6773 Systems Simulation I 3
IE 8000 Thesis Research/ Thesis in Industrial Engineering 6
All other courses to be selected by the student along with the academic advisor and graduate 21
along with the academic advisor and graduate program committee
Total Hours 30

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours coursework must be at the 8000-level or higher.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program
3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Industrial Systems Concentration (SYS) - Non-Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 3123
- IE 3913
- IE 4333
- IE 4613/6613

At least 15 hours of 8000-level courses selected by the student along with the academic advisor and grade program committee.
Other courses to be selected by the student along with the academic advisor and grade program committee.
Total Hours 33

program committee
Total Hours 30
A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours coursework must be at the 8000-level or higher.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program
3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Industrial Systems Concentration (SYS) - Non-Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 3123
- IE 3913
- IE 4333
- IE 4613/6613

At least 15 hours of 8000-level courses selected by the student along with the academic advisor and grade program committee.
Other courses to be selected by the student along with the academic advisor and grade program committee.
Total Hours 30
A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above.
A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student’s area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 30 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Management Systems Engineering Concentration (MGTS) - Thesis

Prerequisites (foundational courses) are:

- B.S. in engineering from an ABET-accredited program or permission from the MSE Technical Committee
- IE 3913
- IE 4613/6613

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>IE 6513</td>
<td>Engineering Administration</td>
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</tr>
<tr>
<td>IE 6533</td>
<td>Project Management</td>
<td>3</td>
</tr>
<tr>
<td>IE 6573</td>
<td>Process Improvement</td>
<td>3</td>
</tr>
<tr>
<td>IE 6573</td>
<td>Engineering</td>
<td>3</td>
</tr>
<tr>
<td>IE 8583</td>
<td>Enterprise Systems Engineering</td>
<td>3</td>
</tr>
<tr>
<td>IE 8913</td>
<td>Engineering Economy II</td>
<td>3</td>
</tr>
<tr>
<td>IE 8000</td>
<td>Thesis Research/Thesis in Industrial Engineering</td>
<td>6</td>
</tr>
</tbody>
</table>

At least two non-MSE ISE courses
Course to be selected by the student along with academic advisor and graduate program committee
Total Hours 30

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 30 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Management Systems Engineering Concentration (MGTS) - Thesis

Prerequisites (foundational courses) are:

- B.S. in engineering from an ABET-accredited program or permission from the MSE Technical Committee
- IE 3913
- IE 4613/6613

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<td>Thesis Research/Thesis in Industrial Engineering</td>
<td>6</td>
</tr>
</tbody>
</table>

At least two non-MSE ISE courses
Course to be selected by the student along with academic advisor and graduate program committee
Total Hours 30

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:
A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours at the 8000-level is required.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program
3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Management Systems Engineering Concentration (MGTS) - Non-Thesis

Prerequisites (foundational courses) are:

- B.S. in engineering from an ABET-accredited program or permission from the MSE Technical Committee
- IE 3913
- IE 4613/6613

IE 6513 Engineering Administration 3
IE 6533 Project Management 3
IE 6573 Process Improvement 3
IE 8583 Enterprise Systems Engineering 3
IE 8913 Engineering Economy II 3
At least two non-MSE ISE courses 6
Other courses to be selected by the student along with the academic advisor and graduate program committee 12
Total Hours 33

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student's area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students.

Additional requirements are:

1. A minimum of 12 hours at the 8000-level is required.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program
3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).
student’s area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 33 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Manufacturing Systems Concentration (MFGS) - Thesis

Prerequisites (foundational courses) are:

- B.S. in engineering from an ABET-accredited program or permission from the Manufacturing Systems Technical Committee
- Computer programming proficiency
- IE 4333/6333
- IE 4613/6613
- IE 6653  Industrial Quality Control  3
- IE 8333  Production Control Systems II  3
- IE 8353  Manufacturing Systems  3
- IE 8000  Modeling  3
- IE 8000  Thesis Research/Thesis in Industrial Engineering  6

At least two Manufacturing Systems ISE courses  6
At least two non-Manufacturing Systems ISE courses  6
Course to be selected by the student along with the academic advisor and graduate program committee  3
Total Hours  30

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours coursework must be at the 8000-level or higher.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program
3. No program can contain more than 9 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 30 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Manufacturing Systems Concentration (MFGS) - Thesis

Prerequisites (foundational courses) are:

- B.S. in engineering from an ABET-accredited program or permission from the Manufacturing Systems Technical Committee
- Computer programming proficiency
- IE 4333/6333
- IE 4613/6613
- IE 6653  Industrial Quality Control  3
- IE 8333  Production Control Systems II  3
- IE 8353  Manufacturing Systems  3
- IE 8000  Modeling  3
- IE 8000  Thesis Research/Thesis in Industrial Engineering  6

At least two Manufacturing Systems ISE courses  6
At least two non-Manufacturing Systems ISE courses  6
Course to be selected by the student along with the academic advisor and graduate program committee  3
Total Hours  30

