MICHIGAN STATE UNIVERSITY
University Committee on Curriculum

SUBCOMMITTEE A – AGENDA

Via Teams
November 6, 2025
1:30 p.m.

PART I – NEW ACADEMIC PROGRAMS AND PROGRAM CHANGES

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

1. Request to change the requirements for the **Agricultural Technology Certificate** in **Agricultural Operations** in The Institute of Agricultural Technology.

   a. Under the heading **Requirements for Agricultural Operations** make the following changes:

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

CSS	101	Introduction to Crop Science	3
CSS	126	Introduction to Weed Management	2
CSS	203	World of Soils	2

      Add the following courses:

CROP	101	Introduction to Crop Science	3
CROP	126	Introduction to Weed Management	2
SOIL	203	World of Soils	2

      (3) In item 3., add the following community college partner:

      St. Clair County Community College

   Effective Fall 2026.

2. Request to change the requirements for the **Agricultural Technology Certificate** in **Dairy Management** in the Institute of Agricultural Technology.

   a. Under the heading **Requirements for Dairy Management** make the following changes:

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

AT	045	Agricultural Communications	2
AT	071	Technical Mathematics	2
CSS	110	Computer Applications in Agronomy	2

      Add the following courses:

AT	145	Agricultural Communications	2
AT	171	Technical Mathematics	2
CROP	110	Computer Applications in Agronomy	2

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

AT	055	Agricultural Finance	3
CSS	101	Introduction to Crop Science	3
CSS	101L	Introduction to Crop Science Laboratory	1
CSS	120	Issues in Food and Agriculture	3
CSS	201	Forage Crops	3
CSS	212	Advanced Crop Production	2

      Add the following courses:

AT	155	Agricultural Finance	3
CROP	101	Introduction to Crop Science	3
CROP	101L	Introduction to Crop Science Laboratory	1
CROP	120	Issues in Food and Agriculture	3

CROP	201	Forage Crops	3
CROP	212	Advanced Crop Production	2

Effective Fall 2026.

3. Request to change the requirements for the **Agricultural Technology Certificate** in **Electrical Technology** in the Institute of Agricultural Technology.

a. Under the heading **Electrical Technology** make the following changes:

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

AT	045	Agricultural Communications	2
AT	071	Technical Mathematics	2

Add the following courses:

AT	145	Agricultural Communications	2
AT	171	Technical Mathematics	2

(2) Replace the note following item 1. with the following:

Students who demonstrate proficiency through placement testing for AT 145 and AT 171 can take elective course work to substitute the credit in those courses as approved by the program coordinator.

Effective Fall 2026.

4. Request to change the requirements for the **Agricultural Technology Certificate** in **Food Technology and Safety** in the Institute of Agricultural Technology.

a. Under the heading **Requirements for Food Technology and Safety** make the following changes:

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

AT	45	Agricultural Communications	2
AT	71	Technical Mathematics	2

Add the following courses:

AT	145	Agricultural Communications	2
AT	171	Technical Mathematics	2

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

AT	55	Agricultural Finance	3
CSS	120	Issues in Food and Agriculture	3

Add the following courses:

AT	155	Agricultural Finance	3
CROP	120	Issues in Food and Agriculture	3

Effective Fall 2026.

5. Request to change the requirements for the **Agricultural Technology Certificate** in **Forest Technology** in the Institute of Agricultural Technology.

a. Under the heading **Requirements for Forest Technology** make the following changes:

(1) In item 1., change the total credits from '33' to '34'.

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

CSS	143	Introduction to Soil Science	2
FOR	222	Forestry Field Methods	2
PLP	105	Fundamentals of Applied Plant Pathology	2

Add the following courses:

FOR	222	Forestry Field Methods	3
PLP	105	Fundamentals of Applied Plant Pathology	1
PLP	105L	Fundamentals of Applied Plant Pathology Lab	1
SOIL	203	World of Soils	2

(3) Change item 2. to the following:

Complete 30 credits of additional course work through Bay College and Kirtland Community College. All course work must be approved by the program coordinator in the Institute of Agricultural Technology.

Effective Fall 2026.

6. Request to change the requirements for the **Agricultural Technology Certificate** in **Livestock Industries** in the Institute of Agricultural Technology.

a. Under the heading **Requirements for Livestock Industries** make the following changes:

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

AT	045	Agricultural Communications	2
AT	071	Technical Mathematics	2
CSS	101	Introduction to Crop Science	3
CSS	110	Computer Applications in Agronomy	2

Add the following courses:

AT	145	Agricultural Communications	2
AT	171	Technical Mathematics	2
CROP	101	Introduction to Crop Science	3
CROP	110	Computer Applications in Agronomy	2

Effective Fall 2026.

COLLEGE OF ENGINEERING

1. Request to change the requirements in the **Master of Science** degree in **Engineering Mechanics** in the Department of Mechanical Engineering. The University Committee on Graduate Studies (UCGS) will consider this request at its November 17, 2025 meeting.

   a. Under the heading **Admission** replace the entire entry with the following:

      An applicant should possess a bachelor's degree in engineering mechanics or a related field. The applicant may submit scores from the Graduate Record Examination General Test.

   b. Under the heading **Requirements for the Master of Science Degree in Engineering Mechanics, *Requirements for Both Plan A and Plan B*** make the following changes:

      (1) Delete items 1. and 2. and replace with the following:

         2. Complete ME 800 or at least one course approved by the student's academic advisor at the 400-level or above in mathematics or statistics.

      (2) Add the following item 3.:

         3. All first-year graduate students are required to register in ME 892 during the Fall or Spring semester. This course does not count towards the 30-credit minimum requirement.

