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.
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.

1One 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
PART I – NEW PROGRAMS AND PROGRAM CHANGES

MICHIGAN STATE UNIVERSITY
March 19, 2024

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 Disciplinary Teaching Minor in Agriculture, Food and Natural Resource Education in the Department of Community Sustainability. The Teacher Education Council (TEC) approved this request at its February 12, 2024 meeting.

   a. Under the heading AGRICULTURE, FOOD AND NATURAL RESOURCE EDUCATION make the following changes:

      (1) In item 1. change the total credits from ‘14’ to ‘16’ and delete the following courses:

      TE 409 Crafting Teaching Practices in the Secondary Teaching Minor 1
      TE 503 Internship in Teaching Diverse Learners in Additional Endorsement Areas 1

      Add the following courses:

      CSS 210 Fundamentals in Soil Science 3
      CSUS 493 Professional Internship in Community Sustainability 1

      (2) Delete item 3. and renumber items 4. and 5. Respectively.

      (3) Change the total number of credits required for the minor from ‘28 or 29’ to ‘28’.

   Effective Fall 2024.

2. Change the requirements for the Bachelor of Science degree in Forestry in the Department of Forestry.

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

      (1) In item 3. a. change the total credits from ‘67’ to ‘68’.

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

      FOR 340L Forest Ecology Laboratory 1

      Add the following course:

      FOR 340L Forest Ecology Laboratory 2

   Effective Fall 2024.
COLLEGE OF ARTS AND LETTERS

1. Change the requirements for the Disciplinary Teaching Minor in English that is available for secondary certification in the Department of English. The Teacher Education Council (TEC) approved this request at its February 12, 2024 meeting.

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

   1. All of the following courses (12 credits):
      - ENG 210 Introduction to Literary Studies     3
      - ENG 280 Introduction to Literary Theories     3
      - ENG 302 Introduction to English Language Studies     3
      - ENG 308 Readings in Literature for Young Adults     3

   2. One of the following courses (3 credits):
      - ENG 360 Studies in Postcolonial and Diaspora Literature (W)     3
      - ENG 362 Studies in Modern/Contemporary Literature (W)     3
      - ENG 364 Studies in 18th-/19th-Century Literature (W)     3
      - ENG 368 Studies in Medieval/Early Modern Literature (W)     3

   3. One of the following courses (3 or 4 credits):
      - ENG 408 Critical Literacies and Communities     4
      - ENG 413 Critical Questions in Language and Composition (W)     3

   4. All of the following courses (7 credits):
      - TE 310 Clinical Experience in English Education I     3
      - TE 411 Seminar in English Education I     3
      - TE 503 Internship in Teaching Diverse Learners in Additional Endorsement Areas     1

   Where 25 or 26

   Effective Fall 2024.

ELI BROAD COLLEGE OF BUSINESS

1. Change the requirements for the Master of Business Administration degree in STEM in The Eli Broad College of Business and Graduate School of Management. The University Committee on Graduate Studies (UCGS) approved this request at its February 19, 2024 meeting.

   a. Under the heading Requirements for the STEM Master of Business Administration Degree make the following changes:

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FI 859</td>
<td>Mergers and Acquisitions</td>
<td>1.5</td>
</tr>
<tr>
<td>FI 863</td>
<td>Corporate Restructuring and Governance</td>
<td>1.5</td>
</tr>
<tr>
<td>FI 875</td>
<td>Behavioral Finance I</td>
<td>1.5</td>
</tr>
<tr>
<td>MKT 811</td>
<td>Brand Insights</td>
<td>1.5</td>
</tr>
<tr>
<td>MKT 829</td>
<td>Digital Marketing</td>
<td>1.5</td>
</tr>
</tbody>
</table>

   Effective Fall 2024.
COLLEGE OF COMMUNICATION ARTS AND SCIENCES

1. Establish a Graduate Certificate in Health and Risk Communication in the College of Communication Arts and Sciences. The University Committee on Graduate Studies (UCGS) approved this request at its January 22, 2024 meeting.

   a. Background Information:

   The existent Master of Arts Degree in Health Communication has traditionally been a strong-suit of MSU – with a Health and Risk Communication Center of over 50 faculty, multiple NIH- and foundation grants, and connections to university-, state-, federal-, and global health authorities. Moreover, at both the undergraduate as well as the doctoral level, health communication is one of the most widely studied communication context in the college (next to media).

   Critically, however, there is a strong demand for sub-areas of expertise within health communication that would benefit working professionals wanting to upgrade their knowledge and skills in a shorter period and in a way more commensurate with the working professionals' needs and expectations. Currently, the master's program recruits primarily from on-campus students and while some of them work, they are not working professionals. The certificate would open an entire new target audience – working professionals from the broad fields of health communication, public health, and health education, who want to upgrade their career, but would not enroll directly in an on-site master's program. This provides a world-class professional development opportunity for individuals to enhance their expertise in health communication. The work world of mid-career health communication professionals is changing rapidly, and they need a way to update their skills, particularly with regard to the cutting-edge developments in health communication on social media, new forms of health interventions/promotion in an ever-changing media environment, and new challenges as evidenced by Covid.

   b. Academic Programs Catalog Text:

   The Graduate Certificate in Health and Risk Communication is designed for working professionals seeking to master the art of effective communication in vital health and risk contexts. The program equips students with the skills to create and disseminate health information, communicate strategically about risk, and confidently engage diverse audiences in digital, community, and workplace settings to foster healthy behaviors and reduce unhealthy or risky behavior patterns.

   Admission

   To be considered for admission to the Graduate Certificate in Health and Risk Communication, applicants must:

   1. have completed a bachelor's degree;
   2. provide a personal statement which includes the motivations, expectations, and prior experience relevant to the certificate program;
   3. provide a resume or curriculum vitae;
   4. submit test scores of English language proficiency if English is not their first language.

   Requirements for the Graduate Certificate in Health and Risk Communication

   Students must complete 9 credits from the following courses:

   1. Both of the following courses (6 credits):

   - CAS 825 Mass Communication and Public Health 3
   - CAS 826 Health Communication for Diverse Populations 3

   2. One of the following courses (3 credits):

   - COM 828 Cross-Cultural Communication 3
   - COM 860 Persuasion 3
   - CAS 892 Special Topics 3

   Students selecting CAS 892 Special Topics must enroll in the Risk Communication section or the Communication and Technology section.

   Effective Summer 2024.
2. Change the requirements for the Bachelor of Arts degree in Communication in the Department of Communication.

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

      (1) In item 3. a. (4) (b) under the Communication Science, Analytics and Research Methods concentration, replace item 1. with the following:

         Both of the following courses (6 credits):
         COM 301 Special Topics I Communication Sciences, Analytics and Research Methods 3
         COM 494 Practicum in Communication Research and Instruction 3
         The topic taken in COM 301 must be different than the topic taken in COM 301 in item 2. if COM 301 is used to fulfill the requirement in item 2.

      (2) In item 3. a. (4) (b) under the Communication Science, Analytics and Research Methods concentration, replace the note in item 2. with the following:

         Students who use COM 301 to fulfill this requirement must take a different topic than the topic taken in requirement 1. COM 301 may be taken two times to fulfill this requirement with different topics.

