

MICHIGAN STATE UNIVERSITY

Report of
THE UNIVERSITY COMMITTEE ON CURRICULUM
to the Faculty Senate
February 20, 2024

The effective date for new programs subject to Statewide Academic Program review is implemented in accordance with the Statewide Academic Program Review calendar.

MICHIGAN STATE UNIVERSITY
University Committee on Curriculum

February 20, 2024

TO: Faculty Senate

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:¹

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:¹

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

MICHIGAN STATE UNIVERSITY

February 20, 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. Establish a **Bachelor of Science in Aquatic Ecology and Management** in the Department of Fisheries and Wildlife. The University Committee on Undergraduate Education (UCUE) recommended approval of this request at its November 30, 2023 meeting.

- a. **Background Information:**

The Department of Fisheries and Wildlife has offered an undergraduate degree program related to conservation of fish, wildlife, and water for more than 70 years. The program currently offers one Fisheries and Wildlife degree, with six concentrations – Conservation Biology, Fisheries Biology and Management, Wildlife Biology and Management, Water Sciences, Fish and Wildlife Disease Ecology and Management, and Pre-veterinary Medicine. The department proposes moving from a single bachelor's degree to offering four degrees, each of which builds on one of our four concentrations with the highest enrollments– Applied Conservation Biology, Fish Ecology and Management, Wildlife Ecology and Management, and Aquatic Ecology and Management.

As the department developed these proposed new majors, they updated the degree requirements (as compared to the existing degree and concentration requirements), to meet the interests and needs of students, and to address the feedback from and demands of employers, so that the program stays competitive and remains a leader among similar programs in Michigan and across the U.S. The academic programs in Fisheries and Wildlife at MSU are recognized within the discipline as being among the top programs across the nation, and the adjustments that have been made to program requirements will help maintain that stature. These adjustments include increased emphasis on global climate change, natural resources policy, and diversity, equity and inclusion. Also added are two new courses: a first-year skills-based 1-credit course, and a 3-credit senior capstone course (filling a gap in the curriculum in terms of synthesis).

The implementation of the four proposed degrees also will help prospective students find fisheries and wildlife earlier in their academic careers. Many students who have changed majors to Fisheries and Wildlife share they hadn't thought they would be interested in Fisheries and Wildlife. By adding majors in Applied Conservation Biology, and Aquatic Ecology and Management, the department will better attract those students as they enroll at MSU, which will promote more timely degree progress for these students.

This proposed major and the other three proposed new majors will continue to be unique among degree programs at MSU, due to the integration of fundamental sciences (biology, ecology, chemistry, geology, etc), management and decision-making techniques, and human dimensions. The department's breadth of research and partnerships, and location in the greater Lansing area, give the program an additional advantage in that it incorporates personnel from several state and federal natural resource agencies (all potential employers of students) into classes and into student experiential opportunities.

There are no accrediting bodies for fisheries and wildlife, but the American Fisheries Society, The Wildlife Society, and the Ecological Society of America all have certification requirements. The curriculum is intentionally designed so that students can choose courses that will allow them to successfully apply for certification upon graduation, if that is what they desire. Students not desiring certification have even broader course options within topic categories.

The department has a strong and successful tradition of offering undergraduate degrees in this field. Many department alumni gain employment with Michigan natural resource agencies (and more broadly) with whom we have strong partnerships. Given the complex and increasingly apparent effects of climate change on natural resources, the program is timelier than ever.

b. **Academic Programs Catalog Text:**

The Bachelor of Science in Aquatic Ecology and Management is designed for students interested in examining the biological, physical, chemical, geological and hydrological aspects of lakes and ponds, rivers and streams, wetlands and groundwaters, with an emphasis on water quality. This major provides students with the understanding and skills needed for careers related to protecting and restoring water resources around the North American Great Lakes region and the world.

