

MICHIGAN STATE UNIVERSITY  
University Committee on Curriculum

SUBCOMMITTEE A – AGENDA

**Via Teams**  
February 19, 2026  
1:30 p.m.

**PART I – NEW ACADEMIC PROGRAMS AND PROGRAM CHANGES**

**COLLEGE OF AGRICULTURE AND NATURAL RESOURCES**

1. Request to delete the curriculum and degree requirements for the **Minor in Technology Systems Management** in the Department of Biosystems and Agricultural Engineering. The University Committee on Undergraduate Education (UCUE) will provide consultative commentary to the Provost after considering this request. The Provost will make a determination after considering the consultative commentary from the University Committee on Undergraduate Education.

No new students are to be admitted to the program effective Spring 2024. No students are to be readmitted to the program effective Spring 2024. Effective Summer 2026, coding for the program will be discontinued and the program will no longer be available in the Department of Biosystems and Agricultural Engineering. Students who have not met the requirements for the Minor in Technology Systems Management through the Department of Biosystems and Agricultural Engineering prior to Summer 2026 will have to change their minor.

Note: This program has been in moratorium since Spring 2024.

2. Request to change the requirements for the **Bachelor of Science** degree in **Turfgrass Science and Management** in the Department of Plant, Soil and Microbial Sciences.
  - a. Under the heading **Requirements for the Bachelor of Science Degree in Turfgrass Science and Management** make the following changes:
    - (1) In item 3. d. delete the following courses:

TURF	202	World of Turf	2
TURF	232	Turf Cultural Practices	2

Add the following course:

TURF	242	Turf Cultural Practices	2
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    - (2) Change the total credits in 3. d. from '58' to '56'.

Effective Fall 2026.

3. Request to change the requirements for the **Minor in Turfgrass Management** in the Department of Plant, Soil and Microbial Sciences.
  - a. Under the heading **Requirements for the Minor in Turfgrass Management** make the following change:
    - (1) In item 1. delete the following course:

TURF	232	Turf Cultural Practices	2
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Add the following course:

TURF	242	Turf Cultural Practices	2
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Effective Fall 2026.

### **COLLEGE OF ENGINEERING**

1. Request to change the **Graduation Requirements for the Master of Science Degree** statement in the **College of Engineering**. The University Committee on Graduate Studies (UCGS) will consider this request at its February 23, 2026 meeting.

- a. Under the heading **Academic Standards** replace item 4. a. with the following:

Cumulative Grade–Point Average. Should a student's cumulative grade–point average fall below 3.00 after having completed 6 or more credits in courses in the approved program of study, the student may be enrolled in probational status in the master's degree program for one additional semester. If at the end of the additional semester the student's cumulative grade–point average is 3.00 or higher, the student may continue to enroll in the master's degree program. If at the end of the additional semester the student's cumulative grade–point average is still below 3.00, the student will be dismissed from the program. Students subject to dismissal for a cumulative grade–point average below 3.00 may appeal to the department, which may grant one additional semester of probation at its discretion.

- b. Delete the section **Transfer Credits**.

Effective Fall 2026.

2. Request to change the **Graduation Requirements for the Doctor of Philosophy Degree** statement in the **College of Engineering**. The University Committee on Graduate Studies (UCGS) will consider this request at its February 23, 2026 meeting.

- a. Under the heading **Academic Standards** replace item 5. a. with the following:

Cumulative Grade–Point Average. Should a student's cumulative grade–point average fall below 3.00 after having completed 6 or more credits in courses in the approved program of study, the student may be enrolled in probational status in the master's degree program for one additional semester. If at the end of the additional semester the student's cumulative grade–point average is 3.00 or higher, the student may continue to enroll in the doctoral degree program. If at the end of the additional semester the student's cumulative grade–point average is still below 3.00, the student will be dismissed from the program. Students subject to dismissal for a cumulative grade–point average below 3.00 may appeal to the department, which may grant one additional semester of probation at its discretion.

Effective Fall 2026.

3. Request to change the requirements in the **Bachelor of Science** degree in **Environmental Engineering** in the Department of Civil and Environmental Engineering.

- a. Under the heading **Requirements for the Bachelor of Science Degree in Environmental Engineering** make the following changes:

- (1) Replace item 3. b. with the following:

One of the following courses (4 credits):

CEM	142	General and Inorganic Chemistry	4
CEM	152	Principles of Chemistry	4

- (2) In item 3. e. **Technical Electives** delete the following course:

CSS	455	Environmental Pollutants in Soil and Water	3
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Add the following courses:

FW	410	Upland Ecology and Management	3
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FW	416	Marine Ecology and Management	3
FW	439	Conservation Ethics	3
HRT	460	Green Roofs and Walls	2
MC	450	International Environmental Law and Policy	3
PLB	443	Restoration Ecology	3
SOIL	455	Environmental Pollutants in Soil and Water	3

Effective Fall 2026.