   Effective Spring 2026.

2. Request to change the requirements in the **Doctor of Philosophy** degree in **Engineering Mechanics** in the Department of Mechanical Engineering. The University Committee on Graduate Studies (UCGS) will consider this request at its November 17, 2025 meeting.

   a. Under the heading **Admission** replace the entire entry with the following:

      The applicant may submit scores from the Graduate Record Examination Test.

   b. Under the heading **Requirements for the Doctor of Philosophy Degree in Engineering Mechanics** replace the entire entry with the following:

      In addition to meeting the requirements of the university and the College of Engineering, students must meet the requirements specified by their guidance committees and as stated in the Mechanical Engineering section of the College of Engineering handbook.

   Effective Spring 2026.

3. Request to change the requirements in the **Master of Science** degree in **Mechanical Engineering** in the Department of Mechanical Engineering. The University Committee on Graduate Studies (UCGS) will consider this request at its November 17, 2025 meeting.

   a. Under the heading **Requirements for the Master of Science Degree in Mechanical Engineering** make the following changes:

      (1) Under the heading **Requirements for Both Plan A and Plan B** delete the following course from **Solid Mechanics, Design, and Manufacturing and Biomechanics** area:

         ME 826 Laminated Composite Materials 3

      (2) Under the heading **Requirements for Both Plan A and Plan B** add the following item 2.:

2. All first-year graduate students are required to register in ME 892 during the Fall or Spring semester. This course does not count towards the 30-credit minimum requirement. This requirement is waived for the master's online students.

Effective Spring 2026.

4. Request to change the requirements in the **Doctor of Philosophy** degree in **Mechanical Engineering** in the Department of Mechanical Engineering. The University Committee on Graduate Studies (UCGS) will consider this request at its November 17, 2025 meeting.

a. Under the heading **Admission** replace the statement with the following:

The applicant may submit scores from the Graduate Record Examination General Test.

b. Under the heading **Requirements for the Doctor of Philosophy Degree in Mechanical Engineering** replace the paragraph with the following:

In addition to meeting the requirements of the university and the College of Engineering, students must meet the requirements specified by their guidance committees and in the Mechanical Engineering section of the College of Engineering handbook.

Effective Spring 2026.

COLLEGE OF HUMAN MEDICINE

1. Request to change the requirements for the **Graduate Certificate** in **Public Health** in the Department of Public Health. The University Committee on Graduate Studies (UCGS) will consider this request at its October 13, 2025 meeting.

a. Under the heading **Graduate Certificate in Public Health** make the following changes:

(1) Replace item 1. with the following:

1. Complete all of the following courses (18 credits):

PH	801	Introduction to Public Health	3
PH	802	Biostatistics for Public Health	3
PH	803	Epidemiology and Public Health	3
PH	804	Public Health Policy and Administration	3
PH	805	Social and Behavioral Aspects of Public Health	3
PH	806	Environmental Factors of Health	3

Effective Spring 2026.

2. Request to establish a **Graduate Certificate** in **Public Health Data Management and Analytics** in the CS Mott Department of Public Health. The University Committee on Graduate Studies (UCGS) recommended approval of this request at its October 13, 2025 meeting.

a. **Background Information**:

The Master of Public Health Program (MPH) conducted a self-study as part of the Council on Education for Public Health (CEPH) initial accreditation process. Self-study requires reflection on where a program has been, and where it sees itself going in the future. The MPH Program offers optional concentrations upon completion of the 43-credit curriculum, essentially ensuring that students develop skills that are necessary to practice in public health. We currently offer a 6-course graduate certificate in Public Health to students who do not want to complete a full MPH.

Part of the self-study explored how we might create new graduate concentrations as a part of the MPH program, or new certificate programs to offer as stand-alone graduate certificates. The MPH program focuses on applied skills that graduates can take with them to any public health environment. Public health careers will be some of the fastest growing in the country over the next decade. According to the U.S. Bureau of Labor Statistics Occupational Outlook Handbook (*https://www.bls.gov/ooh/*), from 2020 to 2030, employment of statisticians (and biostatisticians) is expected to grow at 35% (ranking in the top 20 fastest growing careers in the U.S.), while a 30% growth rate for epidemiologists is expected. Growth in other public health professions is expected as well, including: environmental scientists and specialists (8%); health education specialists and community health workers (17%); and medical and health research scientists (17%), among others. New graduate MPH certificates/concentrations should provide students with a path to better compete for in-demand careers in public health.

Through a yearlong process, other public health programs in the U.S. were studied to determine which areas were focused on, asked faculty to develop short summaries of potential new certificates/concentrations (and required courses) that aligned with their interests, and over the course of Summer and Fall 2021 semesters, proposals were presented to the Course Directors Committee. Ultimately, we decided to add two new concentrations to the MPH program for students completing the full MPH. These include Rural Public Health, and Data Management and Analytics. The focus of this request to take the three required Public Health Data Management and Analytics concentration courses, and create a new Graduate Certificate in Public Health Data Management and Analytics that includes those courses plus an additional prerequisite course for a total of 12 credits.

b. **Academic Programs Catalog Text**:

The Graduate Certificate in Public Health Data Management and Analytics is designed to equip students with the skills to use various public health and health care data sources for applied public health practice. A data equity framework is integrated into this program to ensure fairness and equality. Students who complete the certificate will access, manage, assess, analyze, and report findings from different data sources commonly used in public health, such as vital records, surveys, and surveillance, as well as health care delivery settings, such as administrative claims and electronic medical records data. Prospective students are encouraged to review *https://mph.msu.edu/* for additional information.

In addition to meeting the requirements of the University and of the College of Human Medicine, students must meet the requirements specified below.