Admission as a Junior

To be considered for admission to the major, the student must:

1. Complete at least 56 credits.
2. Complete the following courses with a minimum grade of 2.0 in each course:

FW	101	Fundamentals of Fisheries and Wildlife Ecology and Management	3
FW	101L	Fundamentals of Fisheries and Wildlife Ecology and Management Lab	2
FW	293	Undergraduate Seminar in Fisheries and Wildlife	1
3. Pass the following courses:
 - a. FW 102 Succeeding in Fisheries and Wildlife –
New Student Seminar 1
 - b. One of the following courses:

MTH	124	Survey of Calculus I	3
MTH	132	Calculus I	3
LB	118	Calculus I	4

Requirements for the Bachelor of Science Degree in Aquatic Ecology and Management

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 Aquatic Ecology and Management.

The University's Tier II writing requirement for the Aquatic Ecology and Management major is met by completing Fisheries and Wildlife 497 referenced in item 3. below.

Students who are enrolled in the Aquatic Ecology and Management major leading to the Bachelor of Science degree in the Department of Fisheries and Wildlife may complete an alternative track to Integrative Studies in Biological and Physical Sciences by completing BS 161, BS 162 and CEM 141 below. The completion of BS 171 or BS 172 and CEM 161 satisfies the laboratory requirement. Completion of items 3. a., 3. b., and 3. c. below will be counted toward both the alternative track and the requirements for the major.

The completion of the College of Agriculture and Natural Resources mathematics requirement may also satisfy the University mathematics requirement.

2. The requirements of the College of Agriculture and Natural Resources for the Bachelor of Science degree.

Certain courses referenced in requirement 3. below may be counted toward College requirements as appropriate. The completion of item 3. d. and 3. e. below satisfies the College's mathematics requirement.

Students must earn a 2.0 or higher in all FW courses taken to complete major requirements in item 3. below.

Only credits in courses graded on the numerical or Pass-No Grade system may be counted toward the requirements for the major. Students may not enroll in courses required for the major, including courses in other departments, on a Credit-No Credit basis. Only elective courses can be enrolled on a Credit-No Credit basis.

3. The following requirements for the major:
- | | | | | CREDITS |
|----|------|---------|---|---------|
| a. | | | All of the following courses (22 credits): | |
| | FW | 101 | Fundamentals of Fisheries and Wildlife Ecology and Management | 3 |
| | FW | 101L | Fundamentals of Fisheries and Wildlife Ecology and Management Lab | 2 |
| | FW | 102 | Fundamentals of Fisheries and Wildlife – New Student Seminar | 1 |
| | FW | 293 | Undergraduate Seminar in Fisheries and Wildlife | 1 |
| | FW | 334 | Human Dimensions of Fisheries and Wildlife Management | 3 |
| | FW | 364 | Ecological Problem Solving | 3 |
| | FW | 497 | Capstone in Fisheries and Wildlife: Conservation and Management Decision Making (W) | 3 |
| | IBIO | 355 | Ecology | 3 |
| | MMG | 201 | Fundamentals of Microbiology | 3 |
| b. | | | One of the following groups of courses (6 or 9 credits): | |
| | (a) | BS 161 | Cell and Molecular Biology | 3 |
| | | BS 162 | Organismal and Population Biology | 3 |
| | (b) | LB 144 | Biology I: Organismal Biology | 4 |
| | | LB 145 | Biology II: Cellular and Molecular Biology | 5 |
| c. | | | One course from each group (5 credits): | |
| | (a) | CEM 141 | General Chemistry | 4 |
| | | LB 171 | Principles of Chemistry | 4 |
| | (b) | CEM 161 | Chemistry Laboratory | 1 |
| | | LB 171L | Principles of Chemistry Laboratory I | 1 |
| d. | | | One of the following courses (2 credits): | |
| | BS | 171 | Cell and Molecular Biology Laboratory | 2 |
| | BS | 172 | Organismal and Population Biology Laboratory | 2 |
| | | | This requirement is waived if students complete LB 144 or LB 145 in item b. | |
| e. | | | One of the following courses (3 or 4 credits): | |
| | LB | 273 | Physics I | 4 |
| | PHY | 221 | Studio Physics for Life Scientists I | 4 |
| | PHY | 231 | Introductory Physics I | 3 |
| f. | | | One of the following courses (3 or 4 credits): | |
| | MTH | 124 | Survey of Calculus I | 3 |
| | MTH | 132 | Calculus I | 3 |
| | LB | 118 | Calculus I | 4 |
| g. | | | One of the following courses (3 or 4 credits): | |
| | STT | 201 | Statistical Methods | 4 |
| | STT | 224 | Introduction to Probability and Statistics for Ecologists | 3 |
| | STT | 231 | Statistics for Scientists | 3 |
| | STT | 421 | Statistics I | 3 |
| | STT | 464 | Statistics for Biologists | 3 |
| h. | | | One of the following courses (3 or 4 credits): | |
| | CSUS | 310 | History of Environmental Thought and Sustainability | 3 |
| | FW | 439 | Conservation Ethics | 3 |
| | HST | 391 | Environmental History of North America | 3 |
| | PHL | 340 | Ethics | 3 |
| | PHL | 342 | Environmental Ethics | 3 |
| | PHL | 380 | Nature of Science | 3 |
| | PHL | 442 | Ethics and Animals | 3 |
| | PHL | 480 | Philosophy of Science | 4 |
| i. | | | Two of the following courses (6 or 7 credits): | |
| | COM | 100 | Human Communication | 3 |
| | COM | 225 | An Introduction to Interpersonal Communication | 3 |
| | COM | 240 | Introduction to Organizational Communication | 4 |
| | COM | 275 | Effects of Mass Communication | 3 |