### **COLLEGE OF NATURAL SCIENCE**

1. Request to change the requirements in the **Bachelor of Science** degree in **Genetics and Genomics** in the Department of Microbiology, Genetics, and Immunology.
  - a. Under the heading **Requirements for the Bachelor of Science Degree in Genetics and Genomics** make the following changes:
    - (1) In item 1., replace paragraph two with the following:  
  
The University's Tier II writing requirement for the Genetics and Genomics major is met by completing Microbiology, Genetics, and Immunology 408 or 434. Those courses are referenced in item 3. b. (2) below.
    - (2) In item 3. a. make the following changes:
      - (a) Change the total credits from '45 to 55' to '48 to 59'.
      - (b) In item (4) (a) change the credits of 'CEM 142' from '3' to '4'.
      - (c) In item (4) (b) change the credits of 'LB 172' from '4' to '3'.
      - (d) In item (4) (c) change the credits of 'CEM 152' from '3' to '4'.
      - (e) In item (5) change the total credits from '8' to '9 or 10'.
      - (f) In item (5) (a) change the credits of 'CEM 251 and 252' from '3' to '4'.
      - (g) In item (5) (b) change the credits of 'CEM 351 and 352' from '3' to '4'.
      - (h) In item (5) (c) change the credits of 'CEM 252' from '3' to '4'.
      - (i) In item (7) change the total credits from '6 to 8' to '8 or 10'.
    - (3) In item 3. b. change the total credits from '20' to '20 or 21'.
    - (4) In item 3. b. (1) change the total credits from '13' to '14 and change the credits of 'MGI 302' from '1' to '2'.
    - (5) In item 3. b. (2) delete the following course:
 

MGI	494L	Summer Undergraduate Research Institute I Genomics (W)	3
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    - (6) In item 3. c. delete the following courses:
 

CSS	350	Introduction to Plant Genetics	3
CSS	451	Biotechnology Applications for Plant Breeding and Genetics	3

Add the following courses:

CROP	350	Introduction to Plant Genetics	3
CROP	451	Biotechnology Applications for Plant Breeding and Genetics	3
CROP	460	Plant-Microbe Interactions	3

Effective Fall 2026.

2. Request to change the requirements in the **Bachelor of Science** degree in **Microbiology** in the Department of Microbiology, Genetics, and Immunology.
  - a. Under the heading **Requirements for the Bachelor of Science Degree in Microbiology** make the following changes:
    - (1) In item 1., replace paragraph two with the following:  
  
The University's Tier II writing requirement for the Microbiology major is met by completing Microbiology, Genetics, and Immunology 408. That course is referenced in item 3. b. (1) below.
    - (2) In item 3. a. make the following changes:
      - (a) Change the total credits from '41 to 51' to '42 to 53'.
      - (b) In item (4) (a) change the credits of 'CEM 142' from '3' to '4'.
      - (c) In item (4) (b) change the credits of 'LB 172' from '4' to '3'.
      - (d) In item (4) (c) change the credits of 'CEM 152' from '3' to '4'.
      - (e) In item (5) change the total credits from '8' to '9 or 10'.
      - (f) In item (5) (a) change the credits of 'CEM 251 and 252' from '3' to '4'.
      - (g) In item (5) (b) change the credits of 'CEM 351 and 352' from '3' to '4'.
      - (h) In item (5) (c) change the credits of 'CEM 252' from '3' to '4'.
      - (i) In item (6) (c) add the following courses:
 

PHY	191	Physics Laboratory for Scientists, I	1
PHY	192	Physics Laboratory for Scientists, II	1
      - (j) In item (6) (d) add the following courses:
 

PHY	191	Physics Laboratory for Scientists, I	1
PHY	192	Physics Laboratory for Scientists, II	1
      - (k) In item (7) (b) change the credits of 'STT 231' from '3' to '4'.
    - (3) In item 3. b. change the total credits from '16' to '17'.
    - (4) In item 3. b. (1) change the total credits from '10' to '14 and change the credits of 'MGI 302' from '1' to '2'.
    - (5) In item 3. b. (1) add the following course:
 

MGI	408	Advanced Microbiology Laboratory (W)	3
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    - (6) Delete item 3. b. (2).
    - (7) Renumber item 3. b. (3) to item 3. b. (2).

