The effective date for new programs subject to Statewide Academic Program review is implemented in accordance with the Statewide Academic Program Review calendar.
This report is prepared and distributed for the following purposes:

1. To report new academic programs, changes in academic programs, discontinuations of academic programs, new courses, permanent changes in courses, and deletions of courses.
2. To notify the initiating colleges, schools, and departments of approval by the University Committee on Curriculum of their requests for new academic programs, changes in academic programs, discontinuations of academic programs, new courses, permanent changes in courses, and deletions of courses. Any items not approved by the Faculty Senate will be reported to the appropriate college and department or school.
3. To provide information to members of the faculty in each department about academic programs and courses in all colleges, departments, and schools of the University.

Reports of the University Committee on Curriculum to the Faculty Senate are organized as follows:

PART I - NEW ACADEMIC PROGRAMS AND PROGRAM CHANGES:
Organized by colleges in alphabetical order. For a given college, academic units are organized in alphabetical order. For a given academic unit, degrees, majors, and specializations are organized in alphabetical order.

PART II - NEW COURSES:
Organized by academic units in alphabetical order; All-University courses appear last. For a given academic unit, courses are organized according to the names associated with course subject codes, in alphabetical order. Courses with the same subject code are in numerical order.

PART III - COURSE CHANGES:
Organized by academic units in alphabetical order; All-University courses appear last. For a given academic unit, courses are organized according to the names associated with course subject codes, in alphabetical order. Courses with the same subject code are in numerical order.

Not all of the above categories, and not all of the colleges and academic units, will necessarily appear in any given Senate Report.

One or more of the abbreviations that follow may be included in a course entry:

P: = Prerequisite monitored in SIS
C: = Corequisite
R: = Restriction
RB: = Recommended background
SA: = Semester Alias
MICHIGAN STATE UNIVERSITY

April 19, 2022

TO: Faculty Senate

FROM: University Committee on Curriculum

SUBJECT: New Academic Programs and Program Changes:
New Courses and Course Changes

PART I - NEW ACADEMIC PROGRAMS AND PROGRAM CHANGES

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

1. Change the requirements for the Bachelor of Science degree in Food Science in the Department of Food Science and Human Nutrition.

The concentrations in the Bachelor of Science degree in Food Science are noted on the student’s academic record when the requirements for the degree have been completed.

a. Under the heading Requirements for the Bachelor of Science Degree in Food Science make the following changes:

(1) In item 1., replace paragraph three with the following:

Students who are enrolled in the Food Science major leading to the Bachelor of Science degree in the Department of Food Science and Human Nutrition may complete an alternative track to Integrative Studies in Biological and Physical Sciences that consists of the following courses: Biological Science 161, Chemistry 161 and 162, and Physics 221, 231, 241 or Lyman Briggs 273. The completion of Chemistry 161 and 162 satisfies the laboratory requirement. Biological Science 161, Chemistry 161 and 162 and Physics 221, 231, 241 or Lyman Briggs 273 may be counted toward both the alternative track and the requirements for the major referenced in item 3. below.

(2) In item 3. a. delete the following course:

PHY 231 Introductory Physics I 3

(3) In item 3. a. change the total credits from ‘54’ to ‘51’.

(4) Add the following new item 3. b. and reletter items 3. b., 3. c., and 3. d. respectively:

One of the following courses (3 or 4 credits):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB 273</td>
<td>Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHY 221</td>
<td>Studio Physics for Life Scientists I</td>
<td>4</td>
</tr>
<tr>
<td>PHY 231</td>
<td>Introductory Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHY 241</td>
<td>Physics for Cellular and Molecular Biologists I</td>
<td>4</td>
</tr>
</tbody>
</table>

(5) In item 3. e. under the Basic Food Science concentration, item (2) add the following course:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB 274</td>
<td>Physics II</td>
<td>4</td>
</tr>
<tr>
<td>PHY 222</td>
<td>Studio Physics for Life Scientists II</td>
<td>4</td>
</tr>
<tr>
<td>PHY 242</td>
<td>Physics for Cellular and Molecular Biologists II</td>
<td>4</td>
</tr>
</tbody>
</table>

Only one physics course (LB 274, PHY 222, PHY 232, PHY 242) can be counted towards the 9 credits.

(6) In item 3. e. under the Food Business and Industry concentration, in item (2) delete the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABM 100</td>
<td>Decision-making in the Agri-Food System</td>
<td>3</td>
</tr>
<tr>
<td>ABM 222</td>
<td>Agribusiness and Food Industry Sales</td>
<td>3</td>
</tr>
</tbody>
</table>
PART I – NEW PROGRAMS AND PROGRAM CHANGES

Add the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABM 435</td>
<td>Financial Management in the Agri-Food System</td>
<td>3</td>
</tr>
<tr>
<td>FI 311</td>
<td>Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>FIM 335</td>
<td>Food Marketing Management</td>
<td>3</td>
</tr>
</tbody>
</table>

AFRE 100 Decision-making in the Agri-Food System 3
AFRE 222 Agribusiness and Food Industry Sales 3
AFRE 435 Financial Management in the Agri-Food System 3
FI 320 Introduction to Finance 3
AFRE 440 Food Marketing Management 3

or

AFRE 100 Decision-making in the Agri-Food System 3

(7) In item 3. e. under the Food Packaging concentration, change the credits of PKG 221 from '3' to '2' and the total credits from '26' to '25'.

Effective Fall 2022.

2. Change the requirements for the Master of Science degree in Nutrition and Dietetics in the Department of Food Science and Human Nutrition. The University Committee on Graduate Studies (UCGS) approved this request at its March 21, 2022 meeting.

a. Under the heading Requirements for the Master of Science Degree in Nutrition and Dietetics make the following changes:

(1) In item 1., change the credits of HNF 898 from '4' to '1'.

(2) In item 1., change the total credits from '21' to '18'.

(3) In item 2., change the credits from '9' to '12'.

Effective Fall 2022.

3. Change the requirements for the Bachelor of Science degree in Horticulture in the Department of Horticulture.

The concentrations in the Bachelor of Science degree in Horticulture are noted on the student's academic record when the requirements for the degree have been completed.

a. Under the heading Requirements for the Bachelor of Science Degree in Horticulture make the following changes:

(1) In item 3. a. delete the following course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRT 205</td>
<td>Plant Mineral Nutrition</td>
<td>1</td>
</tr>
</tbody>
</table>

Add the following course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRT 494</td>
<td>Horticulture Career Development II</td>
<td>1</td>
</tr>
</tbody>
</table>

(2) In item 3. b. under Horticultural Science make the following changes:

(a) Change the total credits from '30' to '29'.

(b) Replace item (1) with the following:

Both of the following courses (8 credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENT 404</td>
<td>Fundamentals of Entomology</td>
<td>4</td>
</tr>
<tr>
<td>PLP 405</td>
<td>Plant Pathology</td>
<td>4</td>
</tr>
</tbody>
</table>

(c) In item (2) delete the following course:
PART I – NEW PROGRAMS AND PROGRAM CHANGES

HRT 405 Sustainable Practices for Horticultural Food Crop Production 1

Add the following courses:

HRT 351 Hydroponic Food Production 2
HRT 351L Hydroponic Food Production Lab 2

(d) In item (3) add the following course:

CSS 441 Biotechnology and Plant Breeding 3

(3) In item 3. b. under Sustainable and Organic Horticulture make the following changes:

(a) Change the total credits from ‘31’ to ‘32’.
(b) In item (1) change the credits of PLP 405 from ‘3’ to ‘4’.
(c) In item (2) delete the following courses:

CSS 221 Greenhouse Structures and Management 3
HRT 405 Sustainable Practices for Horticultural Food Crop Production 1

Add the following courses:

HRT 351 Hydroponic Food Production 2
HRT 351L Hydroponic Food Production Lab 2

(d) In item (3) delete the following course:

CSS 451 Biotechnology Applications for Plant Breeding and Genetics 3

(4) In item 3. b. under Horticulture Landscape Design, Construction, and Management make the following changes:

(a) In item (2) delete the following courses:

HRT 219 Landscape Computer Aided Design 2
LA 230 Site Construction Materials and Methods 4

Effective Fall 2022.

4. Establish a Agricultural Technology Certificate in Forest Technology in the Institute of Agricultural Technology. The University Committee on Undergraduate Education (UCUE) recommended approval of this request at its February 3, 2022 meeting.

a. Background Information:

Certificate programs and workshops in the areas of production agriculture and horticulture were developed and launched in 1894 as campus-based programs. In 1994, the Institute of Agricultural Technology started to offer programs in collaboration with community colleges. There is currently no certificate program available for individuals interested in Forest Technology within the state of Michigan.

The nation and state of Michigan face an overall shortage of trained graduates in the field of forestry, where aging demographics will result in a wave of retirements in the coming years. In addition, as evidenced in letters of support for our USDA Higher Education Challenge Grant, there is tremendous employer demand for trained foresters (e.g., Michigan Department of Natural Resources, Michigan Association of Timbermen and Lyme Great Lakes Timberlands). These agency and industry partners have consistently stressed concerns in regard to shortages of trained graduates. Despite
growing societal recognition of the importance of forests and trees and the growing demand for trained professionals, undergraduate enrollments in forestry have been in decline for decades. At the same time, there are limited options, especially for postsecondary and non-traditional students who are place-bound and unable to enroll in a traditional 4-year bachelor’s program. Given these issues, there is a need to reinvigorate forestry education programs to meet the changing needs of forestry practice and to train the upcoming generation of forestry professionals.

MSU is one of only two universities in the state that currently offers a Bachelor of Science degree in Forestry; therefore, the Institute of Agricultural Technology in partnership with the Department of Forestry, has the experience and expertise to deliver a certificate in Forest Technology as well. If MSU can be the first university to offer such a program, we expect to bring in new students who would not otherwise consider our existing bachelor’s degree program.

b. **Academic Programs Catalog Text:**

The Forest Technology program prepares graduates for a wide range of employment and career choices. Each student receives personal, one-on-one help in selecting their program of study, including a workplace internship. Students will collect and manage forestry-related data, plan and perform forest management activities, prepare timber for harvest and administer timber sales. They also support fire management activities and coordinate forestry workforce.

### Requirements for Forest Technology

<table>
<thead>
<tr>
<th>C R E D I T S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students must complete 63 credits from the following:</td>
</tr>
<tr>
<td>1. All of the following courses (33 courses):</td>
</tr>
<tr>
<td>AT 293 Professional Internship in Agricultural Technology 3</td>
</tr>
<tr>
<td>CSS 143 Introduction to Soil Science 2</td>
</tr>
<tr>
<td>ENT 110 Applied Entomology of Economic Plants 3</td>
</tr>
<tr>
<td>FOR 115 Field Exploration of Topics in Forest Technology 1</td>
</tr>
<tr>
<td>FOR 116 Career Development in Forestry Technology 1</td>
</tr>
<tr>
<td>FOR 117 Natural Resources Equipment and Worker Safety 1</td>
</tr>
<tr>
<td>FOR 130 Fundamentals of Forest Management Planning 1</td>
</tr>
<tr>
<td>FOR 135 Forest Issues and Policy 1</td>
</tr>
<tr>
<td>FOR 204 Forest Vegetation 3</td>
</tr>
<tr>
<td>FOR 222 Forestry Field Methods 2</td>
</tr>
<tr>
<td>FOR 250 Introduction to Forest Ecology and Silviculture 3</td>
</tr>
<tr>
<td>FOR 260 Applied Forest Management 3</td>
</tr>
<tr>
<td>FOR 265 Crew Leadership and Management of Forest Technology 2</td>
</tr>
<tr>
<td>FOR 270 Forest Business Operations 2</td>
</tr>
<tr>
<td>FOR 275 Timber Harvest Planning and Systems 3</td>
</tr>
<tr>
<td>PLP 105 Fundamentals of Applied Plant Pathology 2</td>
</tr>
<tr>
<td>2. Complete 30 credits of additional course work through Bay College. All course work must be approved by the program coordinator in the Institute of Agricultural Technology.</td>
</tr>
</tbody>
</table>

Effective Fall 2022.

5. Establish a **Agricultural Technology Certificate in Urban Forest Management** in the Institute of Agricultural Technology. The University Committee on Undergraduate Education (UCUE) recommended approval of this request at its February 3, 2022 meeting.

a. **Background Information:**

Certificate programs and workshops in the areas of production agriculture and horticulture were developed and launched in 1894 as campus-based programs. In 1994, the Institute of Agricultural Technology started to offer programs in collaboration with community colleges. There is currently no certificate program available for individuals interested in Urban Forest Management within the state of Michigan. The nation and state of Michigan face an overall shortage of trained graduates in the field of forestry, especially in urban forest management, where aging demographics will result in a wave of retirements in the coming years. In addition, as evidenced in letters of support for our USDA Higher Education Challenge
Grant, there is tremendous employer demand for trained urban and community foresters (e.g., Michigan Department of Natural Resources and International Society of Arboriculture – Michigan). These agency and industry partners have consistently stressed concerns in regard to shortages of trained graduates. Despite growing societal recognition of the importance of urban forests and trees and the growing demand for trained professionals, undergraduate enrollments in forestry have been in decline for decades. At the same time, there are limited options, especially for post-secondary and non-traditional students who are place-bound and unable to enroll in a traditional 4-year bachelor’s program. Given these issues, there is a need to reinvigorate forestry education programs to meet the changing needs of forestry practice and to train the upcoming generation of forestry professionals.

MSU is one of only two universities in the state that currently offers a Bachelor of Science degree in Forestry; therefore, the Institute of Agricultural Technology in partnership with the Department of Forestry, has the experience and expertise to deliver a certificate in Forest Technology as well. If MSU can be the first university to offer such a program, we expect to bring in new students who would not otherwise consider our existing bachelor’s degree program.

b. **Academic Programs Catalog Text:**

The Urban Forest Management program prepares graduates for a wide range of employment and career choices. Each student receives personal, one-on-one help in selecting their program of study, including a workplace internship. Students will collect and analyze urban and community forestry data, coordinate planning activities, manage field operations, provide technical expertise and lead staff. Students also implement bidding and contracting processes and develop and maintain stakeholder relationships.