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours coursework must be at the 8000-level or higher.
2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program
3. No program can contain more than 9 hours of
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2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Manufacturing Systems Concentration (MFGS) – Non-Thesis

Prerequisites (foundational courses) are:

- B.S. in engineering from an ABET-accredited program or permission from the Manufacturing Systems Technical Committee
- Computer programming proficiency
- IE 4333/6333
- IE 4613/6613

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<td>3</td>
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<td>Production Control Systems II</td>
<td>3</td>
</tr>
<tr>
<td>IE 8353</td>
<td>Manufacturing Systems Modeling</td>
<td>3</td>
</tr>
</tbody>
</table>

At least two Manufacturing Systems ISE courses 6
At least two non-Manufacturing Systems ISE courses 6
Other courses to be selected by the student along with the academic advisor and graduate program committee 9
Total Hours 30

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student’s area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students. IE 9000 does not apply to M.S. students.

Additional requirements are:

1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.

2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.

3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 33 credit hours of coursework above the baccalaureate degree.

Master of Science in Industrial Engineering with Operations Research Concentration (OPRS) - Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 4613/6613

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Description</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>IE 6733</td>
<td>Linear Programming</td>
<td>3</td>
</tr>
<tr>
<td>IE 6773</td>
<td>Systems Simulation I</td>
<td>3</td>
</tr>
<tr>
<td>IE 8000</td>
<td>Thesis Research/Thesis in Industrial Engineering</td>
<td>6</td>
</tr>
</tbody>
</table>

At least two OR ISE courses 6
At least two non-OR ISE courses 6
At least one course from Computer Science (CSE), Mathematics (MA), or Statistics (ST) 3
Course to be selected by the student along with the academic advisor and graduate program committee 3
Total Hours 30

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours coursework must be at the 8000-level or higher.

2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.

3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.

4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering with Operations Research Concentration (OPRS) - Thesis

Prerequisites (foundational courses) are:

- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 4613/6613

IE 6733 Linear Programming 3
IE 6773 Systems Simulation I 3
IE 8000 Thesis Research/Thesis in Industrial Engineering 6

At least two OR ISE courses 6
At least two non-OR ISE courses 6
At least one course from Computer Science (CSE), Mathematics (MA), or Statistics (ST) 3
Course to be selected by the student along with the academic advisor and graduate program committee 3
Total Hours 30

A thesis and an oral comprehensive examination in defense of the thesis are required.

Additional requirements are:

1. A minimum of 12 hours coursework must be at the 8000-level or higher.

2. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.

3. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.

4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).
degree curriculum
4. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The thesis-option Master of Science in Industrial Engineering requires at least 24 credit hours of coursework above the baccalaureate degree. IE 9000 does not apply to M.S. students.

Master of Science in Industrial Engineering with Operations Research Concentration (OPRS) - Non-Thesis

Prerequisites (foundational courses) are:
- MA 1713
- MA 1723
- MA 2733
- MA 2743
- Computer programming proficiency
- IE 4613/6613

IE 6733 Linear Programming 3
IE 6773 Systems Simulation I 3
At least two Operations Research ISE courses 6
At least two non-Operations Research ISE courses 6
At least one course (from Computer Science (CSE), Mathematics (MA), or Statistics (ST)) 3
Courses to be selected by the student along with the academic advisor and graduate program committee 12
Total Hours 33

A written and oral comprehensive final exam on the coursework. At least 15 hours for the M.S. non-thesis degree must be from 8000-level courses or above. The specific courses required depend upon the student’s area of concentration. IE 8000 Research/Thesis does not apply to non-thesis students. IE 9000 does not apply to M.S. students.

Additional requirements are:
1. No ISE graduate student may list ST 8114 or IE 6613 on his/her graduate program.
2. No program can contain more than 9 hours of courses that are required in the bachelor’s degree curriculum.
3. No program can contain more than 6 hours of Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 30 credit hours of coursework above the baccalaureate degree.
Directed Individual Study (IE 7000).

The non-thesis Master of Science requires at least 33 credit hours of coursework above the baccalaureate degree.

5-Year BS/MS Program

The 5-Year BS/MS Program enables a student to complete both a BS degree in their chosen engineering discipline and a MS degree in Industrial Engineering in approximately five years. The program has the following features.