	CSUS	433	Grant Writing and Fund Development	3
	JRN	472	Environmental, Science and Health Reporting	3
	WRA	331	Writing in the Public Interest (W)	3
	WRA	333	Writing in Corporate Contexts	3
	WRA	335	Writing in Scientific Contexts	3
	WRA	337	Writing and Public Policy	3
	WRA	453	Grant and Proposal Writing	3
j.	Two of the following courses (6 credits):			
	CSUS	354	Water Resources Management	3
	FW	207	Great Lakes: Biology and Management	3
	FW	416	Marine Ecology and Management	3
	FW	417	Wetland Ecology and Management	3
k.	Two of the following courses (6 or 7 credits):			
	FW	420	Stream Ecology	3
	FW	472	Limnology	3
	GLG	303	Oceanography	3
	IBIO	353	Marine Biology (W)	4
	MMG	425	Microbial Ecology	3
l.	One of the following courses (3 or 4 credits):			
	EPI	390	Disease in Society: Introduction to Epidemiology and Public Health	4
	FW	423	Principles of Fish and Wildlife Disease	3
	FW	431	Ecophysiology and Toxicology of Fishes	3
	FW	463	Wildlife Disease Ecology	3
m.	One of the following courses (3 or 4 credits):			
	CSS	455	Environmental Pollutants in Soil and Water	3
	GEO	411	Stream Systems and Landforms	3
	GLG	411	Hydrogeology	3
	GLG	421	Environmental Geochemistry	4
n.	One of the following courses (3 or 4 credits):			
	FOR	419	Applications of Geographic Information Systems to Natural Resources Management	4
	FW	474	Field and Laboratory Techniques for Aquatic Studies	3
	FW	479	Fish Population Analysis and Management	3
	GEO	221	Introduction to Geographic Information and	3
	GEO	221L	Introduction to Geographic Information Laboratory	1
	GLG	446	Ecosystems Modeling, Water and Food Security	3
o.	One of the following courses (3 credits):			
	CSUS	464	Environmental and Natural Resource Policy in Michigan	3
	CSUS	465	Environmental and Natural Law	3
	FOR	466	Natural Resource Policy	3
	FW	445	Biodiversity Conservation Policy and Practice	3
	FW	481	Global Issues in Fisheries and Wildlife	3
	IBIO	446	Environmental Issues in Public Policy	3
	MC	450	International Environmental Law and Policy	3
p.	One of the following courses (3 credits):			
	ANP	443	Human Adaptability	3
	ANP	486	Environmental Archaeology	3
	FOR	360	Forest Ecosystems, Carbon and Climate Change	3
	GEO	409	Global Climate Change and Variability	3
	IBIO	357	Global Change Biology (W)	3
	SOC	478	Climate Change and Society	3
q.	Complete a minimum of 3 credits from the following courses (3 or 4 credits):			
	FW	480	International Studies in Fisheries and Wildlife	1 to 3
	FW	490	Independent Study in Fisheries and Wildlife	1 to 3
	FW	493	Professional Internship in Fisheries and Wildlife	1 to 3
	FW	499	Senior Thesis in Fisheries and Wildlife	4