Admission

To be considered for admission to the Graduate Certificate in Public Health Data Management and Analytics, an applicant must:

1. apply through SOPHAS (centralized application system for public health programs);
2. submit an application for Graduate Study at Michigan State University with application fee;
3. have earned a bachelor's degree from a recognized, accredited educational institution;
4. submit three letters of recommendation from professional or academic references;
5. submit a personal statement describing interest in and understanding of public health including professional career goals, and how their experiences, personal and professional, have influenced that interest;
6. submit official transcripts from all post-secondary institutions attended;
7. submit a resume or curriculum vitae;
8. submit official English language proficiency test scores to institution code 1465 (TOEFL, IELTS, MELAB) if applying as an international applicant.

The MPH Admission Committee integrates the academic information, letters of recommendation, and personal statement to make the final admissions decision based on the following considerations:

1. *Academic*: including attributes such as grades, trend in grades, degrees earned, rigors of the degree programs, graduate study admission test scores, research experience, and cognitive skills;
2. *Personal Motivation*: including attributes such as public health experience and insights about public health competencies, health care reform, and other ethical, social, legal, political, and economic aspects of health;

3. *Social Awareness*: including attributes such as community service, experience with persons or groups unlike themselves, leadership, and mentoring experiences, as well as effective communication skills and sensitivity to community concerns.

Requirements for the Graduate Certificate in Public Health Data Management and Analytics

The Graduate Certificate in Public Health Data Management and Analytics is available only online. Students must complete 12 credits as specified below.

			CREDITS
PH	802	Biostatistics for Public Health	3
PH	826	Data Management and Public Health Practice	3
PH	829	Public Health and Healthcare Delivery Data	3
PH	878	Applied Biostatistics for Public Health	3

Students can request a waiver of PH 802 if they can demonstrate equivalent course completion and/or experience. Students without this course or equivalent experience will be required to take PH 802 prior to taking PH 878.

Effective Fall 2026.

3. Request to establish a **Graduate Certificate** in **Rural Public Health** in the CS Mott Department of Public Health. The University Committee on Graduate Studies (UCGS) recommended approval of this request at its October 13, 2025 meeting.

a. **Background Information**:

The Master of Public Health Program (MPH) conducted a self-study as part of the Council on Education for Public Health (CEPH) initial accreditation process. Self-study requires reflection on where a program has been, and where it sees itself going in the future. The MPH Program offers optional concentrations upon completion of the 43-credit curriculum, essentially ensuring that students develop skills that are necessary to practice in public health. We currently offer a 6-course graduate certificate in Public Health to students who do not want to complete a full MPH.

Part of the self-study explored how we might create new graduate concentrations as a part of the MPH program, or new certificate programs to offer as stand-alone graduate certificates. The MPH program focuses on applied skills that graduates can take with them to any public health environment. Public health careers will be some of the fastest growing in the country over the next decade. According to the U.S. Bureau of Labor Statistics Occupational Outlook Handbook (*https://www.bls.gov/ooh/*), from 2020 to 2030, employment of statisticians (and biostatisticians) is expected to grow at 35% (ranking in the top 20 fastest growing careers in the U.S.), while a 30% growth rate for epidemiologists is expected. Growth in other public health professions is expected as well, including: environmental scientists and specialists (8%); health education specialists and community health workers (17%); and medical and health research scientists (17%), among others. New graduate MPH certificates/concentrations should provide students with a path to better compete for in-demand careers in public health.

Through a yearlong process, other public health programs in the U.S. were studied to determine which areas were focused on, asked faculty to develop short summaries of potential new certificates/concentrations (and required courses) that aligned with their interests, and over the course of Summer and Fall 2021 semesters, proposals were presented to the Course Directors Committee. Ultimately, we decided to add two new concentrations to the MPH program for students completing the full MPH. These include Rural Public Health, and Data Management and Analytics. The focus of this request to take the three required Rural Public Health concentration courses, and create a new Graduate Certificate in Rural Public Health.

b. **Academic Programs Catalog Text**:

The Graduate Certificate in Rural Public Health is designed to provide students with skills and knowledge to effectively work as public health leaders and practitioners in rural communities, both globally and domestically. Students will develop an understanding of how unique social, cultural, political, and environmental characteristics of rural communities, as well as structural, systemic, and historical influences, affect everything from rural health and well-being to public health and health care delivery, policy development, collaborative opportunities, and advocacy strategies. Prospective students are encouraged to review *https://mph.msu.edu/* for additional information.

In addition to meeting the requirements of the University and of the College of Human Medicine, students must meet the requirements specified below.

Admission

To be considered for admission to the Graduate Certificate in Public Health Data Management and Analytics, an applicant must:

1. apply through SOPHAS (centralized application system for public health programs);
2. submit an application for Graduate Study at Michigan State University with application fee;
3. have earned a bachelor's degree from a recognized, accredited educational institution;
4. submit three letters of recommendation from professional or academic references;
5. submit a personal statement describing interest in and understanding of public health including professional career goals, and how their experiences, personal and professional, have influenced that interest;
6. submit official transcripts from all post-secondary institutions attended;
7. submit a resume or curriculum vitae;
8. submit official English language proficiency test scores to institution code 1465 (TOEFL, IELTS, MELAB) if applying as an international applicant.

The MPH Admission Committee integrates the academic information, letters of recommendation, and personal statement to make the final admissions decision based on the following considerations:

1. *Academic*: including attributes such as grades, trend in grades, degrees earned, rigors of the degree programs, graduate study admission test scores, research experience, and cognitive skills;
2. *Personal Motivation*: including attributes such as public health experience and insights about public health competencies, health care reform, and other ethical, social, legal, political, and economic aspects of health;
3. *Social Awareness*: including attributes such as community service, experience with persons or groups unlike themselves, leadership, and mentoring experiences, as well as effective communication skills and sensitivity to community concerns.