      (3) In item 3. a. (4) (b) under the Health Communication concentration, in item 2. delete the following course:

         HM 101 Introduction to Public Health 3

         Add the following course:

         PH 101 Introduction to Public Health 3

      (4) In item 3. a. (4) (b) under the Intercultural Communication concentration, in item 2. delete the following course:

         CSUS 250 Global Issues in Agriculture and Natural Resources 3

      (5) In item 3. a. (4) (b) under the Mediated Communication concentration, in item 2. delete the following course:

         WRA 425 Advanced Multimedia Writing 3

   Effective Summer 2024.

3. Change the requirements for Master of Arts Degree in Media and Information. The University Committee on Graduate Studies (UCGS) approved this request at its February 19, 2024 meeting.

   a. Under the heading Master of Arts Degree in Media and Information replace items 1. and 2. with the following:

      1. The following core course (1 credit):
         MI 810 Media and Information Seminar 1

      2. At least one of the following theories courses (3 credits):
         MI 820 Theories of Media and Information 3
         MI 831 Theories of Games and Interaction Design 3

      3. At least one of the following methods courses (3 credits):
         MI 803 Introduction to Quantitative Research Methods 3
         MI 841 Advanced Methods of Understanding Users 3

      4. At least three of the following specialization classes (9 credits):
         MI 839 Game and Project Design Studio I 3
         MI 844 Interaction Design 3
PART I – NEW PROGRAMS AND PROGRAM CHANGES

1. Change the requirements for the Doctor of Education degree in Educational Leadership in the Department of Educational Administration. The University Committee on Graduate Studies (UCGS) approved this request at its February 19, 2024 meeting.

   a. Under the heading Requirements for the Doctor of Education Degree in Educational Leadership make the following changes:

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

         EAD 921 Educational Leadership and Transformation 3
         EAD 922 Analyzing Education Systems 3

         Add the following courses:

         EAD 921A Educational Leadership and Transformation I 2
         EAD 921B Educational Leadership and Transformation II 1
         EAD 922A Analyzing Education Systems I 2
         EAD 922B Analyzing Education Systems II 1

      (2) In item 2., delete the following course:

         EAD 924 Data and Decisions 3

         Add the following courses:

         EAD 924A Data and Decisions I 3
         EAD 924B Data and Decisions II 1

      (3) In item 3., change the credits of 'EAD 980' from '3' to '2'.

   Effective Fall 2024.
COLLEGE OF ENGINEERING

1. Change the requirements in the Bachelor of Science degree in Computational Data Science in the Department of Computer Science and Engineering.

   a. Under the heading Requirements for the Bachelor of Science Degree in Computational Data Science make the following change:

      (1) In item 3. b. change the total credits from ‘44’ to ‘47’ and add the following course:
          CSE 380 Information Management and the Cloud  3

   Effective Fall 2024.

2. Change the requirements in the Bachelor of Science degree in Computer Science in the Department of Computer Science and Engineering. The University Committee on Undergraduate Education (UCUE) approved this request at its February 8, 2024 meeting.

   The concentrations in the Bachelor of Science degree in Computer 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 Computer Science make the following changes:

      (1) In item 3. b. change the total credits from ‘35’ to ‘32’ and delete the following courses:
          CSE 425 Introduction to Computer Security    3
          MTH 314 Matrix Algebra with Computational Applications  3
          Add the following course:
          CSE 380 Information Management and the Cloud  3

      (2) In item 3. b. add the following note:
          Students must have a minimum grade of 2.0 in each of the following courses: CSE 300, CSE 320, CSE 325, CSE 331, CSE 335, CSE 380.

      (3) Reletter item 3. c. to item 3. d. and item 3. d. to item 3. e. respectively.

      (4) Add the following item 3. c.:

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

          MTH 314 Matrix Algebra with Computational Applications  3
          MTH 317H Honors Linear Algebra  4

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

          CSE 425 Introduction to Computer Security    3

      (6) Add the following transcriptable concentrations:

Concentrations in Computer Science
The Department offers the following concentrations to students wishing an area of specialization in their degree. The concentrations are available to, but not required of, any student enrolled in the Bachelor of Science degree program in Computer Science. NOTE: Completing the Bachelor of Science degree in Computer Science with a concentration may require more than 120 credits. Upon completion of the required courses for a concentration, certification will appear on the student’s official transcript. Students may select no more than one concentration.
For any concentration, 3 credits of CSE 499 Undergraduate Research related to the subject area may be applied with approval of the Department of Computer Science and Engineering.

**Artificial Intelligence**
To complete a Bachelor of Science degree in Computer Science with an artificial intelligence concentration, students must complete the requirements for the bachelor’s degree, including the following:

**Two of the following courses (6 credits):**
- CSE 404 Intro to Machine Learning 3
- CSE 440 Introduction to Artificial Intelligence 3
- CSE 482 Big Data Analysis 3

**Three of the following courses not taken above (9 to 12 credits):**
- CSE 402 Biometrics and Pattern Recognition 3
- CSE 404 Intro to Machine Learning 3
- CSE 434 Autonomous Vehicles 3
- CSE 440 Introduction to Artificial Intelligence 3
- CSE 482 Big Data Analysis 3
- CSE 803 Computer Vision 3
- ADV 401 Neuromarketing and Consumer Decisions 3
- LIN 401 Introduction to Linguistics 4
- LIN 424 Introduction to Phonetics and Phonology 3
- LIN 427 Laboratory Phonetics 3
- LIN 431 Introduction to Morphology 3
- LIN 434 Introduction to Syntax 3
- LIN 437 Introduction to Semantics and Pragmatics 3
- LIN 465 Introduction to Cognitive Science 3
- LIN 471 Sociolinguistics 3
- MI 484 Human Robot Interaction (W) 3
- MTH 468 Predictive Analysis 3
- NEU 301 Introduction to Neuroscience I 3
- NEU 302 Introduction to Neuroscience II 3
- PHL 330 Formal Deductive Reasoning 4
- PHL 331 Formal Practical Reasoning 4
- PHL 432 Logic and its Metatheory 4
- PSY 301 Cognitive Neuroscience 3

**Computer Systems**
To complete a Bachelor of Science degree in Computer Science with a computer systems concentration, students must complete the requirements for the bachelor’s degree, including the following:

**All of the following courses (9 credits):**
- CSE 410 Operating Systems 3
- CSE 422 Computer Networks 3
- CSE 450 Translation of Programming Languages 3

**Two of the following courses (6 credits):**
- CSE 415 Introduction to Parallel Programming 3
- CSE 420 Computer Architecture 3
- CSE 425 Introduction to Computer Security 3
- CSE 434 Autonomous Vehicles 3
- CSE 472 Computer Graphics 3
- CSE 480 Database Systems 3

**Cybersecurity**
To complete a Bachelor of Science degree in Computer Science with a cybersecurity concentration, students must complete the requirements for the bachelor’s degree, including the following:

**All of the following courses (6 credits):**
- CSE 402 Biometrics and Pattern Recognition 3
- CSE 425 Introduction to Computer Security 3

**Three of the following courses (9 credits):**
- CSE 410 Operating Systems 3
- CSE 422 Computer Networks 3
- CSE 431 Algorithm Engineering 3
### Multimedia and Graphics

To complete a Bachelor of Science degree in Computer Science with a multimedia and graphics concentration, students must complete the requirements for the bachelor's degree, including the following:

- **Two of the following courses (6 credits):**
  - CSE 471 Media Processing and Multimedia Computing
  - CSE 472 Computer Graphics
  - CSE 476 Mobile Application Development
  - CSE 477 Web Application Architecture and Development

- **Three of the following courses not taken above (8 or 9 credits):**
  - CSE 471 Media Processing and Multimedia Computing
  - CSE 472 Computer Graphics
  - CSE 476 Mobile Application Development
  - CSE 477 Web Application Architecture and Development
  - CSE 803 Computer Vision
  - CMSE 402 Data Visualization Principles and Techniques
  - FLM 230 Introduction to Film
  - FLM 260 Introduction to Digital Film and Emergent Media
  - MI 231 Game and Interactive Media Development
  - MI 247 Three-Dimensional Graphics and Design
  - MI 337 Compositing and Special Effects
  - MI 347 Advanced Three-Dimensional Computer Animation
  - MI 350 Evaluating Human-Centered Technology
  - MI 377 Advanced 3D Modeling
  - MI 445 Game Design and Development I
  - MI 450 Creating Human-Centered Technology
  - MI 455 Game Design and Development II
  - MI 462 Social Media and Social Computing
  - MI 482 Building Virtual Worlds (W)
  - MI 497 Game Design Studio
  - STA 380 Electronic Art
  - STA 384 Experiments in Digital Video
  - THR 205 Media Acting I
  - THR 419 Projection Design for Live Performance

### Software Engineering

To complete a Bachelor of Science degree in Computer Science with a software engineering concentration, students must complete the requirements for the bachelor's degree, including the following:

- **The following course (3 credits):**
  - CSE 435 Software Engineering

- **Four of the following courses (12 credits):**
  - CSE 431 Algorithm Engineering
  - CSE 476 Mobile Application Development
  - CSE 477 Web Application Architecture and Development
  - CSE 480 Database Systems
  - CSE 870 Advanced Software Engineering
  - MI 350 Evaluating Human-Centered Technology
  - MI 420 Interactive Prototyping
  - MI 450 Creating Human-Centered Technology (W)

### Theory

To complete a Bachelor of Science degree in Computer Science with a theory concentration, students must complete the requirements for the bachelor's degree, including the following:

- **The following course (3 credits):**
  - CSE 460 Computability and Formal Language Theory
PART I – NEW PROGRAMS AND PROGRAM CHANGES

One of the following courses (3 credits):
CSE 431 Algorithm Engineering  3
CSE 830 Design and Theory of Algorithms  3

Three of the following courses (9 or 10 credits):
CSE 835 Algorithmic Graph Theory  3
CSE 860 Foundations of Computing  3
MTH 299 Transitions  4
MTH 416 Introduction to Algebraic Coding  3
MTH 417 Topics in Number Theory  3
MTH 880 Combinatorics I  3
MTH 882 Combinatorics II  3

Effective Fall 2024.

3. Change the requirements in the Minor in Computer Science in the Department of Computer Science and Engineering.

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

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

   CSE 300 Social, Ethical, and Professional Issues in Computing  1

   (2) In item 1., change the total credits from ‘12’ to ‘13’.

   (3) In item 2 add the following courses:

   CSE 380 Information Management and the Cloud  3
   CSE 434 Autonomous Vehicles  3

Effective Fall 2024.

COLLEGE OF NATURAL SCIENCE

1. Change the requirements for the Bachelor of Science degree in Environmental Biology/Zoology in the Department of Integrative Biology.

a. Under the heading Requirements for the Bachelor of Science Degree in Environmental Biology/Zoology make the following changes:

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

   The University's Tier II writing requirement for the Environmental Biology/Zoology major is met by completing both of the following courses: Zoology 355L and 445. Those courses are referenced in item 3. below.

   (2) Replace item 3. d. with the following:

   One of the following groups of courses (8 or 10 credits):

   (1) PHY 221 Studio Physics for Life Scientists I  4
   PHY 222 Studio Physics for Life Scientists II  4
   (2) PHY 231 Introductory Physics I  3
   PHY 232 Introductory Physics II  3
   PHY 251 Introductory Physics Laboratory I  1
   PHY 252 Introductory Physics Laboratory II  1
   (3) PHY 183 Physics for Scientists and Engineers I  4
   PHY 184 Physics for Scientists and Engineers II  4
   PHY 191 Physics Laboratory for Scientists, I  1
   PHY 192 Physics Laboratory for Scientists, II  1
PART I – NEW PROGRAMS AND PROGRAM CHANGES

(4) LB 273 Physics I  4
    LB 274 Physics II  4

(5) PHY 193H Honors Physics I-Mechanics  4
    PHY 294H Honors Physics II-Electromagnetism  4
    PHY 191 Physics Laboratory for Scientists, I  1
    PHY 192 Physics Laboratory for Scientists, II  1

(3) In item 3. g. delete the following courses:
    IBIO 306 Invertebrate Biology  4
    IBIO 483 Environmental Physiology (W)  4

Add the following courses:
    GEO 221 Introduction to Geographic Information  3
    GEO 221L Introduction to Geographic Information Laboratory  1

Replace the note with the following:
Both Geography 221 and 221L must be completed to satisfy this requirement.
Forestry 419 may be substituted for GEO 221/221L. Forestry 340 may be substituted for Plant Biology 441.

(4) Replace item 3. h. with the following:

At least one course from each of the following three groups of courses totaling at least 13 credits:
(1) FW 471 Ichthyology  4
    IBIO 306 Invertebrate Biology  4
    IBIO 328 Comparative Anatomy and Biology of Vertebrates  4
    IBIO 360 Biology of Birds  4
    IBIO 365 Biology of Mammals  4
    IBIO 384 Biology of Amphibians and Reptiles (W)  4
(2) PLB 218 Plants of Michigan  3
    PLB 418 Plant Systematics  3
(3) FW 416 Marine Ecology and Management  3
    FW 420 Stream Ecology  3
    FW 444 Conservation Biology  3
    FW 472 Limnology  3
    GEO 324 Remote Sensing of the Environment  4
    GLG 421 Environmental Geochemistry  4
    IBIO 353 Marine Biology (W)  4
    IBIO 357 Global Change Biology (W)  3
    IBIO 446 Environmental Issues and Public Policy  3
    IBIO 483 Environmental Physiology  3
    IBIO 485 Tropical Biology  3
    PLB 424 Algal Biology  3

Effective Fall 2024.
2. Change the requirements for the Bachelor of Science degree in Integrative Biology in the Department of Integrative Biology.

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

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

The University's Tier II writing requirement for the Zoology major is met by completing both of the following courses: Zoology 355L and 445. Those courses are referenced in item 3. below.

(2) Replace item 3. d. with the following:

One of the following groups of courses (8 or 10 credits):

(1) PHY 221  Studio Physics for Life Scientists I  4
    PHY 222  Studio Physics for Life Scientists II  4
(2) PHY 231  Introductory Physics I  3
    PHY 232  Introductory Physics II  3
    PHY 251  Introductory Physics Laboratory I  1
    PHY 252  Introductory Physics Laboratory II  1
(3) PHY 183  Physics for Scientists and Engineers I  4
    PHY 184  Physics for Scientists and Engineers II  4
    PHY 191  Physics Laboratory for Scientists, I  1
    PHY 192  Physics Laboratory for Scientists, II  1
(4) LB 273  Physics I  4
    LB 274  Physics II  4
(5) PHY 193H  Honors Physics I-Mechanics  4
    PHY 294H  Honors Physics II-Electromagnetism  4
    PHY 191  Physics Laboratory for Scientists, I  1
    PHY 192  Physics Laboratory for Scientists, II  1

(3) In item 3. j. delete the following course:

IBIO 483  Environmental Physiology (W)  4

Add the following course:

IBIO 483  Environmental Physiology  3

Effective Fall 2024.