(8) In item 3. c. make the following changes:

(a) Change the total credits from '12 or 13' to '12 to 14'.

(b) Delete the following course:

MGI	445	Microbial Technology (W)	3
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Add the following courses:

CROP	460	Plant-Microbe Interactions	3
ENT	460	Medical Entomology	3

Effective Fall 2026.

3. Request to change the requirements for the **Bachelor of Science** degree in **Environmental Biology/Microbiology** in the Department of Microbiology and Molecular Genetics.

a. Under the heading **Requirements for the Bachelor of Science Degree in Environmental Biology/Microbiology** in item 3. 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/Microbiology major is met by completing Microbiology, Genetics, and Immunology 408. That course is referenced in item 3. b. (1) below.

(2) In item 3. a. make the following changes:

(a) Change the total credits from '58 to 68' to '59 to 70'.

(b) In item (2) delete the following course:

CSS	210	Fundamentals of Soil Science	3
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Add the following course:

SOIL	210	Fundamentals of Soil Science	3
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(c) In item (5) (a) change the credits of 'CEM 142' from '3' to '4'.

(d) In item (5) (c) change the credits of 'CEM 152' from '3' to '4'.

(e) In item (6) change the total credits from '8' to '9 or 10'.

(f) In item (6) (a) change the credits of 'CEM 251 and 252' from '3' to '4'.

(g) In item (6) (b) change the credits of 'CEM 351 and 352' from '3' to '4'.

(h) In item (6) (c) change the credits of 'CEM 252' from '3' to '4'.

(i) In item (7) (b) change the credits of 'STT 231' from '3' to '4'.

(3) In item 3. b. change the total credits from '19' to '20'.

(4) In item 3. b. (1) change the total credits from '13' to '17 and change the credits of 'MGI 302' from '1' to '2'.

(5) In item 3. b. (1) add the following course:

MGI	408	Advanced Microbiology Laboratory (W)	3
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- (6) Delete item 3. b. (2).
- (7) Renumber item 3. b. (3) to item 3. b. (2).
- (8) In item 3. c. make the following changes:
  - (a) In item (1) delete the following course:

CSS	455	Environmental Pollutants in Soil and Water	3
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Add the following course:

SOIL	455	Environmental Pollutants in Soil and Water	3
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  - (b) Add the following item (10):

CROP	460	Plant-Microbe Interactions	3
MGI	461	Microbial Pathogenesis	3
ENT	460	Medical Entomology	3

Effective Fall 2026.

## **PART II - NEW COURSES AND CHANGES**

### **COLLEGE OF AGRICULTURE AND NATURAL RESOURCES**

- ENT 477 Pesticides in Pest Management  
Fall of even years. 3(3-0)~~Interdepartmental with Crop and Soil Sciences, Horticulture~~ Interdepartmental with Cropping Systems Science, Horticulture RB: General chemistry, entomology, plant pathology, weed science. R: Open to juniors or seniors or graduate students.  
Chemistry, modes of action, product development and regulation of pesticides.  
Environmental and social aspects of pesticide use.  
Effective Fall Semester 2026
- ENT 478 Integrated Pest Management (W)  
Spring of odd years. 3(3-0)~~Interdepartmental with Crop and Soil Sciences, Forestry, Horticulture~~ Interdepartmental with Cropping Systems Science, Forestry, Horticulture P: (ENT 404 or PLP 405) and completion of Tier I writing requirement  
Theory, philosophy and application of pest management focusing on agricultural and natural systems.  
Effective Fall Semester 2026
- HRT 251 Organic Farming Principles and Practices  
~~Spring of every year. Fall of every year.~~ 3(3-0)~~Interdepartmental with Crop and Soil Sciences~~ History and principles of organic farming. Farms as ecological systems. Certification process and agencies. Organic matter management, the soil food web, and nutrient availability. Biodiversity, crop rotations, plant competition, ground cover, and plant health. Integrating crops and animals. Organic animal husbandry. Field trip required. ~~History and principles of organic farming. Farms as ecological systems. Certification process and agencies. Organic matter management, the soil food web, and nutrient availability. Biodiversity, crop rotations, plant competition, ground cover, and plant health. Integrating crops and animals. Organic animal husbandry.~~  
Effective Fall Semester 2026
- HRT 461 Seminar in Plant, Animal and Microbial Biotechnology  
Spring of every year. 1(1-0)~~Interdepartmental with Animal Science, Biosystems Engineering, Crop and Soil Sciences~~ Interdepartmental with Animal Science, Biosystems Engineering, Cropping Systems Science P: ~~(ANS 425 or concurrently) or (BE 360 or concurrently) or (CSS 451 or concurrently) or (MMG 445 or concurrently)~~ P: (ANS 425 or concurrently) or (BE 360 or concurrently) or (CROP 451 or concurrently)  
Current applications of plant, animal and microbial biotechnology in agriculture and related industries. Technologies under development and factors associated with moving from laboratory to product development. Field trips required.  
Effective Fall Semester 2026
- HRT 486 Biotechnology in Agriculture: Applications and Ethical Issues  
Fall of even years. 3(3-0)~~Interdepartmental with Crop and Soil Sciences, Forestry, Philosophy~~ Interdepartmental with Cropping Systems Science, Forestry, Philosophy P: BS 161 or PLB 105 RB: CSS 350 or ZOL 341 R: Not open to freshmen or sophomores.  
Current and future roles of biotechnology in agriculture: scientific basis, applications. Environmental, social, and ethical concerns.  
Effective Fall Semester 2026