2. Establish a **Bachelor of Science in Applied Conservation Biology** in the Department of Fisheries and Wildlife. The University Committee on Undergraduate Education (UCUE) recommended approval of this request at its November 30, 2023 meeting.

- a. **Background Information:**

The Department of Fisheries and Wildlife has offered an undergraduate degree program related to conservation of fish, wildlife, and water for more than 70 years. The program currently offers one Fisheries and Wildlife degree, with six concentrations – Conservation Biology, Fisheries Biology and Management, Wildlife Biology and Management, Water Sciences, Fish and Wildlife Disease Ecology and Management, and Pre-veterinary Medicine. The department proposes moving from a single bachelor's degree to offering four degrees, each of which builds on one of our four concentrations with the highest enrollments– Applied Conservation Biology, Fish Ecology and Management, Wildlife Ecology and Management, and Aquatic Ecology and Management.

As the department developed these proposed new majors, they updated the degree requirements (as compared to the existing degree and concentration requirements), to meet the interests and needs of students, and to address the feedback from and demands of employers, so that the program stays competitive and remains a leader among similar programs in Michigan and across the U.S. The academic programs in Fisheries and Wildlife at MSU are recognized within the discipline as being among the top programs across the nation, and the adjustments that have been made to program requirements will help maintain that stature. These adjustments include increased emphasis on global climate change, natural resources policy, and diversity, equity and inclusion. Also added are two new courses: a first-year skills-based 1-credit course, and a 3-credit senior capstone course (filling a gap in the curriculum in terms of synthesis).

The implementation of the four proposed degrees also will help prospective students find fisheries and wildlife earlier in their academic careers. Many students who have changed majors to Fisheries and Wildlife share they hadn't thought they would be interested in Fisheries and Wildlife. By adding majors in Applied Conservation Biology, and Aquatic Ecology and Management, the department will better attract those students as they enroll at MSU, which will promote more timely degree progress for these students.

This proposed major and the other three proposed new majors will continue to be unique among degree programs at MSU, due to the integration of fundamental sciences (biology, ecology, chemistry, geology, etc), management and decision-making techniques, and human dimensions. The department's breadth of research and partnerships, and location in the greater Lansing area, give the program an additional advantage in that it incorporates personnel from several state and federal natural resource agencies (all potential employers of students) into classes and into student experiential opportunities.

There are no accrediting bodies for fisheries and wildlife, but the American Fisheries Society, The Wildlife Society, and the Ecological Society of America all have certification requirements. The curriculum is intentionally designed so that students can choose courses that will allow them to successfully apply for certification upon graduation, if that is what they desire. Students not desiring certification have even broader course options within topic categories.

The department has a strong and successful tradition of offering undergraduate degrees in this field. Many department alumni gain employment with Michigan natural resource agencies (and more broadly) with whom we have strong partnerships. Given the complex and increasingly apparent effects of climate change on natural resources, the program is timelier than ever.

- b. **Academic Programs Catalog Text:**

The Bachelor of Science in Applied Conservation Biology focuses on the science of analyzing and conserving the earth's biological diversity drawing from the biological, physical and social sciences, economics, and the practice of natural resource conservation and management.