- A student must apply for admission to the program no sooner than the completion of 75 hours or more of graded courses in their respective BS program. The criteria for admission assesses whether the applicant possesses those qualifications and interests that indicate to the department’s Graduate Committee that the applicant will be successful in the MS in Industrial Engineering program. The applicant must have an overall GPA of 3.5 to apply. Applications will be reviewed on 8/1, 12/1, and 5/1 each year, with students formally entering the program in the following Fall, Spring, and Summer semesters respectively.
- A student is classified as an undergraduate until all the requirements for the undergraduate degree are fulfilled, at which point the student is then classified as a graduate student upon successful application and admission in the MS in Industrial Engineering Program.
- A maximum of 9 hours of graduate courses taken after entering the program and prior to completing the BS can count toward both the BS and MS degrees. The Dean can approve exceptions, such as lab courses (4 credits), which may cause the total to exceed this limit. In order to count toward the MS degree, such courses must conform to other requirements for the MS degree. The program will follow procedures established by the Registrar for dual counting.
- If a student in the program enrolls in any graduate courses during a given term, then the maximum load of combined graduate and undergraduate courses is limited to 16 credits during that fall or spring semester, and 6 hours total in the summer semesters.
- Approval to enroll in graduate courses will be granted by the department’s graduate coordinator.
- Graduate courses at the 6000-level will count toward the BS degree similarly to the corresponding 4000-level courses. Graduate courses at the 7000-level or above will count toward the Bachelor of Science degree as
Graduate courses at the 6000-level will count toward the BS degree similarly to the corresponding 4000-level courses. Graduate courses at the 7000-level or above will count toward the Bachelor of Science degree as electives.

- During the senior year, the student will formally apply to the MS in Industrial Engineering degree, submitting all required documents.
- Upon earning the BS degree and being admitted to the MS in Industrial Engineering program, the student will complete the M.S. degree requirements in the normal manner.

An undergraduate student may opt out of the program at any time and complete only the undergraduate portion of the program. No additional dual counting will occur after opting out.

<table>
<thead>
<tr>
<th>CURRENT CURRICULUM OUTLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Required Courses</td>
</tr>
<tr>
<td>n/a</td>
</tr>
<tr>
<td>Major Required Courses</td>
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<tr>
<td>Concentration Specific</td>
</tr>
<tr>
<td>Concentration 1. Courses—Human Factors And Ergonomics</td>
</tr>
<tr>
<td>Pre-Requisites (Foundational Courses)</td>
</tr>
<tr>
<td>MA 1713 Calculus I</td>
</tr>
<tr>
<td>MA 1723 Calculus II</td>
</tr>
<tr>
<td>MA 2733 Calculus III</td>
</tr>
<tr>
<td>MA 2743 Calculus IV</td>
</tr>
<tr>
<td>IE 3123 Industrial Ergonomics</td>
</tr>
<tr>
<td>IE 4613/6613 Engineering</td>
</tr>
<tr>
<td>Statistics I</td>
</tr>
<tr>
<td>Program Requirements (Thesis Option—30 hrs total)</td>
</tr>
<tr>
<td>IE 6773 Systems Simulation I</td>
</tr>
<tr>
<td>IE 6623 Engineering Statistics II</td>
</tr>
<tr>
<td>IE 8000 Research/Thesis (6 hrs)</td>
</tr>
<tr>
<td>At least 3 HFE courses</td>
</tr>
<tr>
<td>At least 1 non-HFE IE course</td>
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<tr>
<td>At least 1 course from</td>
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<table>
<thead>
<tr>
<th>PROPOSED CURRICULUM OUTLINE</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>At least 1 non-HFE IE course</td>
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<tr>
<td>At least 1 course from Mathematics</td>
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</tr>
<tr>
<td>IE 3913 Engineering Economy I</td>
</tr>
<tr>
<td>IE 4333 Production Control Systems I</td>
</tr>
<tr>
<td>IE 4613/6613 Engineering Statistics I</td>
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<td>Program Requirements (Thesis Option—30 hrs total)</td>
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<td>IE 6773 Systems Simulation I</td>
</tr>
<tr>
<td>IE 8000 Research/Thesis</td>
</tr>
<tr>
<td>All other courses to be selected by the student along with their academic advisor and graduate program committee.</td>
</tr>
<tr>
<td><strong>Concentration 3. Courses—Management Systems Engineering (MSE)</strong></td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>Pre-Requisites (Foundational Courses)</strong></td>
</tr>
<tr>
<td>BS in engineering from and ABET-accredited program or permission from the MSE Technical Committee IE 3913 Engineering Economy I IE 4613/6613 Engineering Statistics I</td>
</tr>
<tr>
<td><strong>Program Requirements (Thesis Option—30 hrs total)</strong></td>
</tr>
<tr>
<td>IE 6513 Engineering Administration IE 6533 Project Management IE 6573 Process Improvement Engineering IE 8583 Enterprise Systems Engineering IE 8913 Engineering Economy II IE 8000 Research/Thesis</td>
</tr>
<tr>
<td><strong>Pre-Requisites (Foundational Courses)</strong></td>
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<tr>
<td>BS in engineering from and ABET-accredited program or permission from the Manufacturing Systems Technical Committee</td>
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SEP 14 2017

The Graduate School
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<thead>
<tr>
<th><strong>Computer Programming Proficiency</strong></th>
<th><strong>Computer Programming Proficiency</strong></th>
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<tr>
<td>IE 4333/6333 Production Control Systems I</td>
<td>IE 4333/6333 Production Control Systems I</td>
</tr>
<tr>
<td>IE 4613/6613 Engineering Statistics I</td>
<td>IE 4613/6613 Engineering Statistics I</td>
</tr>
</tbody>
</table>