Requirements for the Graduate Certificate in Rural Public Health

The Graduate Certificate in Rural Public Health is available only online. Students must complete 9 credits as specified below.

			CREDITS
PH	830	Foundations of Rural Public Health	3
PH	834	Drivers of Rural Health	3
PH	839	Rural Public Health Policy and Advocacy	3

Effective Fall 2026.

COLLEGE OF NATURAL SCIENCE

1. Request to establish a **Bachelor of Science** degree in **Earth and Environmental Sciences** in the Department of Earth and Environmental Sciences. The University Committee on Undergraduate Education (UCUE) recommended approval of this request at its October 9, 2025 meeting.

   a. **Background Information**:

   The current degrees in Environmental Geosciences and in Geological Sciences are being discontinued and combined into a single degree to better reflect demands both for the work force and academia. It will improve enrollment, equity, and employability.

   Other peer institutions offer degrees in Earth and Environmental Sciences including the University of Michigan, Arizona State University, University of Minnesota, University of Nevada Las Vegas, University of Illinois Chicago, and others.

Development of this new program was informed by resources including "Vision and Change in the Geosciences - The Future of Undergraduate Geoscience Education" produced by the American Geosciences Institute.
https://www.americangeosciences.org/news/press-releases/vision-and-change-in-the-geosciences-future-of-undergraduate-geoscience-education-report-released/

The B.S. degree in Earth and Environmental Sciences will prepare students to attend graduate school or enter the work force after graduation in fields including geology, environmental science, and planetary science. The degree allows students to work in a multidisciplinary setting and offers flexibility to focus in specific disciplines intersecting physics, chemistry, biology, data science, and geological and environmental sciences. Relative to programs in environmental social science and policy, this program offers deeper quantitative and scientific training needed for careers; relative to engineering, Earth and environmental sciences approach the natural world with an investigative perspective to explain mechanisms and predict phenomena.

b. **Academic Programs Catalog Text**:

The Bachelor of Science degree in Earth and Environmental Sciences prepares students to enter the work force after graduation in fields including geology, environmental science, and planetary science. Students can work in a multidisciplinary setting and have flexibility to focus in specific disciplines intersecting physics, chemistry, biology, data science, and geological and environmental sciences. The degree offers deep quantitative and scientific training needed for careers; relative to engineering, Earth and environmental sciences approach the natural world with an investigative perspective to explain mechanisms and predict phenomena.

Requirements for the Bachelor of Science Degree in Earth and Environmental Sciences

CREDITS

1. The University requirements for bachelor's degrees as described in the *Undergraduate Education* section of this catalog; 120 credits, including general elective credits, are required for the Bachelor of Science Degree in Earth and Environmental Sciences.

   The University's Tier II writing requirement for the Earth and Environmental Sciences major is met by completing three of the following courses: GLG 361, GLG 401, GLG 412, GLG 431, GLG 435, GLG 445, or GLG 491. Those courses are referenced in item 3. below.

   Students who are enrolled in the College of Natural Science may complete the alternative track to Integrative Studies in Biological and Physical Sciences that is described in item 1. under the heading *Graduation Requirements* in the College statement. Certain courses referenced in requirement 3. below may be used to satisfy the alternative track.
2. The requirements of the College of Natural Science for the Bachelor of Science degree.

   Certain courses referenced in requirement 3. below may be counted toward College requirements as appropriate.
3. The following requirements for the major:

CREDITS

a. The following courses outside the Department of Earth and Environmental Sciences (23 to 31 credits):

(1) One of the following Chemistry I courses (4 credits):

CEM	141	General Chemistry	4
CEM	151	General and Descriptive Chemistry	4
CEM	181H	Honors Chemistry I	4
LB	171	Principles of Chemistry I	4

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

CEM	142	General and Inorganic Chemistry	4
CEM	152	Principles of Chemistry	4
CEM	182H	Honors Chemistry II	4
LB	172	Principles of Chemistry II	3
MSE	250	Materials Science and Engineering	3

(3) One of the following Chemistry laboratory courses (1 or 2 credits):

CEM	161	Chemistry Laboratory I	1
CEM	185H	Honors Chemistry Laboratory I	2
LB	171L	Introductory Chemistry Laboratory I	1

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

PHY	183	Physics for Scientists and Engineers I	4
PHY	193H	Honors Physics I – Mechanics	4
PHY	221	Studio Physics for Life Scientists I	4
PHY	231	Introductory Physics I	3
LB	273	Physics I	4

(5) One of the following Physics II courses (3 to 5 credits):

PHY	174	Studio Physics for Scientists and Engineers II	5
PHY	184	Physics for Scientists and Engineers II	4
PHY	222	Studio Physics for Life Scientists II	4
PHY	232	Introductory Physics II	3
PHY	294H	Honors Physics II – Electromagnetism	4
LB	274	Physics II	4

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

MTH	124	Survey of Calculus I	3
MTH	132	Calculus I	3
MTH	152H	Honors Calculus I	3
LB	118	Calculus I	4

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

MTH	126	Survey of Calculus II	3
MTH	133	Calculus II	4
MTH	153H	Honors Calculus II	4
LB	119	Calculus II	4
STT	231	Statistics for Scientists	3
STT	421	Statistics I	3

(8) One of the following computational methods or geospatial course sequences:
(3 or 4 credits):