3. Change the requirements for the Bachelor of Arts degree in Zoology in the Department of Integrative Biology.

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

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

The University’s Tier II writing requirement for the Zoology major is met by completing both of the following courses: Zoology 355L and 445. Those courses are referenced in item 3. below.

(2) In item 3. d., add the following course:

PHY 221  Studio Physics for Life Scientists I  4

(3) In item 3. i. (1) Writing, delete the following course:
PART I – NEW PROGRAMS AND PROGRAM CHANGES

WRA 341  Nature, Environmental, and Travel Writing  3

(4) In item 3. i. (2) Communications, delete the following courses:

CSUS 325  Study and Practice of Communication for Sustainability (W)  3
FW 435  Integrated Communications for the Fisheries and Wildlife Professional  3

(5) In item 3. i. (3) Computer Systems, delete the following courses:

CSE 101  Computing Concepts and Competencies  3
CSE 201  Fundamentals of Information Technology  3
NSC 204  Introduction to Computational Modeling  4

Add the following course:

CMSE 201  Computational Modeling and Data Analysis I  4

Effective Fall 2024.

4. Change the requirements for the Bachelor of Science degree in Zoology in the Department of Integrative Biology.

The concentrations in the Bachelor of Science degree in Zoology 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 Zoology make the following changes:

(1) Replace item 3. d. with the following:

One of the following groups of courses (8 or 10 credits):

(1) PHY 221  Studio Physics for Life Scientists I  4
PHY 222  Studio Physics for Life Scientists II  4
(2) PHY 231  Introductory Physics I  3
PHY 232  Introductory Physics II  3
PHY 251  Introductory Physics Laboratory I  1
PHY 252  Introductory Physics Laboratory II  1
(3) PHY 183  Physics for Scientists and Engineers I  4
PHY 184  Physics for Scientists and Engineers II  4
(4) LB 273  Physics I  4
LB 274  Physics II  4
(5) PHY 193H  Honors Physics I-Mechanics  4
PHY 294H  Honors Physics II-Electromagnetism  4
PHY 191  Physics Laboratory for Scientists, I  1
PHY 192  Physics Laboratory for Scientists, II  1

(2) In item 3. g. Animal Behavior and Neurobiology concentration, make the following changes:

(a) In item (2), delete the following course:

IBIO 402  Neurobiology  3

Add the following course:

IBIO 300  Neurobiology  3

(b) Replace item (3) with the following:

One of the following, either (a) or (b) (4 or 8 credits):
PART I – NEW PROGRAMS AND PROGRAM CHANGES

(a) One of the following courses (4 credits):
- IBIO 306 Invertebrate Biology 4
- IBIO 328 Comparative Anatomy and Biology of Vertebrates 4

(b) Two of the following courses (8 credits):
- FW 471 Ichthyology 4
- IBIO 360 Biology of Birds 4
- IBIO 365 Biology of Mammals 4
- IBIO 384 Biology of Amphibians and Reptiles (W) 4

(c) In item (4) delete the following courses:
- ANS 405 Endocrinology of Reproduction 4
- FW 419 Applications of Geographic Information Systems to Natural Resource Management 4
- GEO 324 Remote Sensing of the Environment 4
- GEO 325 Geographic Information Systems 3
- IBIO 483 Environmental Physiology (W) 4
- PSY 402 Sensation and Perception (W) 3

Add the following courses:
- FOR 419 Applications of Geographic Information Systems to Natural Resource Management 4
- IBIO 483 Environmental Physiology 3
- NEU 310 Psychology and Biology of Human Sexuality 3
- NEU 416 Development of the Nervous System Through the Lifespan 3

(3) Delete the Cell and Developmental Biology concentration.

Students currently enrolled in the major have until US28 to complete the requirements for this concentration and have it noted on the student’s academic record.

(4) In item 3. g. Ecology, Evolution, and Organismal Biology concentration make the following changes:

(a) Replace item (2) with the following:

Two of the following courses (8 credits):
- FW 471 Ichthyology 4
- IBIO 306 Invertebrate Biology 4
- IBIO 328 Comparative Anatomy and Biology of Vertebrates 4
- IBIO 360 Biology of Birds 4
- IBIO 365 Biology of Mammals 4
- IBIO 384 Biology of Amphibians and Reptiles (W) 4

(b) In item (3) delete the following courses:
- IBIO 316 General Parasitology 3
- IBIO 483 Environmental Physiology (W) 4

Add the following course:
- IBIO 483 Environmental Physiology 3

(c) In item (4) delete the following courses:
- GEO 324 Remote Sensing of the Environment 4
- GEO 325 Geographic Information Systems 3
(5) Delete the **Genetics** concentration.

*Students currently enrolled in the major have until US28 to complete the requirements for this concentration and have it noted on the student's academic record.*

(6) Delete the **General Zoology** concentration.

*Students currently enrolled in the major have until US28 to complete the requirements for this concentration and have it noted on the student's academic record.*

(7) In item 3. g. **Marine Biology** concentration, make the following changes:

(a) In item (1) change the total credits from '23' to '21'.

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBIO 303</td>
<td>Oceanography</td>
<td>4</td>
</tr>
<tr>
<td>IBIO 483</td>
<td>Environmental Physiology (W)</td>
<td>4</td>
</tr>
</tbody>
</table>

Add the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLG 303</td>
<td>Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>IBIO 483</td>
<td>Environmental Physiology</td>
<td>3</td>
</tr>
</tbody>
</table>

(c) Replace item (2) with the following:

One course from each of the following groups of courses (7 or 8 credits):

(a) 
- FW 471 Ichthyology 4
- IBIO 306 Invertebrate Biology 4
- IBIO 360 Biology of Birds 4
- IBIO 365 Biology of Mammals 4
- IBIO 384 Biology of Amphibians and Reptiles (W) 4

(b) 
- BMB 401 Comprehensive Biochemistry 4
- CEM 383 Introductory Physical Chemistry I 3
- FW 416 Marine Ecology and Management 3
- FW 424 Wildlife Population Analysis and Management 3
- GEO 221 Introduction to Geographic Information 3
- GEO 221L Introduction to Geographic Information Laboratory 1

Both GEO 221 and 221L must be completed to satisfy this requirement.