**Program Requirements (Thesis Option—30 hrs total)**
IE 6653 Industrial Quality Control I
IE 8333 Production Control Systems II
IE 8353 Manufacturing Systems Modeling
IE 8000 Research/Thesis

At least 2 of the following
IE 6193 Automotive Engineering
IE 6353 Materials Handling
IE 6373 Automation
IE 6923 Six Sigma Methods and Projects

At least 2 non-MFG IE courses

All other courses to be selected by the student along with their academic advisor and graduate program committee.

**(non-Thesis Option—33 hrs total)**
Same as above IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students.

<table>
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<td>Computer programming proficiency</td>
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<tr>
<td>IE 4613/6613 Engineering Statistics I</td>
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Program Requirements (Thesis)

**Program Requirements (Thesis Option—30 hrs total)**
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IE 8333 Production Control Systems II
IE 8353 Manufacturing Systems Modeling
IE 8000 Research/Thesis

At least 2 of the following
IE 6193 Automotive Engineering
IE 6353 Materials Handling
IE 6373 Automation
IE 6923 Six Sigma Methods and Projects

At least 2 non-MFG IE courses

All other courses to be selected by the student along with their academic advisor and graduate program committee.

**(non-Thesis Option—30 hrs total)**
Same as above IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students.
Option—30 hrs total
IE 6733 Linear Programming I
IE 6773 Systems Simulation I
IE 8000 Research/Thesis

At least 2 OR IE courses
At least 2 non-IR IE courses
At least 1 course from Computer Science (CSE), Mathematics (MA), or Statistics (ST).
All other courses to be selected by the student along with their academic advisor and graduate program committee.

(non-Thesis Option—33 hrs total)
Same as above. IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students.

Total Hours 30 for thesis / 33 for non-thesis

Option—30 hrs total
IE 6733 Linear Programming I
IE 6773 Systems Simulation I
IE 8000 Research/Thesis

At least 2 OR IE courses
At least 2 non-IR IE courses
At least 1 course from Computer Science (CSE), Mathematics (MA), or Statistics (ST).
All other courses to be selected by the student along with their academic advisor and graduate program committee.

(non-Thesis Option—30 hrs total)
Same as above. IE 8000 Research/Thesis and IE 9000 Research/Dissertation does not apply to non-thesis students.

Total Hours 30 for thesis/non-thesis

3. JUSTIFICATION AND STUDENT LEARNING OUTCOMES
This modification is being proposed to align our non-thesis program with national program trends, which requires the completion of 30 hours. This change will make the non-thesis MS degree more competitive with our peer and peer plus institutions. There are no modifications to learning outcomes with this degree modification, as the change resulted in a reduction in elective hours for the students under each concentration. The department’s learning outcomes and objectives remain:

<table>
<thead>
<tr>
<th>Expected Outcomes</th>
<th>Assessment Criteria/Procedures</th>
</tr>
</thead>
</table>
| 1. Students will demonstrate an advanced understanding of industrial and systems engineering principles. | 1a. Over the last three years, at least 80% of the students will score 80% or better on the principal course evaluation component (e.g., final exam, project, etc.) in one or more of the following courses:  
1a.i IE 8163 - Macro Ergonomics  
1a.ii IE 8333 - Production Control II  
1a.iii IE 8583 - Enterprise Systems Engineering  
1a.iv IE 8733 - Decision Theory  
Note: These courses represent each of the four primary areas of study an MS student may focus on within the program. Therefore, each MS student will take at least one of these courses. |
|                   | 1b. At least 80% of the non-thesis graduates over the last three years will successfully pass their comprehensive exam on the first attempt. |
| 2. Students will demonstrate the ability to communicate technical material effectively in written and oral format. | 2a. At least 70% of MS thesis graduates over the last three years will have published one or more papers in peer-reviewed journals or in technical symposia/conferences.  
2b. At least 70% of MS thesis graduates over the last three years will have presented orally one or more papers at technical symposia or conferences.  
2c. At least 80% of graduates will average 4.0 out of 5.0 on defense rubrics for the following:  
  2c.i MS non-thesis comprehensive defense rubric  
  2c.ii MS thesis defense rubric |
|---|---|
| 3. Students will have acquired the necessary skills for a professional employment position in industrial and systems engineering or a related discipline, or gone on to pursue a doctorate. | 3a. At least 80% of the thesis-based graduates over the last three years will successfully defend their thesis on the first attempt.  
3b. At least 70% of the graduates over the last three years will have a professional position in industrial and systems engineering or a related discipline, or been accepted to a doctorate program. |

MSU currently provides the only Industrial and Systems Engineering degree program in the state, and as such there will be no duplication of this program at MSU or within the state of Mississippi. Therefore, this program and modification do meet the needs of the state to provide qualified engineers into the local, state, and national workforce.
August 8, 2017

RE: Reduction in MS non-thesis hours from 33 to 30

To whom it may concern:

We, the faculty of the Department of Industrial and Systems Engineering, provide our support for the reduction of MS non-thesis required hours from 33 to 30.