**Requirements for Urban Forest Management**

Students must complete 60 to 61 credits from the following:

1. **All of the following courses (36 courses):**
   - AT 293 Professional Internship in Agricultural Technology 3
   - CSS 143 Introduction to Soil Science 2
   - ENT 110 Applied Entomology of Economic Plants 3
   - FOR 111 Field Exploration of Urban and Community Forestry 1
   - FOR 112 Career Development in Urban and Community Forestry 1
   - FOR 113 Urban Tree Care Equipment and Worker Safety 2
   - FOR 114 Introduction to Climbing and Aerial Tree Work 1
   - FOR 120 Survey of Urban and Community Forestry 2
   - FOR 125 Methods of Engagement in Urban and Community Forestry 2
   - FOR 222 Forestry Field Methods 2
   - FOR 225 Urban Forestry Information Technology 3
   - FOR 235 Urban Tree Care Practicum 3
   - FOR 240 Crew Leadership and Management in Arboriculture 2
   - FOR 245 Capstone Experience in Urban and Community Forestry 2
   - HRT 211 Landscape Plants I 3
   - HRT 213 Landscape Maintenance 2
   - PLP 105 Fundamentals of Applied Plant Pathology 2

2. Complete 24 or 25 credits of additional course work through Muskegon Community College. All course work must be approved by the program coordinator in the Institute of Agricultural Technology.

Effective Fall 2022.
COLLEGE OF ARTS AND LETTERS

1. Change the requirements for the Graduate Certificate in Digital Humanities in the College of Arts and Letters. The University Committee on Graduate Studies (UCGS) approved this request at its March 21, 2022 meeting.

   a. Under the heading Requirements for the Graduate Certificate in Digital Humanities replace the entire entry with the following:

      Students must complete 9 credits from the following:

      1. One of the following foundation courses (3 credits):
         - DH 865 Digital Humanities Methods Seminar 3
         - HST 812 History in the Digital Age 3

      2. Complete a Pedagogical Experience (3 credits):
         The digital humanities pedagogy experience may be fulfilled through a teaching-related course. The following courses may be used to fulfill this requirement:
         - AL 891 Special Topics in Arts and Humanities
         - DH 861 Digital Humanities Pedagogy
         - DH 890 Digital Humanities Independent Study
         - DH 893 Digital Humanities Internship
         A specific, focused, supervised pedagogy project completed in conjunction with another course may also fulfill this requirement. The project may include: (1) taking another pedagogical methods course with a digital humanities emphasis; (2) completing a Graduate Assistantship or interning in a digital humanities unit in which teaching and the creation of educational materials is at the center of the work; (3) teaching or serving as the Teaching Assistant in a course which incorporated digital humanities methods; (4) completing the Cultural Heritage Informatics Fellowship with a pedagogically focused project. This project and its associated course will be documented in the final portfolio, reviewed by the Digital Humanities Curriculum Committee, and approved by the Associate Dean for Graduate Studies in the College of Arts and Letters.

      3. Complete a Research Experience (3 credits):
         A digital humanities research experience may be fulfilled by participating in a digital humanities project. The following courses may be used to fulfill this requirement:
         - DH 863 Digital Humanities Research
         - DH 890 Digital Humanities Independent Study
         - DH 893 Digital Humanities Internship
         A specific, focused, supervised research experience completed in conjunction with another course may also fulfill this requirement. The project may include: (1) taking a course in which digital humanities work is a substantial part; (2) taking a disciplinary course in which a digital humanities project is undertaken by the student; (3) completing a Graduate Assistantship or interning in a digital humanities unit on campus or with a faculty member engaged in digital humanities work; (4) completing the Digital Scholarship Lab Graduate Arts Fellowship; (5) completing the Cultural Heritage Informatics Fellows Program; (6) completing an individual digital humanities research project based on previous course work, leading to a substantial academic output.

      Portfolio

      Upon completion of the above requirements, students will submit a portfolio that illustrates the learning outcomes and educational objectives of the Graduate Certificate in Digital Humanities no later than the last day of instruction of the semester the student intends to graduate. The portfolio must include (1) a reflective narrative; (2) documentation that demonstrates how the student has met the pedagogy and research requirements; (3) samples of work such as papers or creative work as appropriate.

      The portfolio will be reviewed by the Digital Humanities Curriculum Committee, and if approved, sent to the Associate Dean for Graduate Studies in the College of Arts and Letters for final approval.

   Effective Fall 2022.
2. Change the requirements for the Minor in Philosophy and Law in the Department of Philosophy.

   a. Under the heading Requirements for the Minor in Philosophy and Law make the following change:

      (1) In item 1., add the following course:

      PHL 331  Formal Practical Reasoning  4

   Effective Fall 2022.

3. Change the requirements for the Bachelor of Arts degree in Philosophy in the Department of Philosophy.

   The concentration in the Bachelor of Arts degree in Philosophy is noted on the student’s academic record when the requirements for the degree have been completed.

   a. Under the heading Requirements for the Bachelor of Arts Degree in Philosophy make the following changes:

      (1) In item 3. a. (2) add the following course:

      PHL 331  Formal Practical Reasoning  4

      (2) In the concentration Philosophy and the Law, make the following changes:

          (a) In item 2. add the following course:

              PHL 331  Formal Practical Reasoning  4

          (b) In item 6. delete the following course:

              PHL 444  Philosophical Issues in Biomedicine  4

   Effective Fall 2022.

4. Change the requirements for the Minor in Philosophy in the Department of Philosophy.

   a. Under the heading Requirements for the Minor in Philosophy make the following changes:

      (1) In item 1. add the following course:

      PHL 331  Formal Practical Reasoning  4

   Effective Fall 2022.
5. Change the requirements for the Disciplinary Teaching Minor in French that is available for elementary and secondary teacher certification in the Department of Romance and Classical Studies. The Teacher Education Council (TEC) approved this request at its March 14, 2022 meeting.

a. Under the heading FRENCH replace the entire entry with the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRN 310</td>
<td>Stepping into the 20th Century and Beyond</td>
<td>3</td>
</tr>
<tr>
<td>FRN 320</td>
<td>Exploring Diversity and Minorities in the Francosphere</td>
<td>3</td>
</tr>
<tr>
<td>FRN 330</td>
<td>Progressing in French Pronunciation</td>
<td>3</td>
</tr>
<tr>
<td>FRN 340</td>
<td>Connecting with the Literatures of the Francosphere (W)</td>
<td>3</td>
</tr>
<tr>
<td>FRN 350</td>
<td>Connecting with the Cultures of the Francosphere (W)</td>
<td>3</td>
</tr>
<tr>
<td>FRN 430</td>
<td>Perspectives in the French Language</td>
<td>3</td>
</tr>
<tr>
<td>LLT 307</td>
<td>Methods of Second and Foreign Language Teaching</td>
<td>3</td>
</tr>
<tr>
<td>TE 409</td>
<td>Crafting Teaching Practices in the Secondary Teaching Minor</td>
<td>1</td>
</tr>
<tr>
<td>TE 503</td>
<td>Internship in Teaching Diverse Learners in Additional Endorsement Areas</td>
<td>1</td>
</tr>
<tr>
<td>A 400-level FRN elective</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits: 26

Effective Fall 2022.

6. Change the requirements for the Disciplinary Teaching Minor in Spanish-Elementary that is available for elementary teacher certification in the Department of Romance and Classical Studies. The Teacher Education Council (TEC) approved this request at its March 14, 2022 meeting.

a. Under the heading SPANISH-ELEMENTARY make the following changes:

   (1) Add the following required courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 409</td>
<td>Crafting Teaching Practices in the Secondary Teaching Minor</td>
<td>1</td>
</tr>
<tr>
<td>TE 503</td>
<td>Internship in Teaching Diverse Learners in Additional Endorsement Areas</td>
<td>1</td>
</tr>
</tbody>
</table>

   (2) Change the total credits from ‘24’ to ‘26’.

Effective Fall 2022.

7. Change the requirements for the Disciplinary Teaching Minor in Spanish-Secondary that is available for secondary teacher certification in the Department of Romance and Classical Studies. The Teacher Education Council (TEC) approved this request at its March 14, 2022 meeting.

a. Under the heading SPANISH-SECONDARY make the following changes:

   (1) Delete the following course:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLT 807</td>
<td>Foreign Language Teaching Methods</td>
<td>3</td>
</tr>
</tbody>
</table>

   (2) Add the following required courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 409</td>
<td>Crafting Teaching Practices in the Secondary Teaching Minor</td>
<td>1</td>
</tr>
<tr>
<td>TE 503</td>
<td>Internship in Teaching Diverse Learners in Additional Endorsement Areas</td>
<td>1</td>
</tr>
</tbody>
</table>

   (2) Change the total credits from ‘24’ to ‘26’.

Effective Fall 2022.
8. Change the requirements for the Bachelor of Fine Arts degree in Theatre in the Department of Theatre.
   
a. Under the heading Requirements for the Bachelor of Fine Arts Degree in Theatre make the following changes:

   (1) In the Acting for Stage, Screen, and New Media concentration, under item (2) add the following courses:

   - THR 205 Media Acting I      2
   - THR 206 Musical Theatre I      2
   - THR 305 Media Acting II      2
   - THR 306 Musical Theatre II      2
   - THR 405 Media Acting III      2
   - THR 406 Musical Theatre III      2
   - THR 409 Auditioning      2

   Effective Fall 2022.

9. Delete the curriculum and degree requirements for the Master of Arts degree in Critical Studies in Literacy and Pedagogy in the Department of Writing, Rhetoric and American Cultures. The University Committee on Graduate Studies (UCGS) provided consultative commentary to the Provost after considering this request. The Provost made the determination to discontinue the program after considering the consultative commentary from the University Committee on Graduate Studies.

   No new students are to be admitted to the program effective Fall 2021. No students are to be readmitted to the program effective Fall 2021. Effective Fall 2022, coding for the program will be discontinued and the program will no longer be available in the Department of Writing, Rhetoric and American Cultures. Students who have not met the requirements for the Master of Arts Degree in Critical Studies in Literacy and Pedagogy through the Department of Writing, Rhetoric and American Cultures prior to Fall 2022 will have to change their major.

10. Delete the curriculum and degree requirements for the Master of Arts degree in Digital Rhetoric and Professional Writing in the Department of Writing, Rhetoric and American Cultures. The University Committee on Graduate Studies (UCGS) provided consultative commentary to the Provost after considering this request. The Provost made the determination to discontinue the program after considering the consultative commentary from the University Committee on Graduate Studies.

   No new students are to be admitted to the program effective Fall 2021. No students are to be readmitted to the program effective Fall 2021. Effective Fall 2022, coding for the program will be discontinued and the program will no longer be available in the Department of Writing, Rhetoric and American Cultures. Students who have not met the requirements for the Master of Arts Degree in Digital Rhetoric and Professional Writing through the Department of Writing, Rhetoric and American Cultures prior to Fall 2022 will have to change their major.
COLLEGE OF COMMUNICATION ARTS AND SCIENCES

1. Change the requirements for the Bachelor of Arts degree in Journalism in the School of Journalism.

   The concentrations in the Bachelor of Arts degree in Journalism are noted on the student’s academic record when the requirements for the degree have been completed.

a. Under the heading Requirements for the Bachelor of Arts Degree in Journalism make the following changes:

   (1) Under the heading Broadcast Journalism delete the following course:

       JRN 406 Advanced TV News Storytelling and Producing 3

   Add the following courses:

       One of the following courses (3 credits):
       JRN 303 On-Air Announcing, Interviewing and Hosting 3
       JRN 406A Broadcast News III: Advanced Reporting 3
       JRN 406B Broadcast News Producing 3

   (2) Under the heading Environment, Science and Health Reporting, in the 6-credit requirement add the following courses:

       JRN 485 Environmental Communication Education Abroad 3
       JRN 488 Visual Storytelling in Kenya 4

   (3) Under the heading Information Graphics delete the following course:

       Study Abroad, Creative Journey: Barcelona to Berlin 3

   Add the following courses to the 3-credit requirement:

       JRN 487 Creative Journey Education Abroad 6
       JRN 488 Visual Storytelling in Kenya 4

   (4) Under the heading International Reporting add the following courses to the 3-credit requirement:

       JRN 483 Photo Communication in Europe 6
       JRN 484 Sports Journalism Education Abroad 6
       JRN 485 Environmental Communication Education Abroad 6
       JRN 486 British and Irish Mass Media Education Abroad 6
       JRN 487 Creative Journey Education Abroad 6
       JRN 488 Visual Storytelling in Kenya 4

   (5) Under the heading Media Design add the following courses to the 3-credit requirement:

       JRN 487 Creative Journey Education Abroad 6
       JRN 488 Visual Storytelling in Kenya 4

   (7) Under the heading Media Relations add the following course to the 2-credit requirement:

       JRN 488 Visual Storytelling in Kenya 4

   (8) Under the heading Photojournalism delete the following courses from the 3-credit requirement:

       CAS 396 Integrated Media Arts Special Topics 3
       CAS 496 Advanced Media Project Design and Production (W) 3
       JRN 488 Visual Storytelling in Kenya 4
(9) Under the heading Writing, Reporting and Editing add the following course to the elective requirement:

JRN 486 British and Irish Mass Media Education Abroad 6

Delete the following course:

Study Abroad in Mass Media with a writing component 3

(10) In item 3. d. (2) add the following courses:

PLS 100 Introduction to American Politics 3
PLS 302 Urban Politics 3
PLS 304 Minority Politics 3

(11) Change item 3. e. to the following:

Journalism majors must complete a minimum of 60 credits in courses outside of the College of Communication Arts and Sciences.

Effective Fall 2022.

2. Change the requirements in the Minor in Broadcast Journalism in the School of Journalism.

a. Under the heading Requirements for the Minor in Broadcast Journalism make the following changes:

(1) Delete the following course:
JRN 406 Advanced TV News 3

Add the following courses:
One of the following courses (3 credits):
JRN 406A Broadcast News III: Advanced Reporting 3
JRN 406B Broadcast News Producing 3

Effective Fall 2022.