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENT 469</td>
<td>Biomonitoring of Streams and Rivers</td>
<td>3</td>
</tr>
<tr>
<td>FW 474</td>
<td>Field and Laboratory Techniques for Aquatic Studies</td>
<td>3</td>
</tr>
<tr>
<td>IBIO 440</td>
<td>Field Ecology and Evolution</td>
<td>4</td>
</tr>
<tr>
<td>PLB 424</td>
<td>Algal Biology</td>
<td>4</td>
</tr>
</tbody>
</table>

Add the following course:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLB 424</td>
<td>Algal Biology</td>
<td>3</td>
</tr>
</tbody>
</table>

(8) Replace the **Zoo and Aquarium Science** concentration with the following:

(1) All of the following courses (25 credits):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBIO 313</td>
<td>Animal Behavior</td>
<td>3</td>
</tr>
<tr>
<td>IBIO 341</td>
<td>Fundamental Genetics</td>
<td>4</td>
</tr>
<tr>
<td>IBIO 355</td>
<td>Ecology</td>
<td>3</td>
</tr>
</tbody>
</table>
PART I – NEW PROGRAMS AND PROGRAM CHANGES

IBIO 355L Ecology Laboratory (W) 1
IBIO 369 Zoo Animal Biology and Conservation 3
IBIO 369 Introduction to Zoo and Aquarium Science 3
IBIO 445 Evolution (W) 3
IBIO 489 Seminar in Zoo and Aquarium Science 1
IBIO 498 Internship in Zoo and Aquarium Science 4

(2) Two of the following courses (8 credits):
FW 471 Ichthyology 4
IBIO 306 Invertebrate Biology 4
IBIO 328 Comparative Anatomy and Biology of Vertebrates 4
IBIO 360 Biology of Birds 4
IBIO 365 Biology of Mammals 4
IBIO 384 Biology of Amphibians and Reptiles (W) 4

(3) Three additional courses of at least 3 credits selected from a list of approved courses that is available from the Department of Integrative Biology.
(4) Integrative Biology courses that are not listed above must be approved in advance by the student’s academic advisor. Courses offered by other departments may be substituted if approved in advance by the student’s academic advisor.

Effective Fall 2024.

COLLEGE OF SOCIAL SCIENCE

1. Change the requirements for the Disciplinary Teaching Minor available for secondary certification in Psychology in the Department of Psychology. The Teacher Education Council (TEC) approved this request at its February 12, 2024 meeting.

a. Under the heading Psychology make the following changes:

(1) Delete the following course:

TE 409 Crafting Teaching Practices in the Secondary Teaching Minor 1

Add the following course:

TE 438 Teaching High School Psychology 3

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

Effective Fall 2024.
PART II - NEW COURSES

DEPARTMENT OF ART, ART HISTORY, AND DESIGN

GD 191   Special Topics in Graphic Design
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.
   Researching and designing special topics in Graphic Design. Topics vary.
   Effective Fall Semester 2024

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

CE 840   Introduction to Transportation Engineering
Fall of every year. Spring of every year. 3(3-0) R: Open to graduate students in the Department of Civil and Environmental Engineering. Not open to students with credit in CE 341.
   Introduction to transportation engineering, including: transportation planning, traffic engineering, geometric design, traffic flow and highway capacity, queuing theory, traffic control, and highway safety.
   Effective Fall Semester 2024

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CSE 380   Information Management and the Cloud
Fall of every year. Spring of every year. 3(3-0) P: CSE 232 R: Open to students in the College of Engineering or in the Lyman Briggs Computer Science Coordinate Major or in the Lyman Briggs Computer Science Major.
   Introduction to information management and cloud computing.
   Effective Fall Semester 2024

CSE 493   Selected Topics in Computing
Fall of every year. Spring of every year. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Approval of department; application required.
   Topics selected to supplement and enrich existing courses and lead to the development of new courses.
   Effective Fall Semester 2024

CSE 494   Independent Study in Data Science
Fall of every year. Spring of every year. Summer of every year. 1 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. Interdepartmental with Computational Mathematics, Science, and Engineering R: Open to students in the Computational Data Science Major or in the Computer Engineering Major or in the Computer Science Major or in the Data Science Major. Approval of department; application required.
   Supervised individual study in an area of Data Science.
   Effective Fall Semester 2024

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EAD 921A   Educational Leadership and Transformation I
Fall of every year. 2(2-0)
   Creating organizational value through leadership. Leading through conflict. Personal and collective leadership development. Connecting schools with civic life. Convening community groups for democratic deliberation.
   SA: EAD 921
   Effective Fall Semester 2024

EAD 921B   Educational Leadership and Transformation II
Spring of every year. 1(1-0) P: EAD 921A
   Creating organizational value through leadership. Leading through conflict. Personal and collective leadership development. Connecting schools with civic life. Convening community groups for democratic deliberation.
   SA: EAD 921
   Effective Spring Semester 2025
EAD 922A   Analyzing Educational Systems I  
Fall of every year. 1(1-0) 
Analyzing systems of educational organizations, including schools, local education agencies, and state education agencies. Theory and research on educational organizations to actual cases in order to identify interdependent strengths and weaknesses that support and/or undermine instructional improvement. 
SA: EAD 922 
Effective Fall Semester 2024

EAD 922B   Analyzing Education Systems II  
Spring of every year. 2(2-0) P: EAD 922A 
Analyzing systems of educational organizations, including schools, local education agencies, and state education agencies. Theory and research on educational organizations to actual cases in order to identify interdependent strengths and weaknesses that support and/or undermine instructional improvement. 
SA: EAD 922 
Effective Spring Semester 2025

EAD 924A   Data and Decisions I  
Fall of every year. 3(3-0) R: Open to graduate students in the Educational Leadership Major. 
SA: EAD 924 
Effective Fall Semester 2024

EAD 924B   Data and Decisions II  
Spring of every year. 1(1-0) P: EAD 924A 
SA: EAD 924 
Effective Spring Semester 2025

**CENTER FOR INTEGRATIVE STUDIES IN GENERAL SCIENCE**

ISE 800   Problems in Science or Mathematics for Teachers  
Fall of every year. Spring of every year. Summer of every year. 1 to 5 credits. A student may earn a maximum of 15 credits in all enrollments for this course. RB: Secondary certification in biological sciences, physical sciences or chemistry; secondary certification in Mathematics or Mathematics Education. R: Approval of college. 
REINSTATEMENT Supervised study of problems or issues in biological science, or physical sciences, or mathematical sciences. 
SA: NSC 800, SME 800 
Effective Fall Semester 2024

**JAMES MADISON COLLEGE**

MC 294   Qualitative Research Methods  
Fall of every year. 4(3-0) P: MC 111 and MC 201 and MC 202 or approval of college R: Open to undergraduate students in the James Madison College. 
Introduces students to qualitative methods of social science inquiry. 
Effective Fall Semester 2024

MC 483   Simulating International Relations  
Spring of odd years. 4(3-0) RB: ((MC 220 or concurrently) and MC 221) and completion of Tier I writing requirement 
Theories of conflict and cooperation in international politics, diplomatic tools to navigate those issues, simulations to apply theory to real-world scenarios such as climate change, humanitarian intervention or border disputes. 
Effective Fall Semester 2025
PART II – NEW COURSES

DEPARTMENT OF MEDIA AND INFORMATION

MI 810   Media and Information Seminar  
Fall of every year. Spring of every year. Summer of every year. 1(1-0) R: Open to master's students in the College of Communication Arts and Sciences or in the Department of Media and Information or in the Media and Information Major.  
Overview of scholarship, industry expectations, and job opportunities in the areas of media and information  
Effective Fall Semester 2024

MI 847   Special Topics in Games  
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. R: Open to graduate students in the Department of Media and Information.  
Topics in games studies. Emerging technologies, sociological impacts of games, making games inclusive, and accessibility for games, using industry standard tools for game development.  
Effective Fall Semester 2024

DEPARTMENT OF RELIGIOUS STUDIES

GNL 832   Project Management Principles for Nonprofits  
On Demand. 2(2-0)  
Management of projects in the nonprofit sector. Management of project lifecycle, time, quality, and costs. Project management tools and processes for efficient planning and implementation.  
Effective Fall Semester 2024