(a)	GEO	221	Introduction to Geographic Information	3
	GEO	221L	Introduction to Geographic Information Laboratory	1
(b)	FOR	419	Applications of Geographic Information Systems to Natural Resources Management	4
(c)	CMSE	201	Introduction to Computational Modeling and Data Analysis I	4
(d)	GLG	307	Introduction to Computation in Earth and Environmental Sciences	3

b. One of the following courses/sequences (4 credits):

(1)	GLG	200	Introduction to Environmental Science and Global Change	4
(2)	GLG	201	Introduction to Earth and Planetary Sciences	4
(3)	GLG	203	Geology of the Great Lakes Region	3
	GLG	203L	Geology of the Great Lakes Region Laboratory	1

c. Both of the following courses (8 credits):

GLG	304	Physical and Biological History of the Earth	4
GLG	321	Introduction to Geochemistry	4

d. Two of the following courses (8 credits):

GLG	361	Introduction to Volcanoes and Igneous Rocks (W)	4
GLG	421	Environmental Geochemistry	4
GLG	431	Sedimentology and Stratigraphy	4
GLG	471	Applied Geophysics	4

e. Three of the following writing-intensive courses, which can also satisfy requirement 3.d. or 3.f. (11 to 14 credits):

GLG	361	Introduction to Volcanoes and Igneous Rocks (W)	4
GLG	401	Structure and Mechanics of the Earth (W)	4
GLG	412	Glaciers, Ice, and Climate Change (W)	4
GLG	431	Sedimentology and Stratigraphy	4

GLG	435	Geomicrobiology (W)	4
GLG	445	Planetary Sciences	3
GLG	491	Field Geology – Summer Camp (W)	6

f. One of the following courses, which can also satisfy requirement 3.e. (3 to 6 credits):

GLG	422	Field Methods in Earth and Environmental Science	3
GLG	491	Field Geology – Summer Camp (W)	6
GLG	493	Field Studies in Geological Sciences	3

g. Additional courses in Earth and Environmental Sciences to reach a total of 47 credits in GLG. This may be satisfied with any other GLG course not already counted towards other requirements, including but not limited to the list below:

GLG	200	Introduction to Environmental Science and Global Change	4
GLG	201	Introduction to Earth and Planetary Sciences	4
GLG	303	Oceanography	3
GLG	306	Environmental Geomorphology	3
GLG	307	Introduction to Computation in Earth and Environmental Sciences	3
GLG	330	Biogeochemistry	3
GLG	361	Introduction to Volcanoes and Igneous Rocks (W)	4
GLG	380	Natural Resources, the Energy Transition, and the Environment	3
GLG	401	Structure and Mechanics of the Earth (W)	4
GLG	411	Hydrogeology	3
GLG	412	Glaciers, Ice, and Climate Change (W)	4
GLG	421	Environmental Geochemistry	4
GLG	422	Field Methods in Earth and Environmental Science	3
GLG	431	Sedimentology and Stratigraphy	4
GLG	434	Evolutionary Paleobiology	4
GLG	435	Geomicrobiology (W)	4
GLG	444	Cosmochemistry	3
GLG	445	Planetary Sciences	3
GLG	446	Sustainable Food Systems	3
GLG	470	Solid Earth Geophysics and Geodynamics	3
GLG	471	Applied Geophysics	4
GLG	491	Field Geology - Summer Camp (W)	6
GLG	493	Field Studies in Geological Sciences	3

Effective Fall 2026.

2. Request to change the requirements for the **Disciplinary Teaching Minor** in **Mathematics-Secondary** in the Department of Mathematics. The Teacher Education Council (TEC) will consider this request at its November 6, 2025 meeting.

a. Under the heading **Mathematics-Secondary** make the following changes:

(1) In item 5., delete the following course:

TE	409	Crafting Teaching Practice in the Secondary Teaching Minor	1

Add the following courses:

TE	314	Clinical Experiences in Mathematics Education I	3
TE	415	Seminar in Mathematics Education I	3

(2) Change the total credits from ’23 to 26’ to ’28 to 31’.

Effective Spring 2026.

COLLEGE OF NURSING

1. Request to change the requirements for the **Bachelor of Science in Nursing** degree in **Nursing** in the College of Nursing. The University Committee on Undergraduate Education (UCUE) will consider this request at its November 13, 2025 meeting.

   a. Under the heading **Admission to the Accelerated Second Bachelor's Degree Program** make the following changes:

      (1) Delete the following courses:

ANTR	350	Human Gross Anatomy for Pre-Health Professionals	3
MMG	201	Fundamentals of Microbiology	3
NUR	301	Clinical Pathophysiology	3
PHM	350	Introductory Human Pharmacology	3

      Add the following courses:

ANTR	350	Human Gross Anatomy for Pre-Health Professionals	4
MGI	201	Fundamentals of Microbiology	3

      (2) Delete the following note:

      Nursing 300 or 301 must be completed within five years of program start.

   Effective Spring 2026.

2. Request to change the requirements for the **Doctor of Nursing Practice** degree in **Nursing Practice**. The University Committee on Graduate Studies (UCGS) will consider this request at its November 17, 2025 meeting.

   The concentrations in the Doctor of Nursing Practice degree in Nursing Practice are noted on the student's academic record when the requirements for the degree have been completed.

   a. Under the heading **Requirements for the Doctor of Nursing Practice Degree in Nursing Practice** make the following changes:

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

EPI	840	Clinical Epidemiology for Healthcare Practice	3

      Add the following course:

NUR	914	Biostatistics for the APRN	3

      (2) In item 2., under the **Nurse Anesthesia** concentration, delete the following courses:

ANTR	541	Gross Anatomy for Nurse Anesthetists	4
NUR	909	Advanced Pharmacology for the Advance Practice Registered Nurse	3

      Add the following courses:

NUR	945	Basic Pharmacology for Nurse Anesthesia	3
NUR	946	Principles of Regional Anesthesia and Point-of-Care Ultrasound	4

   Effective Spring 2026.