3. Change the requirements for the Minor in Media Photography in the School of Journalism.

a. Under the heading Requirements for the Minor in Media Photography make the following changes:

(1) In item 2., add the following courses:
CAS 205 Photography in Media Settings 1
JRN 488 Visual Storytelling in Kenya 4

(2) In item 2., replace the note with the following:

Students enrolling in JRN 492 must have advisor approval to ensure appropriate content. Students who reenroll in JRN 492 must select a different topic for each enrollment.

Effective Fall 2022.
COLLEGE OF MUSIC

1. Change the requirements for the Master of Music degree in Collaborative Piano in the College of Music. The University Committee on Graduate Studies (UCGS) approved this request at its March 21, 2022 meeting.

   a. Under the heading Requirements for the Master of Music Degree in Collaborative Piano make the following changes:

      (1) In item 1. delete the following courses:

          MUS 849 Piano Performance     2
          MUS 850A Piano       4
          MUS 850B Collaborative Piano     2
          MUS 856 Chamber Music      2
          MUS 896 Master's Recital Performance    4

          Add the following course:

          MUS 896 Master's Performance     14

      (2) Replace item 3. with the following:

          Complete a 3-credit course in musicology at the 400-level or above.

      (3) Replace item 4. with the following:

          Complete 3 to 5 elective credits in music courses at the 400-level or above, exclusive of additional credits in MUS 896.

      (4) Delete item 5. and renumber items 6. and 7. respectively.

      (5) Delete the following:

          Academic Standards

          A grade of 3.0 or higher is required for Music 896.

Effective Spring 2023.

COLLEGE OF NATURAL SCIENCE

1. Change the requirements for the Doctor of Philosophy degree in Neuroscience in the Program in Neuroscience. The University Committee on Graduate Studies (UCGS) approved this request at its March 21, 2022 meeting.

   a. Under the heading Requirements for the Doctor of Philosophy Degree in Neuroscience make the following changes:

      (1) In item 1. delete the following course:

          NEU 815 Quantitative Skills in Neuroscience Research   3

          Add the following courses:

          CMSE 890 Selected Topics in Computational Mathematics, Science, and Engineering   3
          or
          FOR 875 R Programming for Data Sciences   3
Students who choose CMSE 890 must complete three separate enrollments in a specific topic approved by the student's guidance committee.

(2) Replace item 3. with the following:

Complete in the first year of enrollment in the program, a minimum of 2, and no more than 3 laboratory rotations (NEU 890) with each of two or three members of the faculty. Each rotation is established by mutual agreement of the faculty member and the student.

Effective Fall 2022.

2. Establish a **Graduate Certificate in Sports Analytics** in the Department of Mathematics. The University Committee on Graduate Studies (UCGS) recommended approval of this request at its January 24, 2022 meeting.

   a. **Background Information:**

   The proposed certificate is a natural outgrowth of the experiential and teamwork-based course MTH 491B offered in the Actuarial Science major. Traditionally, students in MTH 491B learn to work in teams towards product delivery (code and documentation) using insurance data, making use of tools in mathematics, statistics, and coding. Since the early 2010’s, the department has added a section that leverages these tools and adapts them to problems in sports analytics. This has been very successful, and one of the results are students who have minimal or no background in sports, but have technical skills in math, statistics, and coding and can be quickly trained in sports analytics. The proposed certificate seeks to offer the same experiential, hands-on approach to learning tools in sports analytics, tailored to the needs of those working in the sports management and coaching fields. It introduces them to quantitative and risk-management tools that address challenges in sports modeling and data analysis.

   In terms of accreditation, because of the overall novelty of the field of sports analytics, there aren’t many accrediting agencies. One that does exist is the International Society of Performance Analysis in Sports (ISPAS) which is connected to the University of Canberra’s sports analytics certificate. Graduates of the Canberra program are eligible to apply for Level 2 accreditation in the ISPAS. More information on the Canberra program can be found at [https://www.canberra.edu.au/course/363JA/1/2022](https://www.canberra.edu.au/course/363JA/1/2022). Beyond the Canberra program, there are a few, but not many, similar certificate programs. These are listed at [https://www.datascienceprograms.org/online/sports-analytics](https://www.datascienceprograms.org/online/sports-analytics) and include Certificate programs and concentrations/specializations within master’s programs offered by American University, the University of West Alabama, Northwestern University, and Temple Universities. Detailed information on the curricula and timeline for completion for these programs can be found at the link.

   There are many strong points that the proposal addresses. First, there is the overall lack of programs offered in this space, especially one that combines the approach combining training in mathematics, statistics, and machine learning with sports analysis, including guest lectures from alumni and others working in the field of professional and amateur sports. Second, the flexibility of online training, combined with on-campus training with MSU Hockey, is a definite benefit. Third, very few universities can compete with the strength in quantitative pedagogy that MSU possesses, and we believe that our reputation in this area will be attractive to graduates and professionals seeking to elevate their skill-sets in sports analytics in the two semester program duration, compared to 20 months required for the American University’s Master’s Program.

   Upon completion of this certificate, students will use advanced mathematics and statistics to address issues in sports analytics, individually and in groups, and develop further areas of inquiry that bring value to their organization. They will develop code comprehension and communication skills that will allow them to direct the analytics teams that are rapidly developing within sports organizations, and communicate their findings to the balance of the organization.

   b. **Academic Programs Catalog Text:**

   The Sports Analytics graduate certificate provides students with quantitative and applicable skills in support of the analysis of sports performance. Students develop analytic techniques in stochastic and statistical analysis with written and verbal communication skills. They will be able to transfer
data on player performance into metrics, develop analytical models to differentiate player performance, and communicate effectively with non-quantitative decision makers. The applications draw from quantitative issues in management of day-to-day operations, player developing and assessment, and player recruitment. The certificate is targeted at professionals in the sports industry or college athletics, former athletes transitioning into sports analytics, and quantitatively literate people who are transitioning into sports analytics. The certificate is available online only.

Admission

Students must:

1. Complete an application with approval from both the Department of Mathematics and Department of Statistics and Probability.
2. Have background in mathematical and statistical foundations normally acquired through course work in multivariable calculus, linear algebra, and statistics and probability.

Requirements for the Graduate Certificate in Sports Analytics

Students must complete 12 credits from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 801</td>
<td>Machine Learning Algorithms: Mathematical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MTH 803</td>
<td>Sports Decision Analytics</td>
<td>3</td>
</tr>
<tr>
<td>STT 832</td>
<td>Data Visualization and Programming in R</td>
<td>3</td>
</tr>
<tr>
<td>STT 834</td>
<td>Sports Analytics Capstone</td>
<td>3</td>
</tr>
</tbody>
</table>

Effective Fall 2022.

3. Change the requirements for the Graduate Certificate in Accelerator Science and Engineering in the Department of Physics and Astronomy. The University Committee on Graduate Studies (UCGS) approved this request at its March 21, 2022 meeting.

The Graduate Certificate in Accelerator Science and Engineering is a Type 2 graduate certificate and will appear on the transcript as "Graduate Certificate Program in Accelerator Science and Engineering".

a. Under the heading Requirements for the Graduate Certificate in Accelerator Science and Engineering make the following changes:

(1) In item 2., add the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 835</td>
<td>Advanced Electromagnetic Fields and Waves I</td>
<td>3</td>
</tr>
<tr>
<td>ME 814</td>
<td>Convective Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME 840</td>
<td>Computational Fluid Dynamics and Heat Transfer</td>
<td>3</td>
</tr>
<tr>
<td>ME 842</td>
<td>Advanced Turbomachinery</td>
<td>3</td>
</tr>
<tr>
<td>ME 940</td>
<td>Selected Topics in Thermal Science</td>
<td>3</td>
</tr>
</tbody>
</table>

(2) Replace the note following item 2. with the following:

Students who enroll in ME 940 and PHY 905 must obtain approval of the Physics and Astronomy Graduate Program Director to ensure appropriate content. PHY 905 may be taken more than once as long as the topic taken is different.

Effective Fall 2022.
4. Establish a **Graduate Certificate in Computational Plant Science** in the Department of Plant Biology. The University Committee on Graduate Studies (UCGS) recommended approval of this request at its January 24, 2022 meeting.

   a. **Background Information:**

   Integrated training Model in Plant and Computational Sciences (IMPACTS) is an NSF funded program for training doctoral students to employ advanced computational/data science approaches to address grand challenges in plant biology. This National Science Foundation Research Traineeship (NRT) was awarded to Michigan State University to address the demand for next-generation scientists with both an understanding of plant biology and computational skills. By training doctoral students to employ advanced computational and data science approaches to address grand challenges in plant biology this critical need could be addressed.

   The training program offers three courses as part of the curriculum which is a requirement for getting the fellowship. The creation of this proposed graduate certificate will broaden participation from graduate students in diverse departments and promote interdisciplinary approaches to research and problem-solving in complex and real-world contexts. In addition, the program’s focus on computational skills is consistent with broader initiatives in STEM nationally and at MSU to promote quantitative and computational approaches as a core component of STEM training.

   Although graduate training in genomics and bioinformatics is widespread, the advanced training in computation and modeling required to handle increasingly heterogeneous, multiscale data from the molecular to ecosystem levels, is lacking. The ability to understand and integrate these diverse types of data is key to modeling complex cellular system functions, relationships between genotypes, environment, and phenotypes, and impacts of global change on ecosystems. The program will be distinct from other biological science graduate programs or from what is provided by most bioinformatics training programs in the United States which emphasize predominantly molecular level problems. The goal of this program certification will be aligned with MSU’s mission to advance life science research and training with a focus on –omics and computation. Cross-disciplinary applications and collaboration between biologists and computational scientists will lessen disciplinary boundaries and enable students to leverage methodological advances in the data revolution for solving complex, multi-system problems in life science. The highly interdependent, multi-dimensional, noisy, and sparse datasets typical of biological observations provide unique challenges to stimulate the development of novel computational tools and models.

   Beyond training a cadre of highly skilled computational plant scientists, the pedagogical approaches developed will broadly inform training practices for infusing computational/data science in any biological discipline. The pedagogical approaches developed as part of this training grant will broadly inform training practices for interdisciplinary education and infuse computational/data science in numerous biological disciplines.

   b. **Academic Programs Catalog Text:**

   The Graduate Certificate in Computational Plant Science provides interdisciplinary training that intersects plant biology and computational and data sciences. The certificate address pressing problems in their respective fields and synthesizes these disciplines to address vast challenges in plant biology.

   **Requirements for the Graduate Certificate in Computational Plant Science**

   Students must complete a minimum of 9 credits from the following:

   1. **CREDITS**
      - All of the following courses (7 credits):
        - CSS 844 Frontiers in Computational and Plant Sciences 3
        - HRT 841 Foundation in Computational and Plant Sciences 3
        - PLB 843 Forum in Computational and Plant Sciences 1
   2. **CREDITS**
      - Complete a minimum of 2 credits from the following courses:
        - CMSE 491 Selected Topics in Computational Mathematics, Science, and Engineering 1 to 4
        - CMSE 801 Introduction to Computational Modeling 3
PART I – NEW PROGRAMS AND PROGRAM CHANGES

CMSE 820 Mathematical Foundations of Data Science   3
CMSE 822 Parallel Computing     3
CMSE 823 Numerical Linear Algebra     3
CMSE 890 Selected Topics in Computational Mathematics, Science, and Engineering 1 to 4

Non-Biologists relevant courses:
BMB 801 Molecular Biology      3
BMB 978 Seminar in Biochemistry     1
HRT 894 Horticulture Seminar     1
IBIO 445 Evolution (W)    3
PLB 400 Introduction to Bioinformatics  3
PLB 801 Foundations of Plant Biology    3
PLB 812 Principles and Applications of Plant Genomics 3

Effective Summer 2022.

COLLEGE OF SOCIAL SCIENCE

1. Establish a Minor in Climate Science in the Department of Geography, Environment, and Spatial Sciences. The University Committee on Undergraduate Education (UCUE) recommended approval of this request at its January 10, 2022 meeting.

   a. Background Information:

      An interdepartmental academic program in Atmospheric Science was first created in the early 2000s at MSU, and was moved to the Department of Geography, Environment, and Spatial Sciences (GEO) around 2016. This existing academic program is an Atmospheric and Climate Sciences concentration as an option within the Bachelor of Science Degree in Environmental Geography. The concentration requires 24 credits of CEM, MTH, and PHY course work and includes an additional 12 to 16 credits of selective course work in CSE, GEO, and GLG. Currently, no academic program exists at MSU that focuses entirely on Climate Science course work offered by GEO. A program that does not require course work in CEM, CSE, GLG, MTH, and PHY will complement a number of MSU’s BA/BS degree programs spanning both arts (e.g., Journalism BA) and sciences (e.g. Data Science BS).

      Currently, there is no Climate Science minor is offered by any Michigan university. University of Michigan offers a Climate and Space Sciences and Engineering minor, while Western Michigan University offers a Climate Change Studies minor. Central Michigan University offers a Meteorology BS program, but no minor program is available. MSU has long housed Michigan’s State Climatologist office, which leads the way in furthering our understanding of Michigan and Great Lakes climate science, making MSU an appropriate home for a Climate Science minor.

      Michigan’s State Climatologist office resides within MSU-GEO. A number of faculty members in the department have climate science expertise, including five in the tenure system, as well as other faculty and staff in the continuing and fixed-term systems. Completing a minor of required and selected course work will provide an undergraduate with a strong foundation of climate science.

      Students will be exposed to introductory and advanced information regarding climate science. Students will use climate science information, as well as qualitative, quantitative, and geospatial application in order to better understand climate problems and solutions. Students will practice effective verbal and written communication of introductory and advanced climate science information, application, problems, and solutions.

   b. Academic Programs Catalog Text:

      The Minor in Climate Science, which is administered by the Department of Geography, Environment, and Spatial Sciences, provides a foundation to students who are interested in issues related to climate and climate change, including students who wish to prepare themselves for degree programs in communication, data science, environmental geoscience, environmental science, environmental studies, environmental policy, journalism, quantitative risk analytics, sustainability, or related fields.
The minor is available as an elective to students who are enrolled in bachelor’s degree programs at Michigan State University other than the Bachelor of Science Degree Environmental Geography with the Atmospheric and Climate Sciences concentration in the Department of Geography, Environment, and Spatial Sciences. With the approval of the department and college that administer the student’s degree program, the courses that are used to satisfy the minor may also be used to satisfy the requirements for the bachelor’s degree.