Admission as a Junior

To be considered for admission to the major, the student must:

1. Complete at least 56 credits.
2. Complete the following courses with a minimum grade of 2.0 in each course:

FW	101	Fundamentals of Fisheries and Wildlife Ecology and Management	3
FW	101L	Fundamentals of Fisheries and Wildlife Ecology and Management Lab	2
FW	293	Undergraduate Seminar in Fisheries and Wildlife	1
3. Pass the following courses:
 - a.

FW	102	Succeeding in Fisheries and Wildlife – New Student Seminar	1
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 - b. One of the following courses:

MTH	124	Survey of Calculus I	3
MTH	132	Calculus I	3
LB	118	Calculus I	4

Requirements for the Bachelor of Science Degree in Applied Conservation Biology

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 Applied Conservation Biology.

The University's Tier II writing requirement for the Applied Conservation Biology major is met by completing Fisheries and Wildlife 497 referenced in item 3. below.

Students who are enrolled in the Applied Conservation Biology major leading to the Bachelor of Science degree in the Department of Fisheries and Wildlife may complete an alternative track to Integrative Studies in Biological and Physical Sciences by completing BS 161, BS 162 and CEM 141 below. The completion of BS 171 or BS 172 and CEM 161 satisfies the laboratory requirement. Completion of items 3. a., 3. b., and 3. c. below will be counted toward both the alternative track and the requirements for the major.

The completion of the College of Agriculture and Natural Resources mathematics requirement may also satisfy the University mathematics requirement.

2. The requirements of the College of Agriculture and Natural Resources for the Bachelor of Science degree.

Certain courses referenced in requirement 3. below may be counted toward College requirements as appropriate. The completion of item 3. d. and 3. e. below satisfies the College's mathematics requirement.

Students must earn a 2.0 or higher in all FW courses taken to complete major requirements in item 3. below.

Only credits in courses graded on the numerical or Pass-No Grade system may be counted toward the requirements for the major. Students may not enroll in courses required for the major, including courses in other departments, on a Credit-No Credit basis. Only elective courses can be enrolled on a Credit-No Credit basis.

3. The following requirements for the major:

				CREDITS
a. All of the following courses (25 credits):				
FW	101	Fundamentals of Fisheries and Wildlife Ecology and Management		3
FW	101L	Fundamentals of Fisheries and Wildlife Ecology and Management Lab		2
FW	102	Fundamentals of Fisheries and Wildlife – New Student Seminar		1
FW	293	Undergraduate Seminar in Fisheries and Wildlife		1
FW	334	Human Dimensions of Fisheries and Wildlife Management		3

	FW	364	Ecological Problem Solving	3
	FW	444	Conservation Biology	3
	FW	445	Biodiversity Conservation Policy and Practice	3
	FW	497	Capstone in Fisheries and Wildlife: Conservation and Management Decision Making (W)	3
	IBIO	355	Ecology	3
b.	One of the following groups of courses (6 or 9 credits):			
	(a)	BS	161 Cell and Molecular Biology	3
		BS	162 Organismal and Population Biology	3
	(b)	LB	144 Biology I: Organismal Biology	4
		LB	145 Biology II: Cellular and Molecular Biology	5
c.	One of the following courses (2 credits):			
	BS	171	Cell and Molecular Biology Laboratory	2
	BS	172	Organismal and Population Biology Laboratory	2
	This requirement is waived if students complete LB 144 or LB 145 in item b.			
d.	One course from each group (5 credits):			
	(a)	CEM	141 General Chemistry	4
		LB	171 Principles of Chemistry	4
	(b)	CEM	161 Chemistry Laboratory	1
		LB	171L Principles of Chemistry Laboratory I	1
e.	One of the following courses (3 or 4 credits):			
	MTH	124	Survey of Calculus I	3
	MTH	132	Calculus I	3
	LB	118	Calculus I	4
f.	One of the following courses (3 or 4 credits):			
	STT	201	Statistical Methods	4
	STT	224	Introduction to Probability and Statistics for Ecologists	3
	STT	231	Statistics for Scientists	3
	STT	421	Statistics I	3
	STT	464	Statistics for Biologists	3
g.	One of the following courses (3 or 4 credits):			
	CSUS	310	History of Environmental Thought and Sustainability	3
	FW	439	Conservation Ethics	3
	HST	391	Environmental History of North America	3
	PHL	340	Ethics	3
	PHL	342	Environmental Ethics	3
	PHL	380	Nature of Science	3
	PHL	442	Ethics and Animals	3
	PHL	480	Philosophy of Science	4
h.	Two of the following courses (6 or 7 credits):			
	COM	100	Human Communication	3
	COM	225	An Introduction to Interpersonal Communication	3
	COM	240	Introduction to Organizational Communication	4
	COM	275	Effects of Mass Communication	3
	CSUS	433	Grant Writing and Fund Development	3
	JRN	472	Environmental, Science and Health Reporting	3
	WRA	331	Writing in the Public Interest (W)	3
	WRA	333	Writing in Corporate Contexts	3
	WRA	335	Writing in Scientific Contexts	3
	WRA	337	Writing and Public Policy	3
	WRA	453	Grant and Proposal Writing	3
i.	One of the following courses (3 credits):			
	FW	424	Wildlife Population Analysis and Management	3
	FW	479	Fisheries Population Analysis and Management	3
j.	One of the following courses (3 or 4 credits):			
	FOR	419	Applications of Geographic Information Systems to Natural Resources Management	4
	FW	413	Wildlife Research and Management Techniques	3
	FW	474	Field and Laboratory Techniques for Aquatic Studies	3
	GEO	221	Introduction to Geographic Information	3
	And			
	GEO	221L	Introduction to Geographic Information Laboratory	1