PART II - NEW COURSES AND CHANGES

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES

FW 449 Wildlife Policy
Spring of odd years. 3(2-2) RB: IBIO 355 and FW 364 R: Not open to freshmen or sophomores or approval of department.
REINSTATEMENT Controversial issues in wildlife policy. Science and political analysis drawing on ecology, economics, sociology. Argument analysis.
Effective Spring Semester 2026

FW 449L Wildlife Policy – Study Away
Spring of odd years. 1(0-3) P: FW 449 or concurrently or approval of department; application required R: Not open to freshmen or sophomores.
REINSTATEMENT Onsite examination of controversial issues of in wildlife policy. Field trip required.
Effective Spring Semester 2026

COLLEGE OF ENGINEERING

MSE 260 Electronic, Magnetic, Thermal, and Optical Properties of Materials
Spring of every year. 3(3-0) ~~P: (MSE 250) and ((PHY 184 or concurrently) or (PHY 184B or concurrently) or (PHY 294H or concurrently) or (LB 274 or concurrently))~~ P: (MSE 250) and ((PHY 184 or concurrently) or (PHY 294H or concurrently) or (PHY 232 or concurrently) or (LB 274 or concurrently))
Processing, structures, and properties of ceramics, polymers, and composites. Electrical, thermal, magnetic and optical properties of materials. Materials selection and design.
SA: MSE 350
Effective Fall Semester 2026

CSE 420 Computer Architecture
Spring of odd years. 3(3-0) P: (CSE 232 and CSE 260) and CSE 325 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 Computer Science Disciplinary Teaching Minor.
REINSTATEMENT Fundamental organization and architecture of computer systems.
SA: CPS 420
Effective Spring Semester 2026

ME 201 Thermodynamics
Fall of every year. Spring of every year. Summer of every year. 3(3-0) ~~P: (CEM 141 or CEM 151 or CEM 181H or LB 171) and ((MTH 234 or concurrently) or (MTH 254H or concurrently) or (LB 220 or concurrently)) and (PHY 183 or PHY 183B or PHY 193H or PHY 233B or LB 273)~~ P: (CEM 141 or CEM 151 or CEM 181H or LB 171) and ((MTH 234 or concurrently) or (MTH 254H or concurrently) or (LB 220 or concurrently)) and (PHY 183 or PHY 193H or PHY 233 or LB 273) Not open to students with credit in BE 351 or CHE 321.
Basic concepts of thermodynamics. Property evaluation of ideal gases and compressible substances. Theory and application of the first and second laws of thermodynamics. Entropy and Carnot efficiency.
Effective Fall Semester 2026

COLLEGE OF NATURAL SCIENCE

GLG 200 Introduction to Environmental Science and Global Change
~~Fall of every year. Spring of every year.~~ Fall of every year. 4(3-2)

Tools and knowledge to understand our earth systems and current issues in the environmental sciences and global change. Use of geology, physics, chemistry, and biology to explore concepts and case studies across local, regional, and global scales. Build the environmental science foundation for communicating and working across disciplines to solve problems in society.
Effective Fall Semester 2026

GLG 203L Geology of the Great Lakes Region Laboratory
On Demand. 1(0-2) ~~P: (GLG 203 or concurrently) or (GLG 301 or concurrently)~~ P: GLG 203 Not open to students with credit in GLG 201.

Laboratory investigation of physical, chemical, and biological phenomena and processes in Earth systems. Experiential study and tools for characterizing and describing Earth materials and observations.
Effective Spring Semester 2026

GLG 304 Physical and Biological History of the Earth
~~Spring of every year.~~ Fall of every year. 4(3-2) ~~P: GLG 201 or ISP 203A~~ P: GLG 201 or ISP 203A or GLG 200 or GLG 203

~~Origin of the Earth. Differentiation of the Earth's core, mantle, and crust. Lithospheric tectonics over geologic time. Origin and evolution of the Earth's hydrosphere, atmosphere and climate. Origin and evolutionary history of biological life. Interactions of life with the Earth's endogenic and exogenic systems.~~ Integrated physical and biological history of the Earth. Origin of the geosphere, atmosphere, hydrosphere, and biosphere. Lithospheric tectonics over geologic time. Interactions of life with the Earth's endogenic and exogenic systems. Field trip required.
~~SA: GLG 202~~
Effective Fall Semester 2026

GLG 307 Introduction to Computation in Earth and Environmental Sciences
Spring of even years. 3(3-0) P: (MTH 124 or MTH 132 or MTH 152H or LB 118) and (LB 273 or PHY 183 or PHY 231 or PHY 193H or PHY 221)

NEW Programming and computational skills applied to Earth and Environmental Sciences. Foundational concepts in mathematics and physics, file systems and input/output (I/O), scripting, variables, operations, functions, data visualization, solving equations, curve fitting, and basic data analysis.
Effective Fall Semester 2026

GLG 321 ~~Mineralogy and Geochemistry~~ Introduction to Geochemistry
~~Fall of every year.~~ Spring of every year. 4(3-2) ~~P: (GLG 201) and (CEM 142 or CEM 152 or CEM 182H or LB 172 or MSE 250) and (MTH 132 or MTH 152H or LB 118 or MTH 124)~~ P: (GLG 201 or GLG 200 or GLG 203L) and (CEM 141 or CEM 151 or CEM 181H or LB 171) and ((MTH 132 or concurrently) or (MTH 152H or concurrently) or (LB 118 or concurrently) or (MTH 124 or concurrently))