Students who plan to complete the requirements for the minor should consult the undergraduate academic advisor in the Department of Geography, Environment, and Spatial Sciences.

Requirements for the Minor in Climate Science

Students must complete a minimum of 18 credits from the following:

1. Both of the following courses (6 credits):
   - GEO 203 Introduction to Meteorology 3
   - GEO 409 Global Climate Change and Variability 3

2. One of the following courses (3 credits):
   - GEO 302 Climates of the World 3
   - GEO 303 Severe and Hazardous Weather 3

3. Three of the following courses (9 to 11 credits):
   - GEO 402 Agricultural Climatology 3
   - GEO 403 Dynamic Meteorology (W) 3
   - GEO 405 Weather Analysis and Forecasting 4
   - GEO 410 Geography of Food and Agriculture 3
   - GEO 424 Advanced Remote Sensing 4
   - GEO 429 Geoprocessing 3

Effective Fall 2022.
PART II - NEW COURSES

COLLEGE OF ARTS AND LETTERS

ACM 469  Advocating for Arts and Cultural Organizations
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: ACM 271 or concurrently
Not open to students with credit in ACM 869.
Advocacy for local cultural nonprofit organizations. Local, regional, national and international policies and practices for resource development in the nonprofit sector.
Strategic messaging, assessment, organizational advocacy tactics and community engagement.
Effective Fall 2022

ACM 896  Internship in Arts and Cultural Management
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: ACM 801 or concurrently R: Open to graduate students. Approval of department.
Supervised internship with arts and cultural organizations associated with management and operational studies.
Request the use of the Pass-No Grade (P-N) system.
SA: ACM 871
Effective Fall 2022

MUSM 892  Special Topics in Museum Studies
Fall of every year. Spring of every year. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: MUSM 885 or concurrently R: Open to graduate students.
Current issues in museum studies.
SA: MUSM 895
Effective Fall 2022

MUSM 896  Museum Internship
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: MUSM 885 or concurrently R: Open to graduate students. Approval of department.
Supervised applied experience in a museum, zoo, garden or other learning environment related to a student's area of study.
Request the use of the Pass-No Grade (P-N) system.
SA: MUSM 893
Effective Fall 2022

DEPARTMENT OF FOOD SCIENCE AND HUMAN NUTRITION

HNF 255  Professional Development and Career Planning in Nutrition
Fall of every year. Spring of every year. 1(1-0) P: HNF 150 R: Open to students in the Nutritional Sciences Major or in the Lyman Briggs Nutritional Sciences Coordinate Major.
Experiential learning and career opportunities in nutrition. Skills for professional and career development.
SA: HNF 250L
Effective Fall 2022

HNF 822  Nutrition for Human Performance and Sport
Fall of every year. 3(3-0) RB: Undergraduate degree in Dietetics R: Open to master's students in the Nutrition and Dietetics Major or approval of department.
Nutritional guidelines to optimize performance of athletes.
Effective Fall 2022
DEPARTMENT OF FORESTRY

FOR 115  Field Exploration of Topics in Forest Technology  
Summer of every year. 1 credit. R: Open to agricultural technology students.  
Introduction to forest technology careers and opportunities in Michigan.  
Effective Summer 2022

FOR 116  Career Development in Forest Technology  
Spring of every year. 1(1-0) P: FOR 115 R: Open to agricultural technology students.  
Preparation for academic success and professional careers in forest technology. Effective communication, problem solving, and time management.  
Effective Fall 2022

FOR 117  Natural Resources Equipment and Worker Safety  
Fall of every year. 1(0-3) R: Open to agricultural technology students.  
Introduction to the power equipment commonly used in the field of Natural Resources.  
Effective Fall 2022

FOR 130  Fundamentals of Forest Management Planning  
Spring of every year. 1(1-0) R: Open to agricultural technology students.  
Introductory course to emerging elements of forest technology and the forest management plan.  
Effective Fall 2022

FOR 135  Forest Issues and Policy  
Fall of every year. 1(1-0) R: Open to agricultural technology students.  
Ethical and legal issues, policy, and law from a scientific view-point, with emphasis on the environmental, ecological, social, and economic factors of a working forest.  
Effective Fall 2022

FOR 250  Introduction to Forest Ecology and Silviculture  
Spring of every year. 3(3-0) P: FOR 204 and FOR 222 R: Open to agricultural technology students.  
Biological principles and environmental factors governing the natural establishment, development, care, and harvesting of forest trees and stands. Field trips required.  
Effective Fall 2022

FOR 260  Applied Forest Management  
Fall of every year. 3(1-4) P: FOR 130 and FOR 250 R: Open to agricultural technology students.  
Hands on experience working with field data and databases, inventories, mapping, and drone technology to manage forest resources.  
Effective Fall 2022

FOR 265  Crew Leadership and Management in Forest Technology  
Spring of every year. 2(1-3) P: FOR 260 or approval of department R: Open to agricultural technology students.  
Aspects of crew leadership in forest technology.  
Effective Fall 2022

FOR 270  Forest Business Operations  
Spring of every year. 2(1-2) P: FOR 260 and (FOR 265 or concurrently) or approval of department R: Open to agricultural technology students.  
Basic human relations, business structures, and accounting practices used in forest management.  
Effective Fall 2022

FOR 275  Timber Harvest Planning and Systems  
Spring of every year. 3(1-4) P: FOR 260 and (FOR 270 or concurrently) R: Open to agricultural technology students.  
Preparation for, and administration of, timber harvest and sales.  
Effective Fall 2022
DEPARTMENT OF HORTICULTURE

HRT 351 Hydroponic Food Production
Fall of every year. 2(2-0) P: HRT 203 and HRT 204 R: Open to juniors or seniors.
Principles and practices of commercial controlled environment hydroponic production.
Nutrient solution chemistry and management, system design and operation, crop physiology, and environmental and cultural management.
Effective Fall 2022

HRT 351L Hydroponic Food Production Lab
Fall of every year. 2(0-4) P: HRT 203 and HRT 204 and (HRT 351 or concurrently) R: Open to juniors or seniors in the Horticulture Major.
Greenhouse hydroponic production of leafy greens, microgreens, and fruiting crops.
Hands-on experience with monitoring and managing nutrient solutions, scouting, and identifying pests, disease, and physiological disorders, measuring environmental parameters, and food safety practices.
Effective Fall 2022

HRT 494 Horticulture Career Development II
Fall of every year. 1(1-0) P: Completion of Tier I Writing Requirement RB: HRT 207 R: Open to seniors in the Department of Horticulture.
Development of critical professional skills, including critical research and professional writing skills, resume/curriculum vitae, letters of application, communication and presentation skills.
Effective Fall 2022

COLLEGE OF HUMAN MEDICINE

HM 845 Informatics and Information Technology
Spring of odd years. 3(3-0) P: HM 842 and HM 843 RB: Academic or professional background in public health and/or public health related discipline, experience with databases R: Open to students in the Public Health major or approval of college.
REINSTATEMENT Information technology for health informatics systems, principles of relational database systems, operations, information systems, data sets, data standards and classification systems.
Effective Spring 2023

CENTER FOR INTEGRATIVE STUDIES IN SOCIAL, BEHAVIORAL AND ECONOMIC SCIENCES

ISS 205 Big Ideas in the Social Sciences
Fall of every year. Spring of every year. Summer of every year. 4(4-0)
Introduction to the inquiry and research of complex issues in the social, behavioral, and economic sciences. Special topics to engage new students' interests, analyze complex ideas, and consider empirical evidence.
Effective Fall 2022

SCHOOL OF JOURNALISM

JRN 830 News Media Law and Ethics
Fall of every year. Spring of every year. 3(3-0) A student may earn a maximum of 3 credits in all enrollments for this course. R: Open to graduate students or master's students or graduate-professional students.
Legal, ethical and moral concerns associated with news gathering and dissemination. Principles and issues associated with the First Amendment. Libel, invasion of privacy, prior restraint and access to information, objectivity, sensitivity, covering victims and survivors, and source relations.
Effective Fall 2022
PART II – NEW COURSES

**MSU COLLEGE OF LAW**

**LAW 593K**  Business Ethics and the Law  
On Demand. 0 to 6 credits. P: LAW 500M R: Open to Law students or law advanced students in the MSU College of Law.  
Exploration of prominent moral and ethical codes as expressed in U.S. business law and policy, including legal definitions of “unfair competition” and “the morals of the marketplace.”  
Effective Spring 2023

**DEPARTMENT OF MATHEMATICS**

**MTH 801**  Machine Learning Algorithms: Mathematical Analysis  
Fall of every year. Spring of every year. 3(3-0)  
Effective Fall 2022

**MTH 803**  Sports Decision Analytics  
Fall of every year. Spring of every year. 3(3-0) P: MTH  501  
Theories of sports decisions are developed and assessed through quantitative and stochastic techniques.  
Effective Fall 2022

**DEPARTMENT OF MILITARY SCIENCE**

**MS 110L**  Army Leadership and Officer Development Laboratory  
Fall of every year. 1(0-2) RB: MS 110 or concurrently  
Introduction to leader tasks in a field environment, regular practical exercises and fitness evaluations per Army, Army Reserve, and National Guard standards.  
Effective Fall 2022

**MS 120L**  Introduction to Army Leadership and Problem-Solving Laboratory  
Spring of every year. 1(0-2) RB: MS 110 and MS 110L and MS 120  
Introduction to team operations and tactics in a field environment, regular practical exercises and fitness evaluations per Army, Army Reserve, and National Guard standards.  
Effective Fall 2022

**MS 210L**  Values and Ethics of Army Leaders Laboratory  
Fall of every year. 1(0-2) RB: MS 110 and MS 110L and MS 120 and MS 120L and (MS 210 or concurrently)  
Introduction to squad-level operations and tactics in a field environment, regular practical exercises and fitness evaluations per Army, Army Reserve, and National Guard standards.  
Effective Fall 2022

**MS 220L**  Army Doctrine and Team Development Laboratory  
Spring of every year. 1(0-2) RB: MS 110 and MS 110L and MS 120 and MS 120L and MS 210 and MS 210L and (MS 220 or concurrently)  
Application of advanced squad-level operations and tactics in a field environment, regular practical exercises and fitness evaluations per Army, Army Reserve, and National Guard standards.  
Effective Fall 2022
PART II – NEW COURSES

MS 310L  Leading and Problem Solving in Army Units Laboratory
Fall of every year. 1(0-2) RB: MS 110 and MS 110L and MS 120 and MS 120L and MS 210 and MS 210L and MS 220 and MS 220L and (MS 310 or concurrently)
Introduction to platoon-level operations and tactics in a field environment, regular practical exercises and fitness evaluations per Army, Army Reserve, and National Guard standards.
Effective Fall 2022

MS 320L  Army Small Unit Tactics and Leadership Laboratory
Spring of every year. 1(0-2) RB: (MS 320 or concurrently) MS 120 and MS 120L and MS 210 and MS 210L and MS 220 and MS 220L and MS 310 and MS 310L
Application of advanced platoon-level operations and tactics in a field environment, regular practical exercises and fitness evaluations per Army, Army Reserve, and National Guard standards.
Effective Fall 2022

MS 410L  Adaptive Army Leadership Laboratory
Fall of every year. 1(0-2) RB: (MS 410 or concurrently) and MS 320 and MS 320L and MS 120L and MS 210 and MS 210L and MS 220 and MS 220L and MS 310 and MS 310L
Application of Army planning and training processes to introduce MS 110, 210 and 310 students to platoon and below operations in field settings, regular practical exercises and fitness evaluations per Army, Army Reserve, and National Guard standards.
Effective Fall 2022

MS 420L  Army Leadership in a Complex World Laboratory
Spring of every year. 1(0-2) RB: (MS 420 or concurrently) and MS 410L and MS 410 and MS 320L and MS 320 and MS 310L and MS 310 and MS 220L and MS 220 and MS 210L
Application of Army planning and training processes to teach advanced tactics to MS 110, 210 and 310 students for platoon and below operations in field settings, regular practical exercises and fitness evaluations per Army, Army Reserve, and National Guard standards.
Effective Fall 2022

COLLEGE OF MUSIC

MUS 427  Early Music
Spring of odd years. 2(2-0) P: MUS 212 R: Open to undergraduate students in the College of Music.
Exploration of musical styles of the Middle Ages and Renaissance globally. Understanding how contact between different cultures resulted in new musical practices.
Effective Spring 2023

SCHOOL OF PACKAGING

PKG 450  Automotive and Industrial Packaging
Fall of every year. 2(2-0) P: MTH 124 or MTH 132 or LB 118 or MTH 152H
REINSTATMENT Returnable and expendable packaging for part shipments to assembly plants, cost justification, service parts packaging, logistical systems, and material handling.
SA: PKG 440
Effective Summer 2022

DEPARTMENT OF PHILOSOPHY

PHL 305  Podcasting Philosophy
Fall of every year. Spring of every year. 3(3-0)
Podcasting as a media for philosophy understood as public, engaged dialogue. Topics include dialogue and conversation as a philosophical methodology, and the creation of philosophical podcasts. Philosophical topics vary by instructor.
Effective Fall 2022
PART II – NEW COURSES

PHL 331  Formal Practical Reasoning
Fall of every year. Spring of every year. 4(4-0) RB: PHL 130
Formal methods in practical reasoning. Decision theory, including decisions under ignorance and risk, and game theory.
Effective Fall 2022

PHL 360  Philosophy of Language
Spring of every year. 3(3-0) RB: One PHL course.
REINSTATEMENT  Elementary topics in semantics, linguistic pragmatics, and philosophy of language.
Meaning, denotation, speech acts, and linguistic relativity.
Effective Fall 2022

DEPARTMENT OF STATISTICS AND PROBABILITY

STT 832  Data Visualization and Programming in R
Fall of every year. 3(3-0) R: Open to students. Approval of department.
Development of sports data predictive models. Extraction and management of sport data, graphical and numerical summaries using visualization tools to model practical sports scenarios. Compilation of written reports on test results and performance outputs.
Effective Fall 2022