Kindest Regards,

John Usher, Department Head

Linkan Bian, Assistant Professor

Stanley Bullington, Professor

Reuben Burch, Assistant Professor

Ra'ed Jaradat, Assistant Professor

Junfeng Ma, Assistant Professor

Mohammad Marufuzzaman, Assistant Professor

Date

Date

Date

Date

Date

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: Agriculture and Life Sciences  Department: Agricultural Economics

Contact Person: Dr. Angelica Williams  Mail Stop: 9755  E-mail: asw402@msstate.edu
Nature of Change: Addition of Distance Program to Existing Program  Date Initiated: 6/9/2017
Effective Date: Spring 2018
Degree to be offered at: Campus 5

Current Degree Program Name: Master of Agribusiness Management

Major: Agribusiness  Concentration: None

New Degree Program Name: Master of Agribusiness Management

Major: Agribusiness  Concentration: None

Summary of Proposed Changes: Add Distance Learning to the MABM Program

Approved:  

Date:

8/10/17

8.24.17

8/25/17

9/25/17

Chair, Graduate Council (if applicable)
Appendix 10: Report of Intent to Offer an Existing Degree Program by Distance Learning

Institution: Mississippi State University

Date of Initial Program Approval: August 1, 1990
Date of Implementation: 01/08/2018 (Spring)
Cost of Implementation: $24,400

Program Title as Appears on Academic Program Inventory, Diploma, and Transcript: Master of Agribusiness Management
Six Digit CIP Code: 01.0101

Degree(s) to be Awarded: Master of Agribusiness
Credit Hour Requirements: 31 hours

Percentage of Program Completed by Distance Learning: 100%
Percentage of Program Requiring Campus Visit: 0%

Will students be allowed to mix on-campus and distance learning courses within this program? No

Will this program require separate admission from those offered on-campus? Yes

Will this program have different fees or tuition rates from those offered on-campus? Yes

Responsible Academic Unit(s): Agricultural Economics
Institutional Contact: Dr. Angelica S. Williams

Number of Students Expected to Enroll in First Six Years:

<table>
<thead>
<tr>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
<th>Year Six</th>
<th>Total</th>
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<tr>
<td>8</td>
<td>12</td>
<td>14</td>
<td>16</td>
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Number of Graduates Expected in First Six Years:

<table>
<thead>
<tr>
<th>Year One</th>
<th>Year Two</th>
<th>Year Three</th>
<th>Year Four</th>
<th>Year Five</th>
<th>Year Six</th>
<th>Total</th>
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<tbody>
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<td>12</td>
<td>18</td>
<td>20</td>
<td>20</td>
<td>76</td>
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</tbody>
</table>

Program Summary: The Master of Agribusiness Management (MABM) program prepares student for a dynamic and rewarding Agribusiness career. The program curriculum is based on a total 31 credit hours, with at least 16 hours from the Department of Agricultural Economics, including a required internship, and 15 hours from the College of Business.

Chief Academic Officer Signature

Date

Institutional Executive Officer Signature

Date
Proposal for Approval of an Existing Degree Program to be offered through Distance Learning
Master of Agribusiness Management (MABM)

1. CATALOG DESCRIPTION

The Master of Agribusiness Management (M.A.B.M.) program is an interdisciplinary degree between the College of Agriculture and Life Sciences and the College of Business and is administered by the Department of Agricultural Economics. The program is designed to prepare students for careers in the exciting world of food and agribusiness management. Students take coursework that includes core MBA courses in accounting, finance, and marketing along with graduate courses in agricultural economics. The MABM is a highly marketable degree due to the combination of general business training along with courses that focus on unique challenges facing food and agribusiness firms.