k.	One of the following courses (3 or 4 credits):			
	CSS	350	Introduction to Plant Genetics	3
	IBIO	341	Fundamental Genetics	4
l.	One of the following courses (3 or 4 credits):			
	IBIO	445	Evolution (W)	3
	GLG	304	Physical and Biological History of the Earth	4
	GLG	434	Evolutionary Paleobiology	4
m.	One of the following courses (3 or 4 credits):			
	FOR	340	Forest Ecology	3
	FW	420	Stream Ecology	3
	FW	472	Limnology	3
	IBIO	353	Marine Biology (W)	4
	IBIO	485	Tropical Biology	3
	PLB	441	Plant Ecology	3
n.	One of the following courses (3 credits):			
	CSUS	464	Environmental and Natural Resource Policy in Michigan	3
	CSUS	465	Environmental and Natural Law	3
	FOR	466	Natural Resource Policy	3
	FW	481	Global Issues in Fisheries and Wildlife	3
	IBIO	446	Environmental Issues in Public Policy	3
	MC	450	International Environmental Law and Policy	3
o.	One of the following courses (3 credits):			
	FOR	413	Wildland Fire Ecology and Management	3
	FW	410	Upland Ecology and Management	3
	FW	416	Marine Ecology and Management	3
	FW	417	Wetland Ecology and Management	3
	FW	423	Principles of Fish and Wildlife Disease	3
	FW	463	Wildlife Disease Ecology	3
	PLB	443	Restoration Ecology	3
p.	One of the following courses (3 credits):			
	ANP	443	Human Adaptability	3
	ANP	486	Environmental Archaeology	3
	FOR	360	Forest Ecosystems, Carbon and Climate Change	3
	GEO	409	Global Climate Change and Variability	3
	IBIO	357	Global Change Biology (W)	3
	SOC	478	Climate Change and Society	3
q.	Two of the following courses (6 to 8 credits):			
	ENT	404	Fundamentals of Entomology	4
	ENT	422	Aquatic Entomology	3
	FOR	204	Forest Vegetation	3
	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
	PLB	218	Plants of Michigan	3
	PLB	418	Plant Systematics	3
r.	Complete a minimum of 3 credits from the following courses (3 or 4 credits):			
	FW	480	International Studies in Fisheries and Wildlife	1 to 3
	FW	490	Independent Study in Fisheries and Wildlife	1 to 3
	FW	493	Professional Internship in Fisheries and Wildlife	1 to 3
	FW	499	Senior Thesis in Fisheries and Wildlife	4

Effective Fall 2024.