STT 834  Sports Analytics Capstone
Spring of every year. 3(3-0) P: MTH 501 and STT 502 and MTH 503 R: Approval of department.
Development of quantitative models, based on complex sports-related data sets, to support personnel or revenue-based decision-making from the perspective of a coach, manager, or player agent. Reports, presentations, and code repositories will be delivered.
Effective Fall 2022

DEPARTMENT OF THEATRE

THR 205  Media Acting I
On Demand. 2(1-3) P: THR 101
Introduction to On-Camera Acting technique and pertinent film production terminology.
SA: THR 204
Effective Fall 2022

THR 206  Musical Theatre I
On Demand. 2(1-3) P: THR 101
Introduction to the Musical Theatre canon, new musical development and performance.
Effective Fall 2022

THR 305  Media Acting II
On Demand. 2(1-3) P: THR 205
Intensive on-camera scene study across a variety of genres.
Effective Fall 2022

THR 306  Musical Theatre II
On Demand. 2(1-3) P: THR 206
Advanced approach to Musical Theatre canon, new musical development, and performance.
Effective Fall 2022

THR 405  Media Acting III
On Demand. 2(1-3) P: THR 305
Reel scene production and professional skills building in on-camera acting.
Effective Fall 2022

THR 406  Musical Theatre III
On Demand. 2(1-3) P: THR 306
Professionalization in Musical Theatre, new musical development and performance.
Effective Fall 2022
THR 409  
Auditioning  
On Demand. 2(2-2) P: THR 101  
Auditioning for work as an actor in stage, screen, and new media.  
Effective Fall 2022
PART III – COURSE CHANGES

DEPARTMENT OF ADVERTISING AND PUBLIC RELATIONS

PR 225  Writing for Public Relations
Fall of every year. Spring of every year. Summer of every year. 3(3-0)
Theory and practice of preparing written business communications for public relations.
Effective Fall 2021 Effective Summer 2023

PR 260  Principles of Public Relations
Fall of every year. Spring of every year. Summer of every year. 3(3-0)
Role and function of public relations in society. History of the field. Roles of practitioners and understanding the unique professional areas within the field of public relations.
SA: ADV 227, ADV 260
Effective Fall 2021 Effective Summer 2023

PR 300  Public Relations Theory and Ethics
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: ADV 260 or concurrently
Theories of public relations, persuasion, social media interaction and mass communication as they apply to public relations, audience analysis and application of social media strategies. Theories of ethics, ethical codes in public relations and the ethical challenges in this field.
Effective Summer 2020 Effective Summer 2023

PR 305  Methods of Public Relations Inquiry
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: (ADV 260 or concurrently) and (MTH 101 or MTH 102 or STT 200)
Nature and conduct of public relations inquiry. Formative research methods, data analytics and evaluative measures used for public relations campaign planning. Drawing samples, collecting and analyzing data, interpreting and reporting results.
Effective Summer 2020 Effective Summer 2023

PR 310  Diversity, Equity, and Inclusion in Public Relations and Advertising
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: ADV 260 or concurrently
Exploration of issues pertaining to diversity, equity and inclusion (DEI) as they impact the practice of public relations and advertising within the United States and globally. Effective cross-cultural communication practices.
Effective Summer 2020 Effective Summer 2023

PR 320  Public Relations Storytelling for Digital, Video and Print
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: PR 300 and PR 305 and PR 310 R: Open to students in the Public Relations major.
Theory and application of storytelling for corporate and public relations purposes in the digital environment. Examination of established and emerging digital and social media platforms. Content creation for public relations purposes in established and emerging digital and social media platforms.
Effective Fall 2020 Effective Summer 2023

PR 325  Intermediate Social Media and Public Relations Techniques
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: (COM 300 or STT 200 or STT 201) or (PR 300 and PR 305 and PR 310) R: Open to students in the Public Relations Minor or in the Public Relations major.
Production of social media and public relations messages to achieve strategic organizational communication objectives. Techniques for measuring success. Development of public relations portfolio.
SA: ADV 325
Effective Fall 2020 Effective Summer 2023
PART III – COURSE CHANGES

PR 335 Advanced Social Media and Public Relations Techniques
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: PR 300 and PR 305 and PR 310 and PR 325 R: Open to students in the Public Relations Minor or in the Public Relations major.
Advanced production of written, social media and video public relations messages to achieve strategic organizational communication objectives. Techniques for measuring success. Refinement of public relations portfolio.
Effective Fall 2020 Effective Summer 2023

PR 425 Public Relations Strategy and Ethics in a Digital World
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: (COM 300 or STT 200 or STT 201) or (PR 300 and PR 305 and PR 310) R: Open to students in the Public Relations Minor or in the Public Relations major.
Strategic planning and ethical considerations in public relations, social media and digital media.
SA: ADV 425
Effective Fall 2020 Effective Summer 2023

PR 485 Integrated Public Relations Campaigns (W)
Fall of every year. Spring of every year. 3(3-0) P: (PR 300 and PR 305 and PR 310 and PR 320 and PR 335 and PR 325 and PR 425) and completion of Tier I writing requirement R: Open to students in the Public Relations major.
Development of public relations campaigns for clients. Relationship-building, creative, social media and digital marketing communication elements.
Effective Fall 2020 Effective Summer 2023

PR 492 Special Topics in Public Relations
Fall of every year. Spring of every year. 1 to 8 credits. A student may earn a maximum of 9 credits in all enrollments for this course. RB: ADV 260 and ADV 225 R: Open to students in the Public Relations major.
Varied topics pertaining to the study of public relations processes. Not open to freshmen.
Effective Fall 2020 Effective Summer 2023

COLLEGE OF ARTS AND LETTERS

ACM 461 Financial Management and Planning of Arts, Cultural and Museum Management
Fall of every year. Spring of every year. Summer of every year. 3(2-2) P: ACM 271 or concurrently Not open to students with credit in ACM 861
Strategic theory, financial, and planning approaches for arts, cultural, and museum organization administration and management. Budget development and financial strategy; strategic planning. Staffing and human resource management.
SA: AL 461
Effective Fall 2021 Effective Summer 2022

ACM 871 Internship in Arts and Cultural Management
Fall of every year. Spring of every year. Summer of every year. 1 to 3 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: ACM 801 or concurrently R: Approval of department.
Supervised internship with arts and cultural organizations associated with management and operational studies.
SA: AL 871
DELETE COURSE
Effective Summer 2022

ACM 872 Practicum in Arts and Cultural Management
On Demand. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: ACM 801 or concurrently R: Open to graduate students in the College of Arts and Letters. Approval of college.
Practical experience in arts and cultural management, which may involve project-oriented activities.
Request the use of the Pass-No Grade (P-N) system.
Effective Fall 2020 Effective Summer 2022
MUSM 485  Foundations of Museum Studies  
Fall of every year. 3(3-0) Interdepartmental with Anthropology and History of Art. R: Not open to freshmen. Not open to students with credit in MUSM 885. 
Activities, functions, and organization of museums. Changing role of museums as cultural institutions. 
SA: AL 485 
Effective Spring 2022  Effective Summer 2022 

MUSM 487  Museums, Arts and Culture in the Digital Future  
Fall of every year. Spring of every year. 3(3-0) Interdepartmental with Anthropology. P: MUSM 485 or concurrently Not open to students with credit in MUSM 887. 
Theoretical and practical approaches to the ways digital technologies are changing the definitions of audiences, visitor experiences, arts and cultural professionals, and organizations. 
Effective Fall 2021  Effective Summer 2022 

MUSM 488  Museum Curatorial Practices  
Spring of every year. 3(3-0) Interdepartmental with Anthropology and History of Art. P: (MUSM 485) and ((MUSM 489 or concurrently) or (MUSM 494 or concurrently) or (MUSM 498 or concurrently)) R: Not open to freshmen. Not open to students with credit in MUSM 888. 
Methods and practices for the development, care, and use of museum collections in research, education, and exhibition activities. 
SA: HA 488, AL 488 SA: AL 488, HA 488 
Effective Spring 2022  Effective Summer 2022 

MUSM 489  Museum Collections Management and Care  
Fall of every year. Spring of every year. 3(3-0) P: MUSM 485 or concurrently Not open to students with credit in MUSM 889. 
Introduction to the organization, preventative care, and meaning of objects held in museum collections. Basic collection management, registration, and preservation skills are introduced from acquisition to deaccession. Explore the constructed meanings of museum objects by professionals and visitors to contextualize the care and organization of museum collections. 
Effective Fall 2021  Effective Summer 2022 

MUSM 497  Practicum in Museum Studies  
Fall of every year. Spring of every year. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: MUSM 485 or concurrently RB: MUSM 485 R: Open to students in the Museum Studies Minor and open to students in the Museum Studies Graduate Certificate or approval of college. 
Practical experience in museum studies. 
Request the use of the Pass-No Grade (P-N) system. 
Request the use of ET-Extension to postpone grading. 
The work for the course must be completed and the final grade reported within 2 semesters after the end of the semester of enrollment. 
SA: AL 497 
Effective Spring 2022  Effective Summer 2022 

MUSM 498  Learning and Experience in Museums  
Fall of every year. Spring of every year. 3(3-0) Interdepartmental with History of Art. P: MUSM 485 or concurrently R: Open to juniors or seniors. R: Not open to freshmen. Not open to students with credit in MUSM 898. 
Theoretical and practical approaches to understanding and enhancing ways visitors experience museums, zoos, botanical gardens, and other informal learning environments. Educational and interpretive planning and programming with individuals, groups, and communities. 
SA: HA 487 
Effective Fall 2021  Effective Summer 2022
MUSM 887  The Digital Museum
Fall of every year. Spring of every year. 3(3-0) Interdepartmental with Anthropology and History. P: MUSM 885 or concurrently R: Open to graduate students in the College of Arts and Letters or approval of college. Not open to students with credit in MUSM 487. Exploration, application, and innovation of the most current uses of the digital in museums, the arts, and other cultural organizational settings. SA: AL 887 Effective Spring 2022 Effective Summer 2022

MUSM 893  Museum Internship
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P: MUSM 885 or concurrently R: Approval of college. Supervised applied experience in a museum, zoo, garden or other learning environment related to a student's field of study. Request the use of the Pass-No Grade (P-N) system. SA: AL 893 DELETE COURSE Effective Summer 2022

MUSM 895  Special Topics in Museum Studies
Fall of every year. Spring of every year. 1 to 6 credits. Interdepartmental with Anthropology. A student may earn a maximum of 6 credits in all enrollments for this course. P: MUSM 885 or concurrently R: Approval of college. Current issues in museum studies. SA: AL 895 DELETE COURSE Effective Summer 2022

MUSM 897  Practicum in Museum Studies
On Demand. 1 to 3 credits. Interdepartmental with Anthropology and Community Sustainability and History. A student may earn a maximum of 6 credits in all enrollments for this course. P: MUSM 885 or concurrently R: Approval of college. Practical experience in museum studies, which may involve project-oriented activities to fulfill the Plan B requirement. Request the use of the Pass-No Grade (P-N) system. Request the use of ET-Extension to postpone grading. The work for the course must be completed and the final grade reported within 2 semesters after the end of the semester of enrollment. SA: AL 897 Effective Fall 2021 Effective Summer 2022

BIOMEDICAL LABORATORY DIAGNOSTICS PROGRAM

BLD 805  Communication in the Sciences
Fall of every year. Summer of every year. 2(2-0) Professional communication in clinical laboratory science, including article and proposal writing, thesis writing, posters, and presentations. Request the use of ET-Extension to postpone grading. The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment. Effective Spring 2022 Effective Fall 2022

BLD 811  Fundamentals of Scientific Research
Fall of every year. Spring of every year. 1(1-0) R: Open to master's students in the Biomedical Laboratory Diagnostics Program. Best practices for the research enterprise. Ethical conduct of research. Critical evaluation of scientific literature. SA: MT 810 Effective Fall 2016 Effective Spring 2023
Part III – Course Changes

BLD 815  Cell Biology in Health and Disease I
Spring of every year, Spring of even years. 2(2-0) RB: Undergraduate course in Biochemistry and Physiology.
Experience in a clinical laboratory
Principles and theories of cell biology and biochemistry are presented with a focus on applications to clinical pathology.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.
Effective Summer 2017 Effective Spring 2023

BLD 816  Cell Biology in Health and Disease II
Summer of every year, Summer of even years. 2(2-0) P: BLD 815 RB: Undergraduate course in biochemistry and physiology. Experience in a clinical laboratory
Continuation of BLD 815.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.
Effective Summer 2017 Effective Summer 2022

BLD 831  Clinical Application of Molecular Biology
Spring of every year. 2(2-0) P: BLD 830 RB: Basic biochemistry, medical or research laboratory experience
Molecular diagnostic principles. Diagnostic outcomes in traditional and non-traditional laboratory disciplines.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.
SA: MT 831
Effective Summer 2017 Effective Spring 2023

BLD 832  Molecular Pathology Laboratory
Summer of every year. 2(0-4) P: BLD 831 or concurrently
Equipment operation, DNA extraction and measurement, electrophoresis, hybridization and transfers, amplification and detection including techniques and automated sequencing. Clinical applications.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.
Effective Summer 2017 Effective Summer 2022

BLD 835  Hemostasis, Thrombosis and Effective Resource Management
Fall of every year, Fall of even years. 3(3-0) RB: Background in hemostasis, thrombosis and blood product management.
Theories of coagulation, thrombosis and effective blood product management. Needs and particular stresses during an active bleeding crisis.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.
Effective Summer 2017 Effective Fall 2022

BLD 836  Adverse Transfusion Outcomes: Detection, Monitoring and Prevention
Spring of every year, Spring of odd years, Summer of every year. 2(2-0) RB: Medical technology and clinical laboratory sciences laboratory professionals.
Adverse transfusion outcomes (ATO) covering cause, methods of detection, monitoring paradigms and prevention.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.
Effective Spring 2016 Effective Spring 2023
BLD 837  Transfusion Service Operations and Management  
**Fall of every year. Fall of even years. Spring of every year.** 1(1-0) RB: Clinical transfusion service practical experience.

Management and operational practices needed to meet both the fiscal and regulatory oversight of a transfusion service.

Request the use of ET-Extension to postpone grading.

The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.