## COLLEGE OF ENGINEERING

- CE 221      Statics  
Fall of every year. Spring of every year. 3(3-0)-~~Interdepartmental with Mechanical Engineering P: ((PHY 183 or PHY 183B or PHY 193H) or (PHY 231 and PHY 233B)) and ((MTH 234 or concurrently) or (LB 220 or concurrently) or (MTH 254H or concurrently))~~ P: ((PHY 183 or PHY 193H) or (PHY 231 and PHY 233)) and ((MTH 234 or concurrently) or (LB 220 or concurrently) or (MTH 254H or concurrently))  
Vector description of forces and moments. Two- and three- dimensional equilibrium of particles and rigid bodies. Analysis of trusses, frames, and machines. Coulomb friction.  
SA: MSM-205  
Effective Fall Semester 2026
- CE 273      Civil and Environmental Engineering Measurements  
Fall of every year. Spring of every year. 2(1-3)-~~P: ((MTH 132 or concurrently) or (MTH 152H or concurrently) or (LB 118 or concurrently)) and (EGR 102 or concurrently)~~ P: ((MTH 132 or concurrently) or (MTH 152H or concurrently) or (LB 118 or concurrently)) and (EGR 102 or concurrently)  
Measurements, surveying and error analysis with applications to civil and environmental engineering problems  
SA: CE-274  
Effective Fall Semester 2026
- CE 305      Introduction to Structural Analysis  
Fall of every year. Spring of every year. 3(3-0)-~~P: ME 222 and (CE 273 or concurrently) and (CE 274 or concurrently) and CE 274~~ P: (ME 222 and (CE 273 or concurrently) and (CE 274 or concurrently)) and (CE 271 or ENE 380) R: Open to juniors or seniors in the Department of Civil and Environmental Engineering.  
Theory of structural analysis for statically determinate structures. Qualitative structural analysis and behavior. Load estimation and placement. Introduction to structural analysis computer software. Introduction to statically indeterminate structures.  
Effective Fall Semester 2026
- CE 312      Soil Mechanics  
Fall of every year. Spring of every year. 4(3-3)-~~P: (ME 222 and (CE 273 or concurrently) and (CE 274 or concurrently) and (CE 271 or concurrently)) and completion of Tier I writing requirement~~ P: ((ME 222 and (CE 273 or concurrently) and (CE 274 or concurrently)) and completion of Tier I writing requirement) and ((CE 271 or concurrently) or ENE 380) ~~R: Open to juniors or seniors in the Department of Civil and Environmental Engineering and open to juniors or seniors in the Biosystems Engineering major.~~ R: Open to juniors or seniors in the Department of Civil and Environmental Engineering and open to juniors or seniors in the Biosystems Engineering Major.  
Engineering properties of soil and their measurement. Effective-stress concept. Permeability and seepage. Compaction. Consolidation, shear strength, and stress-strain behavior.  
Effective Fall Semester 2026
- CE 337      Civil Engineering Materials  
Fall of every year. Spring of every year. 4(3-3)-~~P: ((ME 222 or concurrently) and (CE 273 or concurrently) and (CE 274 or concurrently) and CE 271) and completion of Tier I writing requirement~~ P: ((ME 222 or concurrently) and (CE 273 or concurrently) and (CE 274 or concurrently)) and completion of Tier I writing requirement) and (CE 271 or ENE 380) R: Open to juniors or seniors in the Department of Civil and Environmental Engineering.  
Common civil engineering construction and paving materials: aggregates, inorganic cements, asphalts, concretes, wood, and steel. Composition, structure, physical and mechanical properties, tests, and production mix design.  
Effective Fall Semester 2026