2. CURRICULUM OUTLINE

<table>
<thead>
<tr>
<th>Current Program</th>
<th>Proposed Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree: Master of Agribusiness Management (MABM)</td>
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</tr>
<tr>
<td>The Master of Agribusiness Management (M.A.B.M.) degree requires 31 credit hours, which includes a required internship. MABM students must also successfully complete a comprehensive oral examination. Research assistantships are not available for students in the MABM program.</td>
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<td>Prerequisites:</td>
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</tr>
<tr>
<td>MGT 3114 – Principles of Management &amp; Production or equivalent.</td>
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</tr>
<tr>
<td>EC 3123 – Intermediate Microeconomics or equivalent.</td>
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<table>
<thead>
<tr>
<th>Current Curriculum Outline</th>
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<tr>
<td>Required Courses</td>
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<tr>
<td><strong>College of Business:</strong></td>
<td><strong>College of Business:</strong></td>
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<tr>
<td>BL 8113 Law, Business, Ethics, and Dispute Resolution**</td>
<td>3 hours</td>
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<tr>
<td>MGT 8113 Leadership Skills for Managerial Behavior**</td>
<td>3 hours</td>
</tr>
<tr>
<td>ACC 8213 Financial Statement and Management Accounting Report Analysis for Decision Making**</td>
<td>3 hours</td>
</tr>
<tr>
<td>MKT 8153 Strategic Marketing Management**</td>
<td>3 hours</td>
</tr>
<tr>
<td>FIN 8113 Corporate Finance**</td>
<td>3 hours</td>
</tr>
<tr>
<td><strong>Department Agricultural Economics:</strong></td>
<td><strong>Department Agricultural Economics:</strong></td>
</tr>
<tr>
<td>AEC 6113 Agribusiness Firm Management**</td>
<td>3 hours</td>
</tr>
<tr>
<td>AEC 6223 Applied Quantitative Analysis in Agricultural Economics**</td>
<td>3 hours</td>
</tr>
</tbody>
</table>
AEC 6213 Ag Finance I**
AEC 6530 Agribusiness Management Internship**
  + 1 Elective Agricultural Economics
Courses to choose from:
AEC 6133 Analysis of Food Markets
AEC 6233 Environmental Economics
AEC 6413 Public Problems of Ag

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEC 6213 Ag Finance I**</td>
<td>3 hours</td>
</tr>
<tr>
<td>AEC 6530 Agribusiness Management Internship**</td>
<td>4 hours</td>
</tr>
<tr>
<td>AEC 6623 Global Marketing of Agricultural Products **</td>
<td>3 hours</td>
</tr>
</tbody>
</table>

**Total Credit Hours:** 31 hours

**Classes offered or soon to be offered by Distance Learning (Campus 5)**

3. JUSTIFICATION FOR DISTANCE LEARNING OFFERING

Attending to the need of professionals that want to pursue a dynamic Agribusiness career, the Department of Agricultural Economics offers an intensive, interdisciplinary Master of Agribusiness Management program that expands their training and professional development. By offering this MABM degree online we support professionals who are working part/full time and that can’t attend classes on campus and expose them to the convenience of Distance Learning Education. The method of delivery will be 100% online.

Students will demonstrate a high level of competency in the area of Agribusiness Management by applying the principles and methods of Management gained from their courses into their current and future employment endeavors. The MABM is a highly marketable degree due to the combination of general business training along with courses that focus on unique challenges facing food and agribusiness firms.

TARGET AUDIENCE

The target population for the MABM program will be professionals of all areas in Agribusiness Industries including production, distribution and consumption of food, livestock, forestry and ag-related products. This program is designed for students that cannot attend to a face-to-face learning setting. While recruiting graduate students for our campus MABM, we have found that gainfully employed professionals feel limited in the options to pursue a graduate program due to the time requirement and other limitations associated with their respective careers. By offering an online MABM program we intend to recruit not only in-state students but to also pursue students residing outside of the state of Mississippi.

4. LEARNING OUTCOMES (No change from current program)

a. Students will demonstrate the ability to apply important business decision-making concepts.
b. Students will be able to effectively communicate managerial information.
c. Graduates will demonstrate analytical skills necessary to obtain employment related to their field.
5. **EFFECTIVE DATE**

Spring 2018

6. **CONTACT PERSON**

Dr. Angelica S. Williams  
662-325-0848  
awilliams@agecon.msstate.edu

7. **SUPPORT**

A letter of support is provided by the Department Curriculum Committee in the Department of Agricultural Economics.
DATE: June 9, 2017

TO: Box Council and the University Committee on Courses and Curricula

FROM: Dr. Ardian Harri, Program Coordinator
       Master of Agribusiness Management

SUBJECT: Letter of Support to Offer an Existing Degree Program by Distance Learning

We the undersigned Curriculum Committee faculty members in the Department of Agricultural Economics have reviewed and approved the proposal to offer the Master of Agribusiness Management program via Campus 5 (in addition to offering the program through Campus 1).

Signed,

Dr. Ardian Harri  
Dr. Randy Little  
Dr. Lurleen Walters  
Dr. Xiaofei Li

Date  
Date  
Date  
Date

6/9/2017  
6/9/2017  
06/09/2017  
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NOTE: This form is a cover sheet that must accompany the degree program change proposal. The actual proposal should be prepared in accordance with format requirements provided in the Guide and Format for Curriculum Proposals published by the UCCC. Both cover sheet and proposal should be submitted, along with all required copies, to UCCC, Garner Hall, Room 279, Mail Stop 9702.