~~Earth materials and their origin, modification, structure, dynamics and history. Crystallography and crystal chemistry, and geochemical properties and processes in mineral crystallization and recrystallization. Analytical identification and characterization of minerals in their lithologic context.~~ Chemical behavior and interaction in the Earth system. Origin, modification, structure, dynamics and history of Earth materials . Crystallography and crystal chemistry, and geochemical properties and processes in mineral crystallization and recrystallization. Analytical identification and characterization of minerals in their lithologic context. Thermodynamics and kinetics applied to Earth systems.
Effective Fall Semester 2026

GLG 361 ~~Igneous and Metamorphic Geochemistry and Petrology (W)~~
Introduction to Volcanoes and Igneous Rocks (W)
Spring of every year. 4(3-2) P: (GLG 321) and completion of Tier I writing requirement
~~Evolution, origin, occurrence and tectonic setting of igneous and metamorphic rocks. Phase relations of igneous and metamorphic systems. Studies of rocks in thin sections. Field trip required.~~ Evolution, origin, occurrence and tectonic setting of igneous rocks. Volcanic process and hazards. Phase relations of igneous systems. Studies of rocks in thin sections. Field trip required.
SA: GLG 461
Effective Fall Semester 2026

GLG 401 ~~Global Tectonics and Earth Structure (W)~~ Structure and Mechanics of the Earth (W)
Fall of every year. 4(3-2) ~~P: ((GLG 304) and completion of Tier I writing requirement) and (MTH 114 or MTH 116 or MTH 124 or MTH 132 or MTH 152H or LB 118) and (PHY 183 or PHY 183B or PHY 231 or PHY 231C or LB 273 or PHY 193H or PHY 173 or PHY 221 or PHY 241)~~ P: ((GLG 304) and completion of Tier I writing requirement) and (MTH 114 or MTH 116 or MTH 124 or MTH 132 or MTH 152H or LB 118) and (PHY 183 or PHY 221 or PHY 231 or PHY 193H or LB 273) and GLG 321
~~Structural geology, geological and geophysical methods of studying the structure and dynamics of the earth and planets. Plate kinematics and global geodynamic processes, plate margin processes and evolution, marine geology. Field trip required.~~ Structural geology; stress, strain, and rock deformation; geological and geophysical methods of studying the structure and dynamics of the earth and planets. Field trip required.
~~SA: GLG 371~~
Effective Fall Semester 2026

GLG 411 Hydrogeology
Fall of every year. 3(3-0) ~~RB: MTH 114 or MTH 116 or MTH 124 or MTH 126 or MTH 132 or MTH 133 or LB 118 or LB 119 or MTH 152H or MTH 153H~~ R: Not open to freshmen or sophomores.
Source, occurrence, and movement of groundwater emphasizing geologic factors and controls.
Effective Fall Semester 2026

GLG 412 ~~Glacial Geology and the Record of Climate Change~~ Glaciers, Ice, and Climate Change (W)
Spring of every year. 4(3-2) P: (GLG 200 or GLG 201 or GLG 203L) and completion of Tier I writing requirement ~~RB: GLG 201 or GEO 306 or GEO 408 or GLG 301~~ R: Not open to freshmen or sophomores.
~~In depth analysis of glacial geology and the record of climate change, with emphasis on North America and Europe. Field trip required.~~ Understand how glaciers form, move, retreat, and reshape the landscape. Investigate the record of past climates written in ice core and land forms. Explore the role of ice in our environment, from the Arctic to the Equator. Field trip required.
Effective Fall Semester 2026

GLG 421 Environmental Geochemistry
Spring of every year. 4(3-2) P: (GLG 200 or GLG 201 or GLG 203) and (CEM 141 or CEM 151 or CEM 181H or LB 171) ~~RB: GLG 201 and (CEM 141 or CEM 151 or CEM 181H or LB 171)~~
Natural and anthropogenic processes affecting the chemistry of the environment with an emphasis on the water cycle. Equilibria and kinetic balances, biogeochemical cycling, contaminant chemicals, chemical origins, environmental health.
Effective Fall Semester 2026

GLG 422 ~~Field Methods in Environmental Science~~ Field Methods in Earth and Environmental Science
Fall of every year. 3(1-4) ~~P: {{{GLG 201 or GEO 206 or IBIO 355) and (CEM 141 and CEM 161)} or (LB 171 and LB 171L)} and (STT 200 or STT 201 or STT 231)~~ P: (GLG 201 or GEO 206 or IBIO 355 or GLG 200 or GLG 203L) and (CEM 141 or CEM 151 or CEM 181H or LB 171) and (STT 180 or GEO 221 or FOR 419 or CMSE 201 or STT 201 or STT 421 or STT 231 or GLG 307)
~~Introduction to field methods in enviro sciences, conceptual design, sample collection, and analysis. Field trips required. Offered first half of semester.~~ Introduction to field methods in Earth and environmental sciences, conceptual design, sample collection, and analysis. Field trips required.
Effective Fall Semester 2026

GLG 431 ~~Sedimentology and Stratigraphy~~ Sedimentary Records of Environmental Change
Spring of every year. 4(3-2) ~~P: GLG 321 and GLG 304~~ P: (GLG 321 and GLG 304) and Completion of Tier I Writing Requirement
Sediments, sedimentary rocks, sedimentary processes, and depositional environments through geologic time. Facies event correlation. Fossils as tools in stratigraphy and environmental analysis. Biostratigraphy, paleoecology and taphomony. Field trip required.
Effective Fall Semester 2026