- CE 341      Transportation Engineering  
Fall of every year. Spring of every year. 3(3-0) ~~P: ((MTH 234 or concurrently) or (MTH 254H or concurrently) or (LB 220 or concurrently)) and (((CE 273 or concurrently) and (CE 274 or concurrently) and CE 271) and completion of Tier I writing requirement) and (CE 372 or concurrently))~~ P: ((MTH 234 or concurrently) or (MTH 254H or concurrently) or (LB 220 or concurrently)) and (((CE 273 or concurrently) and (CE 274 or concurrently)) and completion of Tier I writing requirement) and (CE 372 or concurrently) and (CE 271 or ENE 380) R: Open to juniors or seniors in the Department of Civil and Environmental Engineering.  
Fundamentals of transportation planning, traffic flow and level-of-service, traffic signal design, geometric design of highways, and highway safety.  
Effective Fall Semester 2026
- CE 361      Computational Methods in Civil Engineering  
Spring of every year. 3(3-0) ~~P: (EGR 102 and CE 221 and CE 271) and (MTH 235 or MTH 340 or MTH 347H)~~ P: (EGR 102 and CE 221) and (MTH 235 or MTH 340 or MTH 347H) and (CE 271 or ENE 380) R: Open to juniors or seniors or graduate students in the Civil Engineering Major. Not open to students with credit in ME 361.  
Theoretical, numerical, and computational methods for civil engineering problems. Physical modeling, numerical techniques, and programming methods. Focus on civil engineering dynamics, solving systems of differential equations, and visualizing the results.  
SA: CE 390, CE 461  
Effective Fall Semester 2026
- CE 473      Smart and Sustainable Building Design and Operations  
Fall of every year. 3(3-0) ~~P: CE 371 or approval of department~~ P: ENE 371 or approval of department  
Elements of the design and operation of smart and sustainable buildings. Current and future energy-related challenges of existing buildings.  
Effective Fall Semester 2026
- ENE 380      Principles of Environmental Engineering and Science  
Fall of every year. 3(3-0) ~~P: (CEM 142 or CEM 152 or LB 172) and (MTH 133 or MTH 153H or LB 119) and CE 271~~ P: (CEM 141 or CEM 151 or LB 171) and (MTH 133 or MTH 153H or LB 119) and CE 271  
Physical, chemical and biological processes related to environmental science and engineering. Analysis of environmental problems and solutions. Mass balance modeling of contaminant fate, transport and removal in environmental media engineering.  
SA: ENE 280  
Effective Fall Semester 2026
- ENE 422      Applied Hydraulics  
Spring of every year. 3(2-2) ~~P: CE 321 or ME 332~~ P: (CE 321) or (ME 333 and ME 333L) R: Open to juniors or seniors or graduate students in the College of Engineering.  
Fundamentals of open-channel flow. Rapidly and gradually varied nonuniform flow analysis. Confined flows past submerged bodies, in pipe networks, and in turbo machinery. Design applications.  
Effective Fall Semester 2026
- ENE 489      Air Pollution: Science and Engineering  
Spring of every year. 3(3-0) ~~P: (CEM 141 or CEM 151 or LB 171) and (MTH 133 or MTH 153H or LB 119) and (ENE 380 or BE 230) and (CE 321 or CHE 311) and (CE 372 or CHE 316) and ((ME 201 or concurrently) or (BE 351 or concurrently) or (CHE 321 or concurrently))~~ P: (CEM 141 or CEM 151 or LB 171) and (MTH 133 or MTH 153H or LB 119) and (ENE 380 or BE 230 or CHE 210) and (CE 321 or CHE 311) and (CE 372 or CHE 316) and ((ME 201 or concurrently) or (BE 351 or concurrently) or (CHE 321 or concurrently)) R: Open to juniors or seniors or graduate students in the College of Engineering.  
Basic physical and chemical principles governing indoor and atmospheric air pollutant fate, transport and control technologies.  
Effective Fall Semester 2026