College: Agriculture & Life Sciences  Department: Food Science, Nutrition, and Health Promotion
Contact Person: Marion W. Evans, Jr.  Mail Stop: 9805  E-mail: mwe59@msstate.edu
Nature of Change: Add New Certificate  Date: 7/7/17
Program will be offered at: Starkville (Campus 1) & Distance Learning (Campus 5)

Current Degree Program Name: Select One
Major:  Concentration:

New Degree Program Name: Certificate  Effective Date: 1/8/2018
Major: Clinical Health Promotion  Concentration:

Summary of Proposed Changes:
The graduate certificate in Clinical Health Promotion and Wellness Coaching is proposed to train post-baccalaureate students in specific, clinical wellness coaching methods to assist patients and clients in improving personal health outcomes. This program will complement the existing M.S. in health promotion within the Food Science, Nutrition, and Health Promotion Department in that it will serve as a specialty certificate for those wanting to go into this field. Further, those students can start a career and still complete the M.S. degree later, from a distance so it may also serve as a feeder program from undergraduate programs such as psychology, nutrition, exercise science and others. The certificate supports a state-wide and regional effort to employ more wellness coaches in clinical settings to help improve health outcomes. The program consists of 21 graduate credit hours with 12 existing hours in health promotion plus two new courses that allow for a 3 credit hour health center practicum and 6 credit hour field-based internship.

[Signatures and dates]

Chair, College or School Curriculum Committee
Dean of College or School
Chair, University Committee on Courses and Curricula
Chair, Graduate Council (if applicable)
Chair, Deans Council

☐ SACS Letter Sent
PROPOSAL FOR ADDITION OF CERTIFICATE PROGRAM
Certificate: FNH Graduate Certificate in Clinical Health Promotion and Wellness Coaching

Contact: Dr. Marion W. Evans, Jr. mwe59@msstate.edu

1. CATALOG DESCRIPTION

There is a need to train professionals for clinical health promotion and wellness coaching in the state of Mississippi and the region to supply these specialists for insurance companies and primary medical care homes. These certificates will complement the existing M.S. degree track in health promotion by adding a clinical focus and also allow those with nutrition or other related degrees to complete a certificate qualifying them for new jobs in this field. The certificate features the latest in wellness and health coaching and will support a state-wide initiative to put these professionals in over 400 medical clinics. The certificate will require 21 hours of graduate study in the Food Science, Nutrition, and Health Promotion Department and will feature 4 existing courses and 2 new courses: a 3-credit hour health center practicum and a 6-hour field-based internship. The new courses can be applied to the M.S. degree program within the 9-hour elective block as well.

Requirements: Successful completion of 21 hours in health promotion graduate studies including the health center practicum and internship. Those not completing the entire M.S. in health promotion as a part of this process will be advised that they may have to choose other electives should the pursue the degree later, due to application of initial course credits.

2. CURRICULUM OUTLINE

To obtain a Clinical Health Promotion and Wellness Coaching Graduate Certificate, students are required to complete the following 21 hours:

FNH 6393-Prevention and Control of Disease
FNH 8513-Theory and Practice of Health Education
FNH 8523-Health Promotion Techniques
FNH 8553-Behavioral Epidemiology
FNH 8443- Health Center Practicum (Submitted to UCCC Processing)
FNH 8556- Clinical Internship in Health Promotion and Wellness Coaching (Submitted to UCCC Processing)
3. STUDENT LEARNING OUTCOMES AND ASSESSMENT

The need for clinical health promotion specialists and wellness coaches is well-delineated in the state of Mississippi and the south with a careful review of health status. The certificate program will qualify students in this emerging area of concentration that is unique in its approach to wellness on a one-on-one basis with patients and clients in a clinical setting. A new initiative in Mississippi seeks to employ over 400 of these professionals and share this model with neighboring states. This will enhance employment opportunities in this area.

EXPECTED LEARNING OUTCOMES
By the end of the program, the student will be able to:

1. describe a typical primary medical care home, basic patient care and clinic flow, as well as recognize the various behavior change theories, models, and techniques used in wellness coaching in a clinical setting.
2. demonstrate a successful coaching interaction with a patient or standardized patient in a clinical environment while working in an interdisciplinary clinical setting.
3. apply culturally competent, goal-based health promotion and wellness coaching techniques in a clinical or community setting.
4. develop and demonstrate a case-specific wellness coaching program by applying best practices from the field of clinical health promotion.

4. SUPPORT

The Longest Health Center will support the program and the Department has a grant to pilot test the program that will allow for hiring an Internship Director and Graduate Assistant. As the program grows, it should easily become self-sustaining as it gains popularity. Further support could also come from grants or renewal of grants originally initiated. Letters of support are attached.

COURSE DESCRIPTIONS FOR THE CERTIFICATE

**FNH 6393 Prevention and Control of Disease: 3 hours.** Lecture. An examination of how food science, nutrition and health promotion relate to chronic diseases. Prevention, control and detection are examined.

**FNH 8513 Theory and Practice of Health Education: 3 hours.** Lecture. Historical perspectives and current status of health education/promotion. Fundamental constructs of the discipline in school, community, and worksite settings.
**FNH 8523 Health Promotion Techniques: 3 hours.** Lecture. Examination of techniques utilized in delivery of health promotion interventions. Emphasizes uses of technology in development of activities suitable for diverse audiences and settings.