GLG 444 Cosmochemistry
Spring of odd years. 3(2-2) Interdepartmental with Astronomy and Astrophysics ~~P: (GLG 201 or AST 208) and (MTH 124 or MTH 132 or MTH 152H or LB 118) and (CEM 142 or CEM 152 or CEM 182H or LB 172 or MSE 250) and (PHY 174 or PHY 184 or PHY 184B or PHY 222 or PHY 232 or PHY 232C or PHY 242 or PHY 294H or LB 274)~~ P: {GLG 201 or AST 208} and (CEM 142 or CEM 152 or CEM 182H or LB 172 or MSE 250) R: Not open to freshmen. Not open to students with credit in GLG 844.
Origin of the elements throughout the universe. History of the galaxy, solar system, and planet Earth as told by the materials that compose them. Study of meteorites and planetary samples theoretically and in the laboratory. Summarize state of field on directed topics.
Effective Spring Semester 2026

GLG 445 Planetary Sciences
Spring of even years. 3(3-0) Interdepartmental with Astronomy and Astrophysics ~~P: (GLG 201 or AST 208) and (CEM 142 or CEM 152 or CEM 182H or LB 172 or MSE 250) and (PHY 174 or PHY 184 or PHY 184B or PHY 222 or PHY 232 or PHY 232C or PHY 242 or PHY 294H or LB 274) and (MTH 124 or MTH 132 or MTH 152H or LB 118)~~ P: (GLG 201 or AST 208 or GLG 200) and (CEM 142 or CEM 152 or CEM 182H or LB 172 or MSE 250) and (PHY 174 or PHY 184 or LB 274 or PHY 222 or PHY 232 or PHY 294H) and (MTH 124 or MTH 132 or MTH 152H or LB 118) and Completion of Tier I Writing Requirement R: Not open to freshmen. Not open to students with credit in GLG 845.
Survey of planetary sciences including planetary interiors, surface processes, atmospheres and magnetospheres. Origin and dynamics of planetary systems. Habitability and astrobiology. History and future of space exploration. Design the scientific investigation of a future space mission.
Effective Spring Semester 2026

GLG 471 Applied Geophysics
Fall of every year. 4(3-2) ~~P: ((MTH 133 or concurrently) or (LB 119 or concurrently) or (MTH 153H or concurrently) or (MTH 126 or concurrently)) and ((PHY 184 or concurrently) or (PHY 184B or concurrently) or (PHY 232 or concurrently) or (PHY 232C or concurrently) or (PHY 294H or concurrently) or (LB 274 or concurrently) or (PHY 174 or concurrently) or (PHY 222 or concurrently) or (PHY 242 or concurrently))~~ P: ((MTH 133 or concurrently) or (LB 119 or concurrently) or (MTH 153H or concurrently) or (MTH 126 or concurrently)) and ((PHY 184 or concurrently) or (PHY 174 or concurrently) or (PHY 232 or concurrently) or (PHY 222 or concurrently) or (PHY 294H or concurrently) or (LB 274 or concurrently)) R: Not open to freshmen or sophomores.
Application of seismic, gravity, magnetic, resistivity, and electromagnetic methods to problems related to engineering studies, mineral and oil exploration, groundwater, subsurface mapping, pollution, and hazardous waste.
Effective Fall Semester 2026

NSC 103 Success Strategies
Fall of every year. Spring of every year. 2(2-0) R: Approval of department.
REINSTATEMENT Development/improvement of academic success skills, including time management, goal setting, growth mindset, study strategies.
Effective Fall Semester 2026

STT 200 Statistical Methods
Fall of every year. Spring of every year. Summer of every year. ~~3(4-0)~~ 4(4-0) P: (MTH 101 or MTH 102 or MTH 103 or MTH 103B or MTH 116 or MTH 124 or MTH 132 or LB 117 or LB 118) or designated score on Mathematics Placement test R: Open to undergraduate students. Not open to students with credit in STT 201 or STT 421.
Data analysis, probability models, random variables, estimation, tests of hypotheses, confidence intervals, and simple linear regression.
Effective Fall Semester 2025

COLLEGE OF OSTEOPATHIC MEDICINE

OST 220 Introduction to Healthcare Delivery in the U.S
Fall of every year. Spring of every year. 3(3-0)
NEW Foundations, historical underpinnings, federal systems (Medicare, Medicaid, CHIP, Tricare, VA), policies, financing, insurance, technology, R & D, oversight/safety/quality, providers, hospitals, managed-care, specialties, populations, local/community systems. Inclusive healthy society.
Effective Spring Semester 2026

OST 320 Globally Comparative Healthcare Systems
Fall of every year. Spring of every year. 3(3-0) P: OST 220 or approval of department
NEW Exploration of healthcare systems across the globe, exploring their structures, financing mechanisms, and performance outcomes. Students will analyze various models using comparative frameworks, focusing on access, quality, cost, and equity.
Effective Fall Semester 2026

COLLEGE OF VETERINARY MEDICINE

SCS 672 Community Medicine and Surgery Clerkship
Fall of every year. Spring of every year. Summer of every year. 3(3-0) A student may earn a maximum of 3 credits in all enrollments for this course. R: Open to veterinary medicine students in the College of Veterinary Medicine or in the Professional Program in Veterinary Medicine.
NEW This clerkship provides veterinary students with immersive, hands-on surgical experience in a mobile clinical setting. Students will travel across Michigan with faculty and staff to community locations, including animal shelters and underserved rural areas, to perform spay/neuter and other common soft tissue procedures. Emphasis is placed on developing surgical proficiency, anesthesia management, patient care, and professional communication in a dynamic, resource-limited environment.
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 Spring Semester 2026