### COLLEGE OF NATURAL SCIENCE

- GLG 303      Oceanography  
Fall of every year. 3(3-0) Interdepartmental with Integrative Biology P: ~~(CEM 141 or CEM 181H or LB 171 or CEM 151) and (PHY 231 or PHY 183 or PHY 193H or LB 273 or PHY 183B or PHY 231C or PHY 241 or PHY 173 or PHY 221)~~ P: CEM 141 or CEM 181H or LB 171 or CEM 151  
Physical, chemical, biological, and geological aspects of oceanography: ocean circulation, waves, tides, air-sea interactions, chemical properties of ocean water, ocean productivity, shoreline processes, and sediments.  
Effective Fall Semester 2026
- GLG 433      Vertebrate Paleontology  
Fall of even years. 4(3-2) Interdepartmental with Integrative Biology P: IBIO 328 or GLG 304 or IBIO 360 or IBIO 365 or IBIO 384 or IBIO 445 or GLG 434 or FW 471  
Fossil vertebrates with emphasis on evolution and interrelationships of major groups.  
Modern techniques of identification and interpretation of fossils.  
DELETE COURSE  
Effective Fall Semester 2026
- IBIO 445      Evolution (W)  
Fall of every year. Spring of every year. Summer of every year. 3(3-0) ~~Interdepartmental with Crop and Soil Sciences, Plant Biology~~ Interdepartmental with Cropping Systems Science, Plant Biology P: (IBIO 341 or CSS 350) and completion of Tier I writing requirement R: Not open to freshmen.  
Processes of evolutionary change in animals, plants. Microbes. Population genetics, microevolution, speciation, adaptive radiation, macroevolution. Origin of Homo sapiens.  
SA: ZOL 345, ZOL 445  
Effective Fall Semester 2026
- MTH 415      Applied Linear Algebra  
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: ~~(MTH 235 or MTH 340 or MTH 347H) and (MTH 309 or MTH 314 or MTH 317H)~~ P: (MTH 234 or MTH 254H or LB 220) and (MTH 309 or MTH 314 or MTH 317H) and (CMSE 201 or CSE 231) Not open to students with credit in MTH 414.  
~~Matrices and linear algebra. General linear systems of equations. Least squares minimization techniques. Eigenvalues and eigenvectors, spectral decompositions, and exponentials. Linear algebra in normed vector spaces. Orthogonal structure and least squares theory. Matrix decompositions. Spectral theory. Singular value decompositions and applications. Discrete convolutions and Fourier transforms.~~  
Effective Summer Semester 2026
- MTH 417      Topics in Number Theory  
Spring of even years. 3(3-0) P: ~~(MTH 310 or MTH 418H) and ((MTH 411 or concurrently) or (MTH 419H or concurrently))~~ P: MTH 310 or MTH 418H  
Congruences of higher degree, primitive roots and quadratic reciprocity. Number-theoretic functions, algebraic numbers. Dirichlet Series, p-order expansion, continued fractions.  
Effective Fall Semester 2026
- STT 464      Statistics for Biologists  
Fall of every year. 3(3-0) ~~Interdepartmental with Animal Science, Crop and Soil Sciences~~ Interdepartmental with Animal Science, Cropping Systems Science P: MTH 103 or MTH 116 or MTH 124 or MTH 132 or LB 117 or LB 118 or LB 119  
Biological random variables. Estimation of population parameters. Testing hypotheses. Linear correlation and regression. Analyses of counted and measured data to compare several biological groups including contingency tables and analysis of variance.  
Effective Fall Semester 2026