GNL 855   Monitoring, Evaluation, and Learning for Nonprofits  
On Demand. 2(2-0)  
Effective Fall Semester 2024

DEPARTMENT OF TEACHER EDUCATION

TE 860   Practice and Inquiry in Science Education  
Spring of every year. 3(3-0)  
REINSTATEMENT Teaching science subjects. Emphasis on learner diversity, learning community, conceptual understanding, subject matter content, and learners' prior knowledge.  
Effective Fall Semester 2024

TE 964   Critical Whiteness Studies in Education  
Fall of even years. 3(3-0) RB: TE 963 and/or TE 903 R: Open to doctoral students.  
Engage with various theoretical and empirical approaches to unveiling and disrupting whiteness and white supremacy in individual, institutional, and social contexts. Explore different ways of understanding the structures and impacts of white supremacy as a global project and its co-formations with other systems of oppression. Reflect on the material and epistemic impacts of whiteness in individual and collective lives, schooling experiences, scholarly contexts, and research approaches. Consider the possibilities of resisting and refusing these systems.  
Effective Fall Semester 2024
### DEPARTMENT OF THEATRE

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Terms Offered</th>
<th>Credits</th>
<th>Prerequisite(s)</th>
<th>Course Description</th>
<th>Effective Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 363</td>
<td>Costume Crafts</td>
<td>Fall of odd years</td>
<td>3(2-4)</td>
<td>P: THR 111 RB: THR 212 or concurrently</td>
<td>Craft techniques used in theatrical costuming. Projects and topics variable by term.</td>
<td>Effective Fall Semester 2024</td>
</tr>
<tr>
<td>THR 365</td>
<td>Props Design and Crafts for Theatre</td>
<td>Fall of even years</td>
<td>3(2-2)</td>
<td>RB: THR 111 or concurrently</td>
<td>Artistic and technical principles of prop design and crafts. Play analysis, research and creative interpretation of props design.</td>
<td>Effective Fall Semester 2024</td>
</tr>
<tr>
<td>THR 815</td>
<td>Drafting for Theatre</td>
<td>Spring of odd years</td>
<td>3(2-2)</td>
<td>R: Open to graduate students in the Department of Theatre or approval of department.</td>
<td>Introduction to the principles of hand and CAD drafting for theatre including terminology, best practices and fundamentals, scale and dimension drawings, sections, ground plans, auxiliary views and reproduction processes.</td>
<td>Effective Fall Semester 2024</td>
</tr>
<tr>
<td>THR 861</td>
<td>Lighting Technology for Theatre</td>
<td>Spring of even years</td>
<td>3(2-2)</td>
<td>R: Open to graduate students in the Department of Theatre or approval of department.</td>
<td>Study of contemporary lighting equipment, electrical practices, and advanced light board operation.</td>
<td>Effective Fall Semester 2024</td>
</tr>
<tr>
<td>THR 862</td>
<td>Costume Construction</td>
<td>Fall of even years</td>
<td>3(2-4)</td>
<td>R: Open to graduate students in the Department of Theatre or approval of department.</td>
<td>Sewing and Patterning methods used in theatrical costuming including flat patterning, draping, tailoring, pattern alteration, advanced stitching techniques.</td>
<td>Effective Fall Semester 2024</td>
</tr>
<tr>
<td>THR 863</td>
<td>Costume Crafts</td>
<td>Fall of odd years</td>
<td>3(2-4)</td>
<td>R: Open to graduate students in the Department of Theatre or approval of department.</td>
<td>Craft techniques used in theatrical costuming. Projects and topics variable by term.</td>
<td>Effective Fall Semester 2024</td>
</tr>
<tr>
<td>THR 864</td>
<td>Scene Painting for Theatre</td>
<td>Spring of odd years</td>
<td>3(2-2)</td>
<td>R: Open to graduate students in the Department of Theatre or approval of department.</td>
<td>Hands on study of traditional and contemporary techniques for painting 2D and 3D theatrical set pieces.</td>
<td>Effective Fall Semester 2024</td>
</tr>
<tr>
<td>THR 865</td>
<td>Props Design and Crafts for Theatre</td>
<td>Fall of even years</td>
<td>3(2-2)</td>
<td>R: Open to graduate students in the Department of Theatre or approval of department.</td>
<td>Artistic and technical principles of prop design and crafts. Play analysis, research and creative interpretation of props design.</td>
<td>Effective Fall Semester 2024</td>
</tr>
<tr>
<td>THR 869</td>
<td>Media and Audio Engineering for Theatre</td>
<td>Fall of odd years</td>
<td>3(2-2)</td>
<td>R: Open to graduate students in the Department of Theatre or approval of department.</td>
<td>System design and installation for media and audio technology use in theatre.</td>
<td>Effective Fall Semester 2024</td>
</tr>
</tbody>
</table>
OFFICE OF THE PROVOST

UGS 105   First-Year Seminar Reflection
Fall of every year. 1 credit. A student may earn a maximum of 2 credits in all enrollments for this course. P: UGS 102 or UGS 103 R: Open to freshmen. A student may earn a maximum of 8 credits UGS 102, 103, and 105
Application of global and experiential learning to personal and professional growth.
Connection between prior learning experiences off-campus with campus engagement.
Offered first half of semester.
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.
Effective Fall Semester 2024
PART III – COURSE CHANGES

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CSE 415  Introduction to Parallel Computing
Spring of every year. 3(3-0) P: (CSE 320 or ECE 331) and (MTH 314 or ECE 280) and CSE 331 P: (MTH 314 or MTH 317H or ECE 280) and CSE 331 R: Open to juniors or seniors in the College of Engineering or in the Lyman Briggs Computer Science Coordinate Major or in the Lyman Briggs Computer Science Major or in the Data Science Major. Not open to students with credit in CMSE 401.
Principles and techniques of parallel computing including architectures, programming models, and algorithm design.
Effective Fall Semester 2024

CSE 425  Introduction to Computer Security
Fall of every year. Spring of every year. 3(3-0) P: CSE 325 P: CSE 325 and CSE 380 R: Open to juniors or seniors in the College of Engineering or in the Lyman Briggs Computer Science Coordinate Major or in the Lyman Briggs Computer Science Major.
Theory and practice of computer security engineering.
Effective Fall Semester 2025

CSE 476  Mobile Application Development
Spring of every year. 3(3-0) P: CSE 320 or CSE 331 or CSE 335 P: CSE 380 R: Open to juniors or seniors in the College of Engineering or in the Computer Science Minor or in the Lyman Briggs Computer Science Coordinate Major or in the Lyman Briggs Computer Science Major.
Software development techniques for mobile devices such as smart phones and tablet computers.
Effective Fall Semester 2025

CSE 477  Web Application Architecture and Development
Spring of every year. 3(3-0) P: CSE 320 or CSE 331 or CSE 335 P: CSE 380 R: Open to juniors or seniors in the College of Engineering or in the Computer Science Minor or in the Lyman Briggs Computer Science Coordinate Major or in the Lyman Briggs Computer Science Major.
Fundamentals of World Wide Web (WWW) programming, including protocols, client-server interaction, markup languages, client- and server-side programming, databases, and remote procedure calls. Development of a WWW server and WWW sites with browser-based interfaces to remote databases. Students will incorporate scaling, throughput, and latency considerations in the development of widely-distributed systems. Fundamentals of World Wide Web (WWW) programming, including protocols, client-server interaction, markup languages, client- and server-side programming, databases, and remote procedure calls. Development of a WWW server and WWW sites with browser-based interfaces to remote databases.
Effective Fall Semester 2025