3. Establish a **Bachelor of Science in Fish Ecology and Management** in the Department of Fisheries and Wildlife. The University Committee on Undergraduate Education (UCUE) recommended approval of this request at its November 30, 2023 meeting.

- a. **Background Information:**

The Department of Fisheries and Wildlife has offered an undergraduate degree program related to conservation of fish, wildlife, and water for more than 70 years. The program currently offers one Fisheries and Wildlife degree, with six concentrations – Conservation Biology, Fisheries Biology and Management, Wildlife Biology and Management, Water Sciences, Fish and Wildlife Disease Ecology and Management, and Pre-veterinary Medicine. The department proposes moving from a single bachelor's degree to offering four degrees, each of which builds on one of our four concentrations with the highest enrollments– Applied Conservation Biology, Fish Ecology and Management, Wildlife Ecology and Management, and Aquatic Ecology and Management.

As the department developed these proposed new majors, they updated the degree requirements (as compared to the existing degree and concentration requirements), to meet the interests and needs of students, and to address the feedback from and demands of employers, so that the program stays competitive and remains a leader among similar programs in Michigan and across the U.S. The academic programs in Fisheries and Wildlife at MSU are recognized within the discipline as being among the top programs across the nation, and the adjustments that have been made to program requirements will help maintain that stature. These adjustments include increased emphasis on global climate change, natural resources policy, and diversity, equity and inclusion. Also added are two new courses: a first-year skills-based 1-credit course, and a 3-credit senior capstone course (filling a gap in the curriculum in terms of synthesis).

The implementation of the four proposed degrees also will help prospective students find fisheries and wildlife earlier in their academic careers. Many students who have changed majors to Fisheries and Wildlife share they hadn't thought they would be interested in Fisheries and Wildlife. By adding majors in Applied Conservation Biology, and Aquatic Ecology and Management, the department will better attract those students as they enroll at MSU, which will promote more timely degree progress for these students.

This proposed major and the other three proposed new majors will continue to be unique among degree programs at MSU, due to the integration of fundamental sciences (biology, ecology, chemistry, geology, etc), management and decision-making techniques, and human dimensions. The department's breadth of research and partnerships, and location in the greater Lansing area, give the program an additional advantage in that it incorporates personnel from several state and federal natural resource agencies (all potential employers of students) into classes and into student experiential opportunities.

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The department has a strong and successful tradition of offering undergraduate degrees in this field. Many department alumni gain employment with Michigan natural resource agencies (and more broadly) with whom we have strong partnerships. Given the complex and increasingly apparent effects of climate change on natural resources, the program is timelier than ever.

- b. **Academic Programs Catalog Text:**

The Bachelor of Science in Fish Ecology and Management is designed for students interested in the research and management of fish populations, other freshwater and marine organisms, and the ecosystems that sustain them.

Admission as a Junior

To be considered for admission to the major, the student must:

1. Complete at least 56 credits.
2. Complete the following courses with a minimum grade of 2.0 in each course:

FW	101	Fundamentals of Fisheries and Wildlife Ecology and Management	3
FW	101L	Fundamentals of Fisheries and Wildlife Ecology and Management Lab	2
FW	293	Undergraduate Seminar in Fisheries and Wildlife	1
3. Pass the following courses:
 - a. FW 102 Succeeding in Fisheries and Wildlife – New Student Seminar 1
 - b. One of the following courses:

MTH	124	Survey of Calculus I	3
MTH	132	Calculus I	3
LB	118	Calculus I	4

Requirements for the Bachelor of Science Degree in Fish Ecology and Management

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 Fish Ecology and Management.

The University's Tier II writing requirement for the Fish Ecology and Management major is met by completing Fisheries and Wildlife 497 referenced in item 3. below.

Students who are enrolled in the Fish Ecology and Management major leading to the Bachelor of Science degree in the Department of Fisheries and Wildlife may complete an alternative track to Integrative Studies in Biological and Physical Sciences by completing BS 161, BS 162 and CEM 141 below. The completion of BS 171 or BS 172 and CEM 161 satisfies the laboratory requirement. Completion of items 3. a., 3. b., and 3. c. below will be counted toward both the alternative track and the requirements for the major.