### COLLEGE OF NURSING

- NUR 204 Introduction to Professional Nursing  
Fall of every year. Spring of every year. Summer of every year. 3(3-0) ~~P: PSL 250 and (HDFS 225 or concurrently) and PSY 238~~ R: Open to students in the College of Nursing or in the Nursing Major. Approval of college. ~~R: Open to students in the College of Nursing or in the Nursing Major.~~  
Examine the fundamental principles and values that underpin the nursing profession while fostering a sense of community and professional identity.  
Effective Summer Semester 2025
- NUR 206 Health Assessment  
Fall of every year. Spring of every year. Summer of every year. 2(1-1) ~~P: NUR 204 or concurrently~~ R: Open to students in the College of Nursing or in the Nursing Major. Approval of college. ~~R: Open to students in the College of Nursing or in the Nursing Major.~~ C: NUR 204 concurrently and NUR 210 concurrently ~~C: NUR 210 concurrently~~  
Introduction to the components of a comprehensive health assessment including distinguishing abnormal from normal assessment findings.  
Effective Spring Semester 2026
- NUR 208 Clinical Nursing Skills  
Fall of every year. Spring of every year. Summer of every year. 2(1-1) ~~P: PSL 250 and (HDFS 225 or concurrently) and PSY 238~~ P: NUR 204 or concurrently ~~R: Open to students in the College of Nursing or in the Nursing Major. Approval of college.~~ R: Open to students in the College of Nursing or in the Nursing Major. ~~C: NUR 204 concurrently and NUR 206 concurrently~~ C: NUR 206 concurrently  
Provide foundational knowledge to develop competence in essential clinical skills and application to evidence-based nursing practice.  
Effective Summer Semester 2025
- NUR 210 Foundations of Nursing Practice  
Fall of every year. Spring of every year. Summer of every year. 5(3-2) ~~P: PSL 250 and (HDFS 225 or concurrently) and PSY 238~~ P: PSL 250 and (HDFS 225 or concurrently) and (PSY 238 or concurrently) ~~R: Open to students in the College of Nursing or in the Nursing Major. Approval of college.~~ R: Open to students in the College of Nursing or in the Nursing Major.  
Focus on foundational nursing concepts and application of the nursing process to evidence-based care to diverse populations.  
Effective Summer Semester 2025
- NUR 306 Pathophysiology, Pharmacology & Genomics I  
Fall of every year. Spring of every year. Summer of every year. 4(4-0) ~~P: ANTR 350 or (PSL 310 or concurrently) or (PSL 250 or concurrently) or (PSL 431 or concurrently) or (PSL 432 or concurrently) or (CEM 141 or concurrently) or CEM 161~~ P: (NUR 210 or concurrently) or (CEM 141 or concurrently) or CEM 161 ~~R: Open to students in the College of Nursing or in the Nursing Major. Approval of college.~~ R: Open to students in the College of Nursing or in the Nursing Major. ~~C: NUR 210 concurrently~~  
Explore the relationship between the physiologic changes, clinical manifestations of altered health, genomics, and the pharmacotherapy utilized in the treatment of complex disease processes.  
Effective Spring Semester 2026
- NUR 308 Pathophysiology, Pharmacology & Genomics II  
Fall of every year. Spring of every year. Summer of every year. 3(3-0) ~~P: NUR 306~~ R: Open to students in the College of Nursing or in the Nursing Major. Approval of college. ~~R: Open to students in the College of Nursing or in the Nursing Major.~~  
Explores the relationship between physiologic changes, clinical manifestations of altered health, genomics, and the pharmacotherapy used in the treatment of complex disease processes.  
Effective Spring Semester 2026

NUR 310	<p>Nursing Care of Adults 1</p> <p>Fall of every year. Spring of every year. Summer of every year. 5(3-2) P: <del>(NUR 206 or concurrently) and (NUR 208 or concurrently) and (NUR 210 or concurrently)</del> R: <del>Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> R: <u>Open to students in the College of Nursing or in the Nursing Major.</u> C: <del>NUR 206 concurrently and NUR 208 concurrently and NUR 210 concurrently and NUR 306 concurrently</del> C: <u>NUR 306 concurrently</u></p> <p>Focuses on using the nursing process including critical thinking, clinical reasoning, and clinical decision-making to manage care for acute and chronically ill patients.</p> <p>Effective Spring Semester 2026</p>
NUR 312	<p>Nursing Care of Adults II</p> <p>Fall of every year. Spring of every year. Summer of every year. 5(3-2) P: <del>NUR 310</del> R: <del>Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> R: <u>Open to students in the College of Nursing or in the Nursing Major.</u></p> <p>Application of the nursing process including critical thinking, clinical reasoning, and clinical decision-making to manage care for acute and chronically ill patients.</p> <p>Effective Spring Semester 2026</p>
NUR 314	<p>Scholarship of Nursing Practice</p> <p>Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: <del>(NUR 204 or concurrently) and (NUR 210 or concurrently)</del> R: <del>Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> R: <u>Open to students in the College of Nursing or in the Nursing Major.</u> C: <del>NUR 204 concurrently and NUR 210 concurrently</del></p> <p>Introduction to evidence-based practice and research methodology to inform ethical nursing practice.</p> <p>Effective Spring Semester 2026</p>
NUR 371	<p>Behavioral Health Nursing</p> <p>Fall of every year. Spring of every year. Summer of every year. 4(2-6) P: <del>PSL 250 and PSY 238 and HDFS 225 and MMG 201 and NUR 206 and NUR 208</del> P: <u>NUR 206 and NUR 208 and HDFS 225 and NUR 208</u> R: <del>Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> R: <u>Open to students in the College of Nursing or in the Nursing Major.</u></p> <p>Extension of foundational social science concepts into nursing therapeutics aimed at behavioral health and the care of persons with mental illnesses.</p> <p>Effective Spring Semester 2026</p>
NUR 404	<p>Kaplan NCLEX Review Seminar</p> <p>Fall of every year. Spring of every year. Summer of every year. 1(1-0) R: <del>Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> R: <u>Open to students in the College of Nursing or in the Nursing Major.</u> C: <del>NUR 418 concurrently and NUR 420 concurrently and NUR 426 concurrently</del> C: <u>NUR 418 concurrently and NUR 420 concurrently and NUR 426 concurrently</u></p> <p>Reinforce core nursing concepts to strengthen critical thinking and clinical judgment to promote NCLEX examination success.</p> <p>Request the use of the Pass-No Grade (P-N) system.</p> <p>Effective Spring Semester 2026</p>
NUR 416	<p>Informatics, Analytics, and Innovation</p> <p>Fall of every year. Spring of every year. Summer of every year. 2(2-0) R: <del>Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> R: <u>Open to students in the College of Nursing or in the Nursing Major.</u></p> <p>Knowledge and skills necessary to effectively utilize information technology to drive innovation in healthcare.</p> <p>Effective Spring Semester 2026</p>