CSE 480  Database Systems
Spring of every year. 3(3-0) P: CSE 331 or CSE 335 P: CSE 380 R: Open to juniors or seniors in the College of Engineering or in the Computer Science Minor or in the Lyman Briggs Computer Science Coordinate Major or in the Lyman Briggs Computer Science Major or in the Data Science Major.
Principles and technologies for database systems, algorithms, languages, and applications.
SA: CPS 480
Effective Fall Semester 2025

CSE 482  Big Data Analysis
Spring of every year. 3(3-0) P: (CSE 331) and (STT 351 or STT 380 or STT 430 or STT 441) and MTH 314 and (MTH 234 or MTH 254H or LB 220) P: (CSE 331 and CSE 380) and (STT 351 or STT 380 or STT 430 or STT 441) and (MTH 314 or MTH 317H) and (MTH 234 or MTH 254H or LB 220) R: Open to juniors or seniors in the College of Engineering or in the Lyman Briggs Computer Science Coordinate Major or in the Lyman Briggs Computer Science Major or in the Data Science Major.
Principles and techniques for large-scale data analysis and applications.
Effective Fall Semester 2025
CSE 498  Collaborative Design (W)
Fall of every year. Spring of every year. 4(2-4) P: (CSE 402 or CSE 415 or CSE 422 or CSE 431 or CSE 440 or CSE 450 or CSE 471 or CSE 476 or CSE 482) and (CSE 402 or CSE 420 or CSE 425 or CSE 435 or CSE 440 or CSE 460 or CSE 472 or CSE 477 or CSE 480 or CSE 482) and ((CSE 300 and CSE 325 and CSE 335) and completion of Tier I writing requirement) R: Open to students in the Computer Science Major or in the Lyman Briggs Computer Science Coordinate Major.
Development of a comprehensive software and/or hardware solution to a problem in a team setting with emphasis on working with a client. Participation in a design cycle including specification, design, implementation, testing, maintenance, and documentation. Issues of professionalism, ethics, and communication. Students may be asked to sign a non-disclosure agreement (“NDA”) or an assignment of intellectual property rights (“IP Assignment”) to work with some project sponsors.
SA: CSE 449, CSE 478, CSE 479
Effective Fall Semester 2025

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EAD 921  Educational Leadership and Transformation
Fall of every year. 3(3-0) R: Open to graduate students in the Educational Leadership Major. Creating organizational value through leadership. Leading through conflict. Personal and collective leadership development. Connecting schools with civic life. Convening community groups for democratic deliberation. 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 Summer Semester 2024

EAD 922  Analyzing Education Systems
Fall of every year. 3(3-0)
Analyzing systems of educational organizations, including schools, local education agencies, and state education agencies. Theory and research on educational organizations to actual cases in order to identify interdependent strengths and weaknesses that support and/or undermine instructional improvement. 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 Summer Semester 2024

EAD 924  Data and Decisions
Fall of every year. 3(3-0) R: Open to graduate students in the Educational Leadership Major. Data collection and analysis for school improvement. Decision making criteria. Assessment of resource use and instructional learning outcomes. Data management. Legal and ethical use of data. Communication strategies. 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 Summer Semester 2024
EAD 980  Engaged Educational Leadership  
Summer of every year. 1 to 3 credits. 2(2-0) A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department.  
- Developing skills for engaged leadership.  
- Convening forums to discuss and disseminate ideas for improvement of educational organizations and educational policy.  
- Developing leadership skills that encourage and support agency of stakeholders.  
- Request the use of the Pass-No Grade (P-N) system.  
Effective Summer Semester 2024  

FOR 340L  Forest Ecology Laboratory  
Fall of every year. 1(0-3) 2(0-6) P: ((CSS 210) and completion of Tier I writing requirement) and (FOR 340 or concurrently) and (PLB 105 or BS 162 or LB 144) RB: IBIO 355  
- Field studies and data analysis of ecological processes central to the sustainable management of forest ecosystems.  
- Field exercises cover primary production, community structure, soil resources, biodiversity, succession, nutrient cycling, critiques of primary literature.  
- Weekend field trips required.  
- Field studies and data analysis of ecological processes central to the sustainable management of forest ecosystems.  
- Field exercises cover primary production, community structure, soil resources, biodiversity, succession, nutrient cycling, critiques of primary literature.  
- Pre-semester field camp required.  
SA: FOR 404L  
Effective Fall Semester 2024  

MC 320  Politics, Society and Economy in the Third World  Problems and Paradoxes in Global Development.  
Fall of every year. 4(3-0) P: (MC 221 or MC 231 or MC 281) and Completion of Tier I Writing Requirement  
R: Open to students in the James Madison College or approval of college.  
- Politics of social and economic change. Policies and strategies of development and of state and nation building in Third World countries.  
- Impact of international political, security, and economic structures on the process of state and nation building in the Third World.  
- Analyze the historical, political, economic and social dimensions of global development as both a paradigm and project.  
- Contextualize nation-and-state building efforts in the postcolonial world.  
Effective Fall Semester 2024  

IBUS 393  Introduction to International Business  
Fall of every year. Spring of every year. Summer of every year. 1 to 3 credits. Interdepartmental with Accounting, Finance, General Business and Business Law, Hospitality Business, Management, Supply Chain Management. R: Open to students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the School of Hospitality Business. R: Open to students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or in the School of Hospitality Business or approval of college.  
- Introduction to the context of international business delivered on-site in foreign settings.  
- Fundamental concepts and principles of globalization such as multinational corporations, foreign markets and economies, internal and external market transactions, international law, cultural influences, and multinational business strategies.  
- 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.  
SA: MKT 393  
Effective Spring Semester 2024
DEPARTMENT OF MEDIA AND INFORMATION

MI 841  Understanding Users  Advanced Methods of Understanding Users  
Fall of every year. 3(3-0) RB: Direct experience with the creative process in interactive media. R: Open to students in the College of Communication Arts and Sciences or in the Media and Information Major or in the Serious Game Design and Research Certificate or in the Educational Technology Major or in the Educational Technology Graduate Certificate or approval of department. 
Methods of user-centered research to support game, media and interaction design. Iterative cycles of user and product conceptualization. 
SA: TC 841  
Effective Fall Semester 2024

MI 851  Understanding and Managing Social Media  Data Analytics for User Generated Content  
Spring of every year. 3(3-0) R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. 
Overview of social media applications and services, social media history, social media affordances, effects on individuals, organizations, and society, and best practices for the management and study of social media. History and methodology of emerging research methods, including big data analysis. Insights into how to apply these findings in multiple domains, such as games or usability of apps. 
SA: TC 851  
Effective Fall Semester 2024

MI 862  Managing Digital Enterprises  Media and Information Project Management  
Spring of every year. 3(3-0) RB: MI 861 R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. 
SA: TC 862  
Effective Fall Semester 2024