**Effective Fall 2010 Effective Fall 2022**

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BLD 838  Clinical Context of Blood Product Management  
**Fall of every year. Fall of even years.** 1(1-0) RB: Experience in transfusion medicine

Effective blood product management in the context of high use, high demand clinical settings.

Request the use of ET-Extension to postpone grading.

The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.

**Effective Fall 2018 Effective Fall 2022**

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BLD 842  Managing Biomedical Laboratory Operations  
**Fall of every year. Fall of even years. Spring of every year.** 2(2-0) R: Open to graduate students or lifelong graduate students or approval of department.

Integration of the roles of legislative, regulatory, technological and economic factors that influence the practice and management of biomedical laboratory operations.

Request the use of ET-Extension to postpone grading.

The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.

SA: MT 842

**Effective Fall 2016 Effective Fall 2022**

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BLD 844  Topics in Biomedical Laboratory Operations  
**Spring of every year. Spring of odd years.** 1(1-0) P: BLD 842 R: Open to graduate students or lifelong graduate students or approval of department.

Current issues relevant to biomedical laboratory operations from an interdisciplinary perspective with an emphasis on efficient laboratory operations.

Request the use of ET-Extension to postpone grading.

The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.

SA: MT 844

**Effective Fall 2016 Effective Spring 2023**

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BLD 846  Decision Processes for Biomedical Laboratory Operations  
**Fall of every year. Fall of odd years.** 2(2-0) P: BLD 842 R: Open to master's students or lifelong graduate students or approval of department.

Integrative case studies presented in a problem-based learning format. Strategies for decision-making in the operations of a biomedical laboratory. Cases integrate scientific principles, management principles and regulatory factors.

Request the use of ET-Extension to postpone grading.

The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.

SA: MT 846

**Effective Summer 2010 Effective Fall 2022**

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BLD 850  Concepts in Immunodiagnostics  
**Fall of every year. Spring of every year.** 2(2-0) RB: An undergraduate course in biochemistry or cell biology.

Immunochemistry, immunological principles and theory applied to diagnostic evaluation of the host immune response during health and disease.

Request the use of ET-Extension to postpone grading.

The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.

SA: MT 850

**Effective Summer 2017 Effective Fall 2022**
BLD 851  Clinical Application of Immunodiagnostic Principles  
Spring of every year. summer of every year. 2(2-0) P: BLD 850  
Immunodiagnostic theories and principles applied to clinical assay development and method evaluation.  
Request the use of ET-Extension to postpone grading.  
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.  
SA: MT 851  
Effective Summer 2017 Effective Spring 2023

BLD 852  Immunodiagnostics Laboratory  
Summer of every year. Summer of even years. 2(2-0) P: BLD 850  
Performance of immunopurifications, in vitro diagnostic assays and basic flow cytometry.  
Data analysis and quality control evaluation.  
Request the use of ET-Extension to postpone grading.  
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.  
Effective Summer 2017 Effective Summer 2022

BLD 853  Advanced Flow Cytometry  
Summer of every year. Summer of odd years. 2(2-0) P: BLD 850 and BLD 851 and (BLD 852 or concurrently) or approval of department  
Flow cytometry systems, software and reagents. Data analysis and experimental design of complex flow cytometric assays. Flow cytometry applications in medicine and research.  
Request the use of ET-Extension to postpone grading.  
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.  
Effective Summer 2017 Effective Summer 2022

BLD 854  Advanced Flow Cytometry Laboratory  
Summer of every year. Summer of odd years. 2(0-4) P: BLD 852 RB: Experience in Flow Cytometry R: Open to graduate students. C: BLD 853 concurrently.  
Flow cytometry and analyses exercises that emphasize controls, reagent titrations, assay validation, determination of assay sensitivity, and assay development using 6 to 8 fluorochromes.  
Request the use of ET-Extension to postpone grading.  
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.  
Effective Summer 2018 Effective Summer 2022

BLD 870  Clinical Mass Spectrometry Theory  
Fall of every year. Fall of odd years. 2(2-0) RB: One course in Biochemistry or concurrent.  
The theory and principles of mass spectrometry. Principles of instrumentation, liquid and gas chromatography theory and data analysis as it applies to the clinical laboratory.  
Request the use of ET-Extension to postpone grading.  
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.  
Effective Spring 2015 Effective Fall 2022

BLD 871  Applied Clinical Mass Spectrometry  
Spring of every year. Spring of even years. 2(2-0) P: BLD 870 or approval of department RB: One course in protein chemistry or concurrent  
Data interpretation and quality control in clinical mass spectrometry. Principles of sample preparation, platform selection, data analysis, and clinical applications as it applies to the clinical laboratory.  
Request the use of ET-Extension to postpone grading.  
The work for the course must be completed and the final grade reported within 3 semesters after the end of the semester of enrollment.  
Effective Summer 2015 Effective Spring 2023
BLD 872  Clinical Mass Spectrometry Laboratory
Summer of every year. Summer of even years. 2(1-2) P: BLD 870 and BLD 871 or approval of
department RB: One course in protein chemistry or concurrent enrollment in same.
Sample preparation, instrument operation, data interpretation, and instrument
maintenance as it relates to the clinical practice.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 3
semesters after the end of the semester of enrollment.
Effective Summer 2016 Effective Summer 2022

COLLEGE OF COMMUNICATION ARTS AND SCIENCES

CAS 203  Design in Media Settings
Fall of every year. Spring of every year. Summer of every year. 1(1-0) R: Open to undergraduate
students in the College of Communication Arts and Sciences.
Essential techniques for creating single and multiple page layouts for print communication
products.
Effective Fall 2017 Effective Fall 2022

CAS 204  Web Design in Media Settings
Fall of every year. Spring of every year. Summer of every year. 1(1-0) R: Open to undergraduate
students in the College of Communication Arts and Sciences.
Professional web authoring techniques including technology standards, aesthetics and
production in media settings.
Effective Fall 2017 Effective Fall 2022

CAS 205  Photography in Media Settings
Fall of every year. Spring of every year. Summer of every year. 1(1-0) R: Open to undergraduate
students in the College of Communication Arts and Sciences.
Essential techniques for capturing, processing and outputting digital images in media
settings.
Effective Fall 2017 Effective Fall 2022

CAS 206  Graphics and Illustration in Media Settings
Fall of every year. Spring of every year. Summer of every year. 1(1-0) R: Open to undergraduate
students in the College of Communication Arts and Sciences.
Essential techniques for creating digital illustrations and graphics for media projects.
Effective Fall 2017 Effective Fall 2022

CAS 207  Animation in Media Settings
Fall of every year. Spring of every year. Summer of every year. 1(1-0) R: Open to undergraduate
students in the College of Communication Arts and Sciences.
Fundamentals of animation including principles, technology and design techniques for
stand-alone and web-based applications in media settings.
Effective Fall 2017 Effective Fall 2022

CAS 208  Interactivity in Media Settings
Fall of every year. Spring of every year. Summer of every year. 1(1-0) R: Open to undergraduate
students in the College of Communication Arts and Sciences.
User interface and programming techniques for interactive design.
Effective Fall 2017 Effective Fall 2022

CAS 209  Introduction to Video Production
Fall of every year. Spring of every year. Summer of every year. 2(2-0) R: Open to students.
Professional video techniques, technologies, standards, aesthetics, and procedures.
SA: CAS 201, CAS 202
Effective Summer 2021 Effective Fall 2022
DEPARTMENT OF COMMUNITY SUSTAINABILITY

CSUS 811  Community, Food and Agriculture: A Survey
Fall of every year. Fall of odd years. 3(3-0)
Philosophical, socio-economic, health and political issues related to food and farming in the United States.
SA: ACR 811
Effective Fall 2014 Effective Fall 2022

CSUS 833  Program Evaluation in Agriculture and Natural Resources
Spring of every year. Spring of even years. 3(3-0)
Concepts, theories, procedures and applications of program evaluation. Planning and implementing evaluations of food, agriculture and natural resources programs. Logic models, evaluation plans and instruments, data analysis and written reports.
SA: ACR 833
Effective Summer 2016 Effective Fall 2022

CSUS 838  Participatory Modes of Inquiry
Fall of every year. Fall of odd years. 3(3-0) RB: CSUS 800, CSUS 802, a graduate philosophy of science course, or a graduate-level research methods course.
Participatory and action research literature across the disciplines. Epistemological and theoretical foundations, fields of application, points of emphasis for practice. Skill building in reflexivity, surfacing assumptions, dialogue, and active listening.
SA: ACR 838
Effective Fall 2016 Effective Fall 2022

CSUS 848  Community Based Natural Resource Management in International Development
Spring of every year. Spring of odd years. 3(3-0)
SA: ACR 848, RD 823
Effective Fall 2014 Effective Fall 2022

DEPARTMENT OF COMPUTATIONAL MATHEMATICS, SCIENCE, AND ENGINEERING

CMSE 495  Experiential Learning in Data Science (W)
Fall of every year. Spring of every year. 4(2-4) Interdepartmental with Computer Science and Engineering and Statistics and Probability. P: (CSE 232 and CMSE 382) and completion of Tier I writing requirement R: Open to seniors.
Team-based data science projects on realistic, large-scale data. Team-based data science projects working with real-world data in collaboration with client/company sponsors. Practice in software development, data collection, curation, modeling, scientific visualization and presentation of results. Students may be required to sign a non-disclosure agreement (“NDA”) or an assignment of intellectual property rights (“IP Assignment”) to work with some project sponsors.
Effective Fall 2019 Effective Spring 2023
CSE 802  Pattern Recognition and Analysis
Spring of every year. 3(3-0) P: CSE 840 RB: (CSE 331 and MTH 314 and STT 441) or CSE 331 and MTH 314 and STT 441 R: Open to graduate students in the Department of Computer Science and Engineering or in the Department of Electrical and Computer Engineering. R: Open to graduate students in the Department of Computer Science and Engineering or approval of department.
Algorithms for classifying and understanding data. Statistical and syntactic methods, supervised and unsupervised machine learning. Cluster analysis and ordination. Exploratory data analysis. Methodology for design of classifiers. Introduction to salient topics in statistical pattern recognition. These include concepts in Bayesian decision theory, parametric and non-parametric density estimation schemes, linear discriminant functions, perceptrons and unsupervised clustering. The project component of this course will test the student's ability to design and evaluate classifiers on datasets.
Effective Spring 2010 Effective Fall 2023

CSE 803  Computer Vision
Fall of every year. 3(3-0) P: CSE 840 RB: CSE 331 and MTH 314 and STT 351 R: Open only to Computer Science or Electrical Engineering majors. R: Open to graduate students in the Department of Computer Science and Engineering or approval of department.
SA: CPS 803
Effective Summer 2000 Effective Fall 2023

CSE 814  Formal Methods in Software Development
Computer Aided Verification
Fall of odd years. Spring of every year. 3(3-0) RB: MTH 472 RB: CSE 260 R: Open only to majors in the Department of Computer Science and Engineering or approval of department. R: Open to graduate students in the Department of Computer Science and Engineering or approval of department.
Formal specification languages, integrating verification with development. Design and the implementation of term project.
SA: CPS 814
Effective Fall 2021 Effective Spring 2023

CSE 841  Artificial Intelligence
Fall of every year. 3(3-0) P: CSE 840 RB: CSE 440 R: Open only to Computer Science or Electrical Engineering majors. R: Open to graduate students in the Department of Computer Science and Engineering.
Types of intelligence, knowledge representation, cognitive models. Goal-based systems, heuristic search and games, expert systems. Language understanding, robotics and computer vision, theorem proving and deductive systems, and learning.
SA: CPS 841
Effective Summer 1999 Effective Fall 2023

CSE 847  Machine Learning
Spring of every year. 3(3-0) P: CSE 841 P: CSE 840 RB: Algorithms, programming in C or equivalent, probability and statistics, artificial intelligence. R: Open only to students in the Department of Computer Science and Engineering or approval of department. R: Open to graduate students in the Department of Computer Science and Engineering or approval of department.
Computational study of learning and data mining. Strengths and limitations of various learning paradigms, including supervised learning, learning from scalar reward, unsupervised learning, and learning with domain knowledge.
Effective Fall 2003 Effective Fall 2023
CSE 849  Deep Learning
Spring of every year. 3(3-0) P: CSE 840 and CSE 847 RB: MTH 314 and STT 441 or equivalent CSE 841 or 842 or 847 R: Open to graduate students in the Department of Computer Science and Engineering or approval of department.
Overview of both the foundational ideas and the recent advances in deep neural network algorithms and applications.
Effective Fall 2022  Effective Fall 2023

CSE 881  Data Mining
Fall of every year, Spring of every year. 3(3-0) P: CSE 840 or CSE 482 RB: Programming skills in C, C++, Java and Matlab. Basic knowledge in calculus, probability and statistics. R: Open to graduate students in the Department of Computer Science and Engineering or approval of department.
Techniques and algorithms for knowledge discovery in databases, from data preprocessing and transformation to model validation and post-processing. Core concepts include association analysis, sequential pattern discovery, anomaly detection, predictive modeling, and cluster analysis. Application of data mining to various application domains.
Effective Fall 2004  Effective Fall 2023

DEPARTMENT OF COUNSELING, EDUCATIONAL PSYCHOLOGY, AND SPECIAL EDUCATION

CEP 868  Medical Aspects of Disability
Spring of every year, Summer of every year. 3(3-0)
Medical terminology, medical aspects of physical, sensory and developmental disabilities. Impact on function, accommodation, and adjustment. Implications for service provision.
Effective Summer 2021  Effective Spring 2023

CEP 894G  Special Education Practicum: Children and Youth with Learning Disabilities
Fall of every year. Spring of every year. 1 to 10 credits. 1 to 6 credits. A student may earn a maximum of 10 credits in all enrollments for this course. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in the Special Education major. R: Open to graduate students in the Special Education Major. C: CEP 802A concurrently and CEP 804A concurrently.
Supervised field experience with students who have learning disabilities. Planning, implementing, and critiquing instruction in elementary and secondary school settings.
Effective Spring 1999  Effective Fall 2022