NUR 418	<p>Transformational Leadership</p> <p>Fall of every year. Spring of every year. Summer of every year. 3(3-0) <del>P: PSL 250 and HDFS 225 and (PSY 238 or concurrently) and MMG 201</del> <del>R: Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> <u>R: Open to students in the College of Nursing or in the Nursing Major.</u> <del>C: NUR 416 concurrently</del> <u>C: NUR 416 concurrently</u></p> <p>Integration of evidence-based practice competencies in professional nursing as it relates to leadership, management, and nursing care delivery systems.</p> <p>Effective Summer Semester 2025</p>
NUR 420	<p>Transitions to Nursing</p> <p>Fall of every year. Spring of every year. Summer of every year. 3(3-0) <del>R: Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> <u>R: Open to students in the College of Nursing or in the Nursing Major.</u> <del>C: NUR 404 concurrently and NUR 426 concurrently</del> <u>C: NUR 404 concurrently and NUR 426 concurrently</u></p> <p>Develop personal and professional strategies to successfully transition into professional practice and advocate for the advancement of health professions for the global community.</p> <p>Effective Spring Semester 2026</p>
NUR 426	<p>Capstone and Preceptorship</p> <p>Fall of every year. Spring of every year. Summer of every year. 4(1-3) <del>P: NUR 206 and NUR 208</del> <u>P: NUR 206 and NUR 208 and HDFS 225</u> <del>R: Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> <u>R: Open to students in the College of Nursing or in the Nursing Major.</u></p> <p>Application of evidence-based practice competencies in professional nursing as it relates to quality improvement and nursing care delivery systems.</p> <p>Effective Spring Semester 2026</p>
NUR 430	<p>Population and Global Health</p> <p>Fall of every year. Spring of every year. Summer of every year. 4(3-1) <del>P: NUR 206 and NUR 208 and NUR 420</del> <u>P: NUR 206 and NUR 208 and HDFS 225</u> <del>R: Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> <u>R: Open to students in the College of Nursing or in the Nursing Major.</u> <u>C: NUR 420 concurrently</u></p> <p>Health care processes and systems to achieve better health outcomes for global populations and communities.</p> <p>Effective Spring Semester 2026</p>
NUR 440	<p>Nursing Care of Children and Their Families</p> <p>Fall of every year. Spring of every year. Summer of every year. 4(2-2) <del>P: NUR 206 and NUR 208 and HDFS 225</del> <u>P: NUR 206 and NUR 208</u> <del>R: Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> <u>R: Open to students in the College of Nursing or in the Nursing Major.</u> <del>C: NUR 206 concurrently and NUR 208 concurrently</del></p> <p>Theoretical concepts and clinical application of nursing care for children, adolescents, and their families using a holistic perspective in varied settings.</p> <p>Effective Spring Semester 2026</p>
NUR 444	<p>Nursing Care of the Childbearing Family and Beyond</p> <p>Fall of every year. Spring of every year. Summer of every year. 4(2-2) <del>P: NUR 206 and NUR 208 and HDFS 225</del> <u>P: NUR 206 and NUR 208</u> <del>R: Open to students in the College of Nursing or in the Nursing Major. Approval of college.</del> <u>R: Open to students in the College of Nursing or in the Nursing Major.</u> <del>C: NUR 206 concurrently and NUR 208 concurrently</del></p> <p>Theoretical concepts and clinical application of nursing care for the normal and at risk childbearing families and women's health.</p> <p>Effective Spring Semester 2026</p>

**COLLEGE OF VETERINARY MEDICINE**

SCS 646

Small Animal Orthopedic Surgery Clerkship

~~Fall of every year. Spring of every year. Summer of every year. Fall of every year. Spring of every year. Summer of every year. 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. RB: Completion of semester 5 of the professional veterinary program. RB: Successful completion of the preclinical phase of the graduate-professional (DVM) program in the College of Veterinary Medicine. R: Open only to graduate-professional students in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.~~

Diagnosis and preoperative, surgical, and postoperative care of patients requiring routine and major orthopedic surgical procedures.

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 Summer Semester 2026