MI 877  Global Media and Communications  
Fall of even years. 3(3-0) R: Open to graduate students in the College of Communication Arts and Sciences or approval of department. 
Comparative and international perspectives on approaches to traditional and new media and their transformations by increased global connectivity. Addresses broadcasting, cable TV, satellite, fixed networks, mobile communications, and the Internet. Political economy of media, economic, institutional and content issues. Interactions and media flows among countries. International governance bodies. 
SA: TC 877  
DELETE COURSE  
Effective Fall Semester 2024

DEPARTMENT OF PLANT, SOIL AND MICROBIAL SCIENCES

CSS 865  Environmental Organic Chemistry  
Spring of even years. Fall of odd years. 3(3-0) RB: Students with an environmental science background and course training in general or organic chemistry. 
Fate and transformation of organic contaminants in the environment. 
Effective Fall Semester 2025
CSS 880  Scientific Communication and Professional Development  
Spring of every year. Fall of every year. 4(0-2) 2(2-0) RB: Recommended for graduate students in CSS  
Interactive professional experiences including grant preproposal preparation and presentation, scientific presentations, mock position interviews, and resume preparation. Career management and pathways, scientific communication, and leadership skills designed to prepare students to become successful professionals in STEM. Request the use of the Pass-No Grade (P-N) system. Effective Fall Semester 2025

DEPARTMENT OF ROMANCE AND CLASSICAL STUDIES

ITL 101  Elementary Italian I  
Fall of every year. Spring of every year. Fall of every year. Spring of every year. Summer of every year. 4(4-1) 4(3-2) RB: No previous experience in Italian or approval of department. R: Not open to seniors. Practice in using and understanding Italian to develop listening, speaking, reading, and writing skills. Pronunciation, grammar, vocabulary, and cultural topics. Effective Fall Semester 2024

ITL 102  Elementary Italian II  
Fall of every year. Spring of every year. Fall of every year. Spring of every year. Summer of every year. 4(4-1) 4(3-2) P: ITL 101 Further practice in using and understanding Italian to develop listening, speaking, reading, and writing skills. Pronunciation, grammar, vocabulary, and cultural topics. Effective Fall Semester 2024

ITL 201  Second-Year Italian I  
Fall of every year. Spring of every year. Fall of every year. Spring of every year. Summer of every year. 4(4-0) 4(3-2) P: ITL 102 Intermediate-level review and development of aural comprehension, speaking, reading, and writing skills. Topics in Italian culture. Effective Fall Semester 2024

ITL 202  Second-Year Italian II  
Spring of every year. Fall of every year. Spring of every year. Summer of every year. 4(4-0) 4(3-2) P: ITL 201 Further review and development of aural comprehension, speaking, reading, and writing skills. Topics in Italian culture. Effective Fall Semester 2024

ITL 330  Italian Culture and Civilization  
Fall of every year. Fall of every year. Spring of every year. Summer of every year. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P: ITL 202 Diverse aspects of political, social, economic, intellectual, artistic, and literary life of Italy. Class discussion in Italian of readings, films, television programs, and musical selections. Effective Fall Semester 2024

ITL 350  Introduction to Italian Literature  
Overview of Italian Literature  
Spring of every year. Fall of every year. Spring of every year. 3(3-0) P: ITL 320 and completion of Tier I writing requirement P: ITL 202 and completion of Tier I writing requirement Italian literature from its origins to the present. Reading and discussion in Italian of representative works from all genres. Effective Fall Semester 2024
DEPARTMENT OF THEATRE

THR 211 Introduction to Lighting Design
Fall of every year. Spring of every year. Summer of every year. Fall of every year. Spring of every year. 3(2-2) P: THR 111 and THR 111L P: THR 111
Design and technical aspects regarding the design process and electrical production of stage lighting.
Effective Fall Semester 2024

THR 212 Introduction to Costume Design
Fall of odd years. Spring of even years. Fall of every year. Spring of every year. 3(2-2) P: THR 111 and THR 111L P: THR 111
Design and technical aspects regarding the process and production of stage costumes and costume history.
Effective Fall Semester 2024

THR 214 Introduction to Scene Design
Fall of every year. Spring of every year. Summer of every year. Fall of every year. Spring of every year. 3(2-2) P: THR 111 and THR 111L P: THR 111
Design and technical aspects regarding the design process and production of stage scenery.
Effective Fall Semester 2024

THR 216 Introduction to Sound Design
Fall of odd years. Spring of even years. Fall of every year. Spring of every year. 3(2-2) P: THR 111 and THR 111L P: THR 111
Design and technical aspects regarding the process and production of sound performance media, composition and sound reinforcement for the stage.
Effective Fall Semester 2024

THR 219 Introduction to Projection Design for the Stage
Fall of even years. Spring of odd years. Fall of every year. Spring of every year. 3(2-2) P: THR 111 and THR 111L P: THR 111
Design and technical aspects regarding the design process and production of projection performance media.
Effective Fall Semester 2024

THR 314 Stagecraft Stagecraft: Scenic Construction Techniques
Fall of every year. Spring of every year. 3(2-2) A student may earn a maximum of 6 credits in all enrollments for this course. P: THR 111 and THR 111L RB: THR 211 or concurrently
Theory and techniques of stagecraft for theatrical production. Introduction to the use of tools, materials, and techniques in theatrical scenic construction.
Effective Fall Semester 2024

THR 361 Topics in Lighting Technology Lighting Technology for Theatre
Fall of even years. Spring of even years. Spring of even years. 1 to 6 credits. 3(2-2) A student may earn a maximum of 9 credits in all enrollments for this course. A student may earn a maximum of 6 credits in all enrollments for this course. P: THR 214 RB: THR 211 or concurrently
Topics supplementing regular design and technology course offerings on a group study basis. Study of contemporary lighting equipment, electrical practices, and advanced light board operation.
Effective Fall Semester 2024

THR 362 Topics in Costume Technology Costume Construction
Fall of odd years. Spring of odd years. Fall of even years. Spring of even years. 1 to 6 credits. 3(2-2) A student may earn a maximum of 9 credits in all enrollments for this course. A student may earn a maximum of 6 credits in all enrollments for this course. P: THR 212 P: THR 111 RB: THR 212 or concurrently
Topics supplementing regular design and technology course offerings on a group study basis. Sewing and Pattern making methods used in theatrical costuming including flat patterning, draping, tailoring, pattern alteration, advanced stitching techniques.
Effective Fall Semester 2024
THR 364  Topics in Scenery Technology  Scene Painting for Theatre  
Fall of odd years. Spring of odd years. Spring of odd years. 1 to 6 credits. 3(2-2). A student may earn a maximum of 9 credits in all enrollments for this course. A student may earn a maximum of 6 credits in all enrollments for this course.
P: THR 214  RB: THR 111 or concurrently
Topics supplementing regular design and technology course offerings on a group study basis. Hands on study of traditional and contemporary techniques for painting 2D and 3D theatrical set pieces.
Effective Fall Semester 2024

THR 369  Topics in Digital Technology  Media and Audio Engineering for Theatre  
Fall of even years. Spring of even years. Fall of odd years. 1 to 6 credits. 3(2-2). A student may earn a maximum of 9 credits in all enrollments for this course. A student may earn a maximum of 6 credits in all enrollments for this course.
P: THR 216 or THR 219  RB: THR 111 or concurrently
Topics supplementing regular design and technology course offerings on a group study basis. System design and installation for media and audio technology in theatre.
Effective Fall Semester 2024