DEPARTMENT OF FOOD SCIENCE AND HUMAN NUTRITION

HNF 250  Contemporary Issues in Human Nutrition
Fall of every year. 3(2-2) 3(4-0) P: (HNF 150) and completion of Tier I writing requirement R: Open to students in the Nutritional Sciences Major or in the Lyman Briggs Nutritional Sciences Coordinate Major.
Effective Fall 2018  Effective Fall 2022

HNF 250L  Professional Development and Career Planning in Nutrition
Fall of every year. Spring of every year. 1(0-2) P: HNF 150 R: Open to students in the Nutritional Sciences Major and open to students in the Lyman Briggs Nutritional Sciences Coordinate Major.
Experiential learning and career opportunities in nutrition. Skills for professional and career development.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 1 semester after the end of the semester of enrollment.
DELETE COURSE
Effective Spring 2022
HNF 415  Global Nutrition  
Fall of every year. Spring of every year. 3(3-0) P: HNF 350 P: HNF 250 R: Open to seniors or juniors in the Nutritional Sciences Major or in the Lyman Briggs Nutritional Sciences Coordinate Major.  
Burdens, causes, and consequences of undernutrition globally. Interaction of nutrition with illness, obesity, and reproductive health. Approaches, policies, and programs to prevent undernutrition.  
Effective Spring 2021 Effective Fall 2022

DEPARTMENT OF HORTICULTURE

HRT 205  Plant Mineral Nutrition  
Spring of every year. 1(3-0) P: CSS 210 RB: HRT 203  
Mineral elements required by plants. Essential elements, effect of soil and potting media on nutrient availability, absorption and function in plant physiology, and nutrient deficiency and toxicity symptoms. Methods of monitoring and managing plant nutrient levels. Class meets first five weeks of semester.  
DELETE COURSE  
Effective Fall 2022

HRT 219  Landscape Computer Aided Design  
Spring of even years. 2(3-0) RB: CSE 101 or CSS 110  
Computer Aided Design (CAD) for landscape design. Calculations, take offs, perspective drawings using AutoCAD software. Offered first ten weeks of semester.  
DELETE COURSE  
Effective Fall 2022

HRT 361  Applied Plant Physiology  
Fall of every year. 3(3-0) P: PLB 105 or BS 161 or BS 171 RB: HRT 203 and HRT 204  
Whole plant physiological and growth responses of plants to light, temperature, and gases during commercial plant production. Coordination and management of growth for optimum production and quality. Fundamental aspects of whole plant physiology (i.e., anatomy, water and solute movement, mineral nutrition, photosynthesis, respiration, hormones, and responses to the environment) as well as the application of these principles in plant systems.  
Effective Fall 2014 Effective Fall 2022

DEPARTMENT OF HUMAN DEVELOPMENT AND FAMILY STUDIES

HDFS 881  Quantitative Methods in Human Development  
Fall of every year. Spring of every year. 3(3-0) RB: (HDFS 880) or equivalent course in research methods. R: Open to master's students or doctoral students in the Department of Human Development and Family Studies.  
Application of quantitative techniques to the analysis of human development and family studies research data.  
SA: FCE 881  
Effective Summer 2018 Effective Fall 2022

HDFS 901  Contemporary Scholarship in Human Development and Family Studies  
Fall of every year. Spring of every year. 3(3-0) R: Open to doctoral students in the Department of Human Development and Family Studies.  
Multiple perspectives on human development and family studies scholarship. Emerging research; professional development strategies.  
SA: FCE 901  
Effective Fall 2010 Effective Fall 2022
DEPARTMENT OF LINGUISTICS, LANGUAGES AND CULTURES

GRM 898  Master's Research Project
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open to graduate students in the German Studies Major or approval of department. Directed research leading to a master's project in partial fulfillment of Plan B master's degree requirements. Directed research in support of Plan B master's degree requirements. Effective Fall 1999 Effective Spring 2023

LLT 496  Practicum in Adult English as a Second Language Teaching
Spring of every year. 3(3-0) P: LLT 346 and LLT 306 and (LLT 361 or concurrently) P: LLT 306 R: Open to undergraduate students. Practical experience in adult ESL teaching. Classroom observations, tutoring, teaching demonstrations, lesson planning, and materials development. Effective Fall 2017 Effective Fall 2022

PROGRAM IN MATHEMATICS EDUCATION

MTHE 840  Critical Content of School Mathematics: Numbers and Operations

MTHE 841  Critical Content of School Mathematics: Algebra
Fall of odd years. On Demand. 3(3-0) RB: MTH 310 and MTH 320 R: Open to graduate students. Mathematical foundations of algebra. Historical development. Development in school curriculum. Research on teaching and learning. SA: SME 841 Effective Summer 2013 Effective Spring 2022

MTHE 842  Critical Content of School Mathematics: Geometry
Spring of even years. On Demand. 3(3-0) RB: MTH 330 or MTH 432 R: Open to graduate students. Mathematical foundations of geometry. Instructional materials. Historical development. Development of geometry in school curriculum. Research on teaching and learning. SA: SME 842 Effective Summer 2013 Effective Spring 2022

DEPARTMENT OF MILITARY SCIENCE

MS 110  Army Leadership and Officer Development
Fall of every year. 1 to 2 credits. 1(1-0) RB: MS 110L or concurrently. Duties and responsibilities of the Army officer and noncommissioned officer. Organizational structure of the Army, Army Reserve, and National Guard. The Army's role in joint operations. Introduction to Army values, leadership, customs, and traditions. SA: MS 101, MS 101A Effective Fall 2015 Effective Fall 2022

MS 120  Introduction to Army Leadership and Problem Solving
Spring of every year. 1 to 2 credits. 1(1-0) RB: MS 110 RB: MS 110 and MS 110L and (MS 120L or concurrently). Fundamentals of basic Army leadership. Military problem solving process. Military briefing and writing skills. Goal setting and time management. Introduction to the Army's developmental counseling program. Effective Fall 2015 Effective Fall 2022
PART III – COURSE CHANGES

MS 210  Values and Ethics of Army Leaders
Fall of every year. 2 to 3 credits. 2(2-0) RB: MS 120 and MS 110 RB: MS 120 and MS 110 and MS 110L and MS 120L and (MS 210L or concurrently)
Application of military case studies. Critical dilemmas in combat situations and the ethical decisions Army leaders make to ensure mission success. Understanding how to improve Army organizations and soldier performance. Introduction to the Army's leadership development program, battle drills, land navigation, and combat decision making. Critical dilemmas in combat situations and the ethical decisions Army leaders make to ensure mission success. Understanding how to improve Army organizations and soldier performance. Introduction to the Army's leadership development program, battle drills, land navigation, and combat decision making.
SA: MS 201, MS 201A
Effective Summer 2018 Effective Fall 2022

MS 220  Army Doctrine and Team Development
Spring of every year. 2 to 3 credits. 2(2-0) RB: MS 110 or MS 120 or MS 210 RB: MS 110 and MS 120 and MS 210 and MS 110L and MS 120L and MS 210L and (MS 220L or concurrently)
Application of Army doctrine to field-based leadership decisions. Army values, teamwork, and warrior ethos in relationship to the law of land warfare and philosophy of military service. Investigation of leading and following using case studies and exercises in small units up to squad-level.
SA: MS 202A, MS 202B
Effective Summer 2018 Effective Fall 2022

MS 310  Leading and Problem Solving in Army Units
Fall of every year. 3 to 4 credits. 3(3-0) RB: (MS 110 and MS 120 and MS 210 and MS 220) and Completion of basic training, or the leader training course. RB: (MS 110 and MS 120 and MS 210 and MS 220 and MS 110L and MS 120L and MS 210L and MS 220L and (MS 310L or concurrently)) and Completion of basic training, or the leader training course.
Planning and executing military activities in small Army units. Recognizing and analyzing problems in challenging situations. Implementing the skills required to communicate decisions and supervise subordinates. Applying fundamentals of map reading and land navigation.
SA: MS 301
Effective Fall 2015 Effective Fall 2022

MS 320  Army Small Unit Tactics and Leadership
Spring of every year. 3 to 4 credits. 3(3-0) RB: MS 110 and MS 120 and MS 210 and MS 220 and MS 310 RB: (MS 320L or concurrently) and MS 120 and MS 210 and MS 220 and MS 310 and MS 120L and MS 210L and MS 220L and MS 310L and MS 110
Fundamentals of military tactics and battle drills. Applying troop leading procedures to military tactical operations. Implementing tactical skills and making decisions to lead small Army units on the battlefield. Integrate terrain analysis into military planning and operations.
SA: MS 302
Effective Fall 2015 Effective Fall 2022

MS 410  Adaptive Army Leadership
Fall of every year. 3 to 4 credits. 3(3-0) RB: MS 110 and MS 120 and MS 210 and MS 220 and MS 310 and MS 320 RB: (MS 410L or concurrently) and MS 120 and MS 210 and MS 220 and MS 310 and MS 320 and MS 210L and MS 220L and MS 310L and MS 320L
Application of military case studies. Skills and attributes military leaders use to make decisions in combat situations. Practical exercises in problem solving and crisis counseling. Fundamentals of Army Training Management, the military justice system, and the law of land warfare.
SA: MS 401
Effective Fall 2015 Effective Fall 2022
PART III – COURSE CHANGES

MS 420  Army Leadership in a Complex World
Spring of every year. 3 to 4 credits. 3(3-0) RB: MS 110 and MS 120 and MS 210 and MS 220 and MS 310 and MS 320 and MS 410 RB: (MS 420L or concurrently) and MS 410 and MS 410L and MS 320 and MS 320L and MS 310 and MS 310L and MS 220 and MS 220L and MS 210
Application of military case studies to the principles of the law of land warfare, and rules of engagement in the face of international terrorism. Importance of ethics in military leadership. Integration of the media into military operations. Evaluation of interaction with non-governmental organizations, civilians, and host nation support on the battlefield.
SA: MS 402
Effective Fall 2015 Effective Fall 2022

COLLEGE OF MUSIC

MUS 494  Musicians' Health and Wellness
Fall of even years. Fall of odd years. Spring of even years. 2(2-0) R: Open to undergraduate students in the College of Music and open to graduate students in the College of Music and not open to freshmen in the College of Music.
Healthy musical and lifestyle habits and choices.
Effective Spring 2017 Effective Fall 2023

MUS 894  Seminar in Musicians' Health and Wellness
Fall of even years. Spring of even years. 1(1-0) R: Open to graduate students in the College of Music. C: MUS 494 concurrently.
Critical reading of research and scholarly resources in the area of performing arts.
Effective Spring 2017 Effective Fall 2023

DEPARTMENT OF PHILOSOPHY

PHL 130  Logic and Reasoning
Fall of every year. Spring of every year. 3(3-0) Not open to students with credit in PHL 330.
Deductive and inductive reasoning. Topics such as rational argumentation, fallacies, definition, meaning, truth and evidence. Techniques for critical reading and thinking.
Deductive, inductive, and practical reasoning. Topics such as rational argumentation, fallacies, definition, meaning, truth, and evidence. Techniques for critical reading and thinking.
Effective Fall 2015 Effective Fall 2022

PHL 330  Formal Reasoning
Fall of every year. Spring of every year. 4(4-0) RB: PHL 130 Not open to students with credit in PHL 432.
Formal methods in deductive reasoning. Logic of connectives and quantifiers including identity, functions, and descriptions.
Effective Fall 2015 Effective Fall 2022

PHL 432  Logic and its Metatheory
Spring of odd years. 4(4-0) RB: PHL 130 RB: PHL 330 Not open to students with credit in PHL 330.
Logical consequence, first-order predicate logic with identity, including functions and descriptions. Proof theory and model theory. Topics in metatheory such as completeness, compactness, and the Lowenheim-Skolem Theorems. The axiomatic method and Godel's Incompleteness Theorems.
Effective Fall 2015 Effective Fall 2022
PHL 492  Capstone for Majors  (W)
Spring of every year. 3(3-0) P: Completion of Tier I Writing Requirement RB: (PHL 130 or PHL 330 or PHL 432) and ((PHL 210 and PHL 211) and 20 total credits in Philosophy) RB: (PHL 130 or PHL 330 or PHL 331 or PHL 432) and ((PHL 210 and PHL 211 and PHL 212 and PHL 213 and PHL 214) and 20 total credits in Philosophy) R: Open to seniors in the Department of Philosophy or approval of department.
- Advanced, variable topic seminar for undergraduate majors. Presentations, substantial written work.
- Effective Spring 2014 Effective Fall 2022

PHL 499  Senior Thesis  (W)
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: (PHL 130 or PHL 330 or PHL 432) and completion of Tier I writing requirement P: Completion of Tier I Writing Requirement RB: 20 credits in Philosophy R: Open to seniors in the Department of Philosophy. Approval of department; application required.
- Individual research project supervised by a faculty member that demonstrates the student’s ability to do independent research and submit or present a major paper.
- Individual research project supervised by a faculty member that demonstrates the student’s ability to do independent research, report that research in the format of a written thesis, defend the thesis in oral examination, and submit, present, or publish that research.
- Request the use of ET-Extension to postpone grading.
- The work for the course must be completed and the final grade reported within 2 semesters after the end of the semester of enrollment.
- Effective Fall 2016 Effective Fall 2022

DEPARTMENT OF PHYSIOLOGY

PSL 475L  Capstone Laboratory in Physiology
Fall of every year. Spring of every year. Summer of every year. 2(1-3) P: (PSL 431) and completion of Tier I writing requirement P: (PSL 431 and PSL 432) and completion of Tier I writing requirement RB: (PSL 432) and anatomy and statistics RB: anatomy and statistics R: Open to juniors or seniors in the Physiology Major or in the Lyman Briggs Physiology Coordinate Major. R: Open to seniors in the Physiology Major or in the Lyman Briggs Physiology Coordinate Major.
- Laboratory exercises in human and animal physiology, including cardiovascular, respiratory, neural, muscle, sensory, and hormonal function, as well as systems physiology studies in exercise and systemic reflexes.
- Effective Spring 2014 Effective Fall 2022