**FNH 8553 Behavioral Epidemiology: 3 hours.** Lecture. Behavioral and social environmental issues related to premature morbidity and mortality patterns. Current research literature and application of epidemiological principles to health education/promotion.

**FNH 8443- Health Center Practicum: 3 hours.** Clinical Practicum. Supervised rotation and shadowing experiences related to health promotion and wellness coaching in a clinical setting.

**FNH 8556- Clinical Internship in Health Promotion and Wellness Coaching: 6 hours.** Internship. Clinical internship in a field-based, preceptor-based setting.
Dear Members of the MSU Curriculum Committee:

September 23, 2016

I am writing to let you know of my excitement and support of the proposed Internship for Wellness Coaching. It is potentially a great opportunity for collaboration between Student Affairs, the Department of Food Science, Nutrition and Health promotion as well as University Health Services and the Longest Student Health Center. As you are aware, Mississippi has struggled to keep pace with other states with regard to health and wellness and this offers one avenue to hopefully positively affect health outcomes in our great state.

As Executive Director of University Health Services and Medical Director of the Longest Student Health Center, I fully endorse and support the internship program. I have discussed with our providers and we have all agreed to offer shadowing opportunities in our clinic in the hopes of offering an excellent academic experience for those students interested in wellness coaching. Finally, I would like to add that the collaboration between multiple entities on campus offers a chance at a unique arrangement that will add to the mutual respect of our Divisions.

Thank you for all that you do for the students and our University. If I can be of any assistance, please let me know.

Sincerely,

Clifton W. Story, M.D.
Executive Director, University Health Services
Medical Director, Longest Student Health Center
July 14, 2017

University Committee on Courses and Curricula
Dr. Dana Pomykal Franz, Chairperson
207 Garner Hall
Mississippi State, MS 39762

Dear Members of the Mississippi State University Committee on Courses and Curricula,

It is my pleasure to write this letter of support for the work being done by Dr. Will Evans related to a new graduate certificate program in Clinical Health Promotion and Wellness Coaching.

We view this as a unique partnership, providing students with hands on experience with existing practitioners on campus via the Division of Student Affairs and University Health Services conducting internships. The graduate certificate will provide the practical and academic framework for wellness coaching with the intent of having coaches dispersed throughout healthcare facilities locally and regionally as the program grows. There are no known programs providing this kind of experience and students who complete this certificate will be equipped with the skills necessary to provide primary prevention and wellness related coaching in a variety of settings.

We look forward to this outstanding partnership and appreciate your consideration of the graduate certificate to support this effort.

Sincerely,

Regina Young Hyatt, Ph.D.
Vice President for Student Affairs
To: University Courses and Curriculum Committee

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

Subject: Certificate Program in Clinical Health Promotion and Wellness Coaching and FNH 8XXX Course Additions (2)

Certificate Program in Clinical Health Promotion and Wellness Coaching
The certificate features the latest in wellness and health coaching and will support a state-wide initiative to put these professionals in over 400 medical clinics. The certificate will require 21 hours of graduate study in the Food Science, Nutrition, and Health Promotion Department and will feature 4 existing courses and 2 new courses: a 3-credit hour health center practicum and a 6-hour field-based internship. The new courses can be applied to the M.S. degree program within the 9-hour elective block as well. Requirements: Successful completion of 21 hours in health promotion graduate studies including the health center practicum and internship.

FNH 8xxxx –Health Center Practicum: 3 hours: A combination of short, didactic lectures and supervised shadowing experiences related to health promotion and wellness coaching in a clinical setting. Students work with the advising professor and Internship Director in the selection of the field sites and experiences, including the MSU Longest Health Center. Prerequisites: FNIH 6393 Prevention and Control of Disease FNIH 8513 Theory and Practice of Health Education, FNIH 8523 Health Promotion Techniques, FNIH 8553 Behavioral Epidemiology AND primary advisor’s permission.

FNH 8xxx Clinical Internship in Health Promotion and Wellness Coaching (6 cr hours) Clinical internship in a field-based, preceptor-based setting. Pre-prerequisites are: FNIH 6393 Prevention and Control of Disease, FNIH 8513 Theory and Practice of Health Education, FNIH 8523 Health Promotion Techniques, FNIH 8553 Behavioral Epidemiology, 8xxxx Health Center Practicum, AND primary advisor’s permission.

The proposed certificate program, Clinical Health Promotion and Wellness Coaching and course additions of FNH 8xxxx –Health Center Practicum and FNH 8xxx Clinical Internship in Health Promotion and Wellness Coaching have been voted on and approved by Food Science, Nutrition and Health Promotion Teaching Faculty by a vote of 10 yes votes and 0 no votes.

M. Wes Schilling
FSNHP Curriculum Committee Chair