DEPARTMENT OF WRITING, RHETORIC AND AMERICAN CULTURES

WRA 202  Introduction to Professional and Public Writing
Fall of every year. Spring of every year. 3(3-0) P: Completion of Tier I Writing Requirement R: Open to students in the Professional and Public Writing Major or approval of department.
- Principles of rhetoric and writing applied to professional and public writing, with emphasis on writing as social and professional action. Definition and major theories of the field, research tools and practices, genres and conventions, and professional style.
- SA: AL 202
- Effective Fall 2019 Effective Spring 2023

WRA 210  Introduction to Web Authoring
Fall of every year. Spring of every year. 3(3-0) P: (WRA 202 or concurrently) or (WRA 260 or concurrently) P: Completion of Tier I Writing Requirement R: Open to students in the Experience Architecture Major or in the Professional and Public Writing Major or approval of department.
- Analyzing, evaluating, and authoring Web sites through principles of design rhetoric. Practices of Web accessibility, usability, and sustainability by using HTML and CSS.
- Effective Fall 2019 Effective Spring 2023
***PART III – COURSE CHANGES***

**WRA 225  Introduction to Composing Digital for Video**  
Fall of every year. 3(3-0)  
P: (WRA 202 or concurrently) or (WRA 260 or concurrently)  
P: Completion of Tier I Writing Requirement  
P: Open to undergraduate students in the Professional and Public Writing Major  
Rhetorical and design theories applied to digital video composing and producing.  
Analyzing and composing digital video for professional and public contexts.  
SA: WRA 417  
*Effective Fall 2019 Effective Spring 2023*

**WRA 260  Writing, Rhetoric, Cultures, and Community**  
Fall of every year. Spring of every year. 3(3-0)  
P: Completion of Tier I Writing Requirement  
P: Open to undergraduate students in the Experience Architecture Major or in the Professional and Public Writing Major or approval of department  
Introduction to rhetorical practices, processes, and strategies. Study of intersections of rhetorical theories and cultural engagement, with emphasis on analyzing and composing for different professional and public settings. Exploration of different knowledge-making processes and influences on writing. Reading- and discussion-intensive course.  
SA: AL 260  
*Effective Fall 2019 Effective Spring 2023*

**WRA 320  Technical Communication (W)**  
Spring of every year. 3(3-0)  
P: WRA 202 or WRA 260  
P: Completion of Tier I Writing Requirement  
P: Open to undergraduate students in the Experience Architecture Major or in the Forestry Major or in the Professional and Public Writing Major or approval of department  
Principles and practices of communicating technical and procedural information for different audiences. Methods of audience-based research, information design, project management, and technical style.  
SA: AL 320  
*Effective Fall 2019 Effective Spring 2023*

**WRA 325  Writing and Multimodality**  
Fall of every year. Spring of every year. 3(3-0)  
P: (WRA 202 or concurrently) or (WRA 260 or concurrently)  
P: Completion of Tier I Writing Requirement  
P: Open to undergraduate students in the Department of Writing, Rhetoric and American Cultures or approval of department  
Rhetorical and cultural dimensions of composing in digital spaces. Study of and practice with the rhetorical affordances and expectations of different writing spaces. Practice in messaging across contexts and composing with multiple technologies.  
*Effective Fall 2019 Effective Spring 2023*

**WRA 330  Writing Research in Communities and Cultures**  
Fall of every year. 3(3-0)  
P: (WRA 202 or concurrently) or (WRA 260 or concurrently)  
P: Completion of Tier I Writing Requirement  
RB: ISS 300-level course  
P: Open to undergraduate students in the Professional and Public Writing Major or approval of department  
Writing and research methods in and with local, global, and online communities and organizations. Topics include methods of field research and textual analysis, working with quantitative and qualitative data, and ethics of representation. Focus on the ways in which culture informs and influences community and writing by/with communities.  
*Effective Fall 2019 Effective Spring 2023*

**WRA 331  Writing in the Public Interest (W)**  
Spring of every year. 3(3-0)  
P: (WRA 202 or WRA 260) and completion of Tier I writing requirement  
P: Completion of Tier I Writing Requirement  
P: Open to students in the Forestry Major or in the Professional and Public Writing Major or approval of department  
Various forms of public writing and rhetoric and their roles in civic and public culture. Emphasis on nonprofit communication practices, tools, and genres, and orientation toward culture and its influence on public and community writing. Practice in modes of public and civic discourse, including deliberative strategies and a range of public literacies with attention to cultural engagement.  
SA: AL 331  
*Effective Fall 2019 Effective Spring 2023*
WRA 333  Writing in Corporate Contexts  
Spring of every year. Summer of every year. 3(3-0)  P: WRA 202 or concurrently  P: Completion of Tier I Writing Requirement  
Rhetorical and cultural dimensions of corporate writing. Practice in messaging across corporate contexts and composing for professional and consumer audiences.  
Effective Spring 2022  Effective Spring 2023

WRA 335  Writing in Scientific Contexts  
Spring of every year. Summer of every year. 3(3-0)  P: WRA 202 or concurrently  P: Completion of Tier I Writing Requirement  
Rhetorical and cultural dimensions of medical and scientific writing. Study of and practice with rhetorical affordances and expectations in scientific contexts.  
Effective Spring 2022  Effective Spring 2023

WRA 337  Writing and Public Policy  
Fall of every year. Summer of every year. 3(3-0)  P: WRA 202 or concurrently  P: Completion of Tier I Writing Requirement  
Rhetorical and cultural dimensions of composing in public and civic spaces. Study of and practice with policy research, analysis, evaluation, narration, advocacy, and argumentation.  
Effective Spring 2022  Effective Spring 2023

WRA 350  Sound Writing and Rhetoric  
Spring of every year. 3(3-0)  P: WRA 202 or WRA 260  P: Completion of Tier I Writing Requirement  R: Open to undergraduate students in the Department of Writing, Rhetoric and American Cultures or approval of department  
Theories and principles of sound composing. Intensive reading and practice with emphasis on rhetorical dimensions of listening to and composing sound. Expectation of the roles of editing, equalization, and mastering as rhetorical variables that affect how audiences respond to sound. Practice with accessible and ethical audio writing and editing techniques.  
Effective Fall 2019  Effective Spring 2023

WRA 355  Writing for Publication Workshop  
Summer of every year. 3(3-0)  P: WRA 202 or WRA 260  P: Completion of Tier I Writing Requirement  R: Open to undergraduate students in the Professional and Public Writing Major or approval of department  
Workshop for students developing writing for a variety of print and online publications. Discussion of and practice with freelance writing, author guidelines, and editorial processes.  
SA: AL 355  
Effective Fall 2019  Effective Spring 2023

WRA 360  Design of Print and Digital Documents  
Fall of every year. Spring of every year. 4(4-0)  P: (WRA 202 or concurrently) or (WRA 260 or concurrently)  P: Completion of Tier I Writing Requirement  R: Open to students in the Experience Architecture Major or in the Professional and Public Writing Major or approval of department  
Rhetorical and cultural dimensions of composing and designing print and digital documents. Analysis and composing of documents with attention to rhetorical affordances including typography, and color theory.  
SA: AL 360  
Effective Fall 2019  Effective Spring 2023

WRA 370  Introduction to Grammar and Editing (W)  
Fall of every year. Spring of every year. 3(3-0)  P: (WRA 202 or WRA 260) and completion of Tier I writing requirement  P: Completion of Tier I Writing Requirement  R: Open to undergraduate students in the Professional and Public Writing Major or approval of department  
Principles and practices of copyediting for professional and public writers, with special attention to grammar, style, and rhetorical issues.  
Effective Fall 2019  Effective Spring 2023
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Term(s)</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Co-requisites</th>
<th>Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRA 401</td>
<td>Rhetoric, Leadership, and Innovation</td>
<td>Spring of every year</td>
<td>3(3-0)</td>
<td>P: WRA 202 or WRA 260 P: Completion of Tier I Writing Requirement R: Open to undergraduate students in the Professional and Public Writing Major or approval of department. Exploration of rhetorical theories applied to managing and leading communication in civic and professional organizations. Emphasis on team dynamics and on managing and leading teams and projects. Discussion of entrepreneurial thinking in professional and public writing.</td>
<td>Effective Fall 2019 Effective Spring 2023</td>
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<tr>
<td>WRA 410</td>
<td>Advanced Web Authoring</td>
<td>Spring of every year</td>
<td>3(3-0)</td>
<td>P: (WRA 202 or WRA 260) and WRA 210 P: WRA 210 R: Open to students in the Digital Rhetoric and Professional Writing Major or in the Experience Architecture Major or in the Professional and Public Writing Major or approval of department. R: Open to students in the Experience Architecture Major or in the Professional and Public Writing Major or in the Writing Minor and open to graduate students in the Rhetoric and Writing Major or approval of department. Introduction to team-based approaches to web development, with focus on rhetorical strategies and ethical practices. Visual design, usability, media integration, site management and sustainability, and web accessibility. Grounded in content-management systems and advanced programming languages. SA: AL 410</td>
<td>Effective Fall 2019 Effective Spring 2023</td>
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<td>WRA 415</td>
<td>Digital Rhetoric</td>
<td>Fall of every year</td>
<td>3(3-0)</td>
<td>P: WRA 202 or WRA 260 P: Completion of Tier I Writing Requirement R: Open to students in the Digital Rhetoric and Professional Writing Major or in the Professional and Public Writing Major or approval of department. Rhetorical, social, political, economic, and ethical dimensions of digital communication, including identity, community, genre, and events. Rhetorical dynamics of communication across digital spaces such as apps, websites, software, and other experiences. SA: AL 415</td>
<td>Effective Fall 2019 Effective Spring 2023</td>
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<td>WRA 420</td>
<td>Content Strategy</td>
<td>Spring of every year</td>
<td>3(3-0)</td>
<td>P: WRA 320 P: Completion of Tier I Writing Requirement R: Open to students in the Experience Architecture Major or in the Professional and Public Writing Major and open to graduate students in the Department of Writing, Rhetoric and American Cultures or approval of department. R: Open to students in the Experience Architecture Major or in the Professional and Public Writing Major or in the Writing Minor and open to graduate students in the Rhetoric and Writing Major or approval of department. Exploration of theory, practice, and ethics of content strategy in professional and public writing settings. Understanding the content management life cycle, aligning content strategy to various goals, assessing communication needs for audiences and participants. Issues in project leadership, management, intellectual property, and organizational communication for creating flexible, dynamic content and content structures.</td>
<td>Effective Fall 2019 Effective Spring 2023</td>
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<td>WRA 441</td>
<td>Social Justice as Rhetorical Practice</td>
<td>Fall of odd years</td>
<td>3(3-0)</td>
<td>P: (WRA 202 or WRA 260) and completion of Tier I writing requirement P: Completion of Tier I Writing Requirement R: Open to students in the Department of Writing, Rhetoric and American Cultures or approval of department. Rhetorical, cultural, and historical analyses of significant texts in peace and justice movements. Production of effective texts in support of social, economic, and environmental justice and social entrepreneurship.</td>
<td>Effective Fall 2019 Effective Spring 2023</td>
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</table>
WRA 453  Grant and Proposal Writing  
Fall of every year. 3(3-0)  P: WRA 202 or WRA 260  P: Completion of Tier I Writing Requirement  P: Open to students in the Department of Forestry and open to students in the Professional and Public Writing Major or approval of department. 
Researching and writing grants and proposals for corporations, nonprofit organizations, businesses, and government agencies. Rhetorical dimensions of pitching and proposing, with various moves and methods of support such as preparing rationale statements, and creating budgets.
SA: AL 453  Effective Fall 2019 Effective Spring 2023

WRA 471  Rhetoric of Grammar  
Spring of every year. 3(3-0)  P: WRA 370  P: Completion of Tier I Writing Requirement  P: Open to students in the Professional and Public Writing Major or approval of department. 
Rhetorical, cultural, and ethical dimensions of grammar and style, paying special attention to the role of rhetorical context in ideas of grammaticality and appropriateness.
Effective Fall 2019 Effective Spring 2023

WRA 480  Publication Management  
Fall of every year. Spring of every year. 3(3-0)  A student may earn a maximum of 6 credits in all enrollments for this course.  P: WRA 370  or approval of department  P: Completion of Tier I Writing Requirement  P: Open to students in the Professional and Public Writing Major or approval of department.  P: Open to students in the Experience Architecture Major or in the Professional and Public Writing Major or in the Writing Minor and open to graduate students in the Rhetoric and Writing Major or approval of department. 
Experience in publication processes: creating, designing, editing, and managing periodical, book, or online publications. Copyediting, developmental editing, design and layout, distribution and publicity. Rhetorical approaches to editing. Team processes involved in designing and editing publications.
SA: WRA 380  Effective Fall 2019 Effective Spring 2023

WRA 482  Information and Interaction Design  
Fall of even years. 3(3-0)  P: WRA 210  P: Completion of Tier I Writing Requirement  RB: At least one of the following: web design, database design, graphic design, document design.  P: Open to students in the Department of Writing, Rhetoric and American Cultures or approval of department.  P: Open to students in the Experience Architecture Major or in the Professional and Public Writing Major or in the Writing Minor and open to graduate students in the Rhetoric and Writing Major or approval of department. 
Effective Fall 2019 Effective Spring 2023

WRA 483  Community Publishing  
Spring of every year. 3(3-0)  A student may earn a maximum of 6 credits in all enrollments for this course.  P: (WRA 202 or WRA 260) and (WRA 360 or WRA 370)  P: Completion of Tier I Writing Requirement  P: Open to undergraduate students in the Department of Writing, Rhetoric and American Cultures or approval of department.  P: Open to undergraduate students in the Department of Writing, Rhetoric and American Cultures or approval of department. 
Project-based focus on developing and producing writing projects coordinated with the Digital Publishing Lab. Emphasis on collaborative action, drafting, and editing, defining goals; managing publication distribution.
Effective Fall 2019 Effective Spring 2023

WRA 484  Ethics in Writing  
Fall of every year. 3(3-0)  P: WRA 202 or WRA 260  P: Completion of Tier I Writing Requirement  P: Open to undergraduate students in the Department of Writing, Rhetoric and American Cultures or approval of department. 
Ethical issues related to professional and public writing including censorship, copyright, ethical practices and philosophies of editing, open access, privacy, preservation, and accessibility. Attention to cultural issues, including cultural appropriation and culturally relevant practices.
Effective Fall 2019 Effective Spring 2023