The completion of the College of Agriculture and Natural Resources mathematics requirement may also satisfy the University mathematics requirement.

2. The requirements of the College of Agriculture and Natural Resources for the Bachelor of Science degree.

Certain courses referenced in requirement 3. below may be counted toward College requirements as appropriate. The completion of item 3. d. and 3. e. below satisfies the College's mathematics requirement.

Students must earn a 2.0 or higher in all FW courses taken to complete major requirements in item 3. below.

Only credits in courses graded on the numerical or Pass-No Grade system may be counted toward the requirements for the major. Students may not enroll in courses required for the major, including courses in other departments, on a Credit-No Credit basis. Only elective courses can be enrolled on a Credit-No Credit basis.

3. The following requirements for the major:

				CREDITS
a. All of the following courses (29 credits):				
FW	101	Fundamentals of Fisheries and Wildlife Ecology and Management		3
FW	101L	Fundamentals of Fisheries and Wildlife Ecology and Management Lab		2
FW	102	Fundamentals of Fisheries and Wildlife – New Student Seminar		1
FW	293	Undergraduate Seminar in Fisheries and Wildlife		1
FW	334	Human Dimensions of Fisheries and Wildlife Management		3
FW	364	Ecological Problem Solving		3

	FW	471	Ichthyology	4
	FW	474	Field and Laboratory Techniques for Aquatic Studies	3
	FW	479	Fish Population Analysis and Management	3
	FW	497	Capstone in Fisheries and Wildlife: Conservation and Management Decision Making (W)	3
	IBIO	355	Ecology	3
b.	One of the following groups of courses (6 or 9 credits):			
	(a)	BS	161 Cell and Molecular Biology	3
		BS	162 Organismal and Population Biology	3
	(b)	LB	144 Biology I: Organismal Biology	4
		LB	145 Biology II: Cellular and Molecular Biology	5
c.	One of the following courses (2 credits):			
	BS	171	Cell and Molecular Biology Laboratory	2
	BS	172	Organismal and Population Biology Laboratory	2
	This requirement is waived if students complete LB 144 or LB 145 in item b.			
d.	One course from each group (5 credits):			
	(a)	CEM	141 General Chemistry	4
		LB	171 Principles of Chemistry	4
	(b)	CEM	161 Chemistry Laboratory	1
		LB	171L Principles of Chemistry Laboratory I	1
e.	At least 7 credits from the following courses:			
	CEM	142	General and Inorganic Chemistry	3
	CEM	162	Chemistry Laboratory II	1
	CEM	143	Survey of Organic Chemistry	4
	CEM	251	Organic Chemistry I	3
	CSS	210	Fundamentals of Soil Science	3
	FOR	419	Applications of Geographic Information Systems to Natural Resources Management	4
	GEO	203	Introduction to Meteorology	3
	GEO	206	Physical Geography	3
	GEO	208	Physical Geography of the National Parks	2
	GEO	221	Introduction to Geographic Information	3
	GEO	221L	Introduction to Geographic Information Laboratory	1
	GEO	333	Geography of Michigan and the Great Lakes Region	3
	GEO	411	Stream Systems and Landforms	3
	GLG	201	The Dynamic Earth	4
	GLG	411	Hydrogeology	3
	LB	172	Principles of Chemistry II	3
	LB	172L	Principles of Chemistry II – Reactivity Laboratory I	1
	LB	271	Organic Chemistry	3
	LB	273	Physics I	4
	PHY	221	Studio Physics for Life Scientists I	4
	PHY	231	Introductory Physics I	3
	PHY	251	Introductory Physics Laboratory I	1
	Students who select FOR 419 to fulfill this requirement may not also use GEO 221 and 221L.			
f.	One of the following courses (3 or 4 credits):			
	MTH	124	Survey of Calculus I	3
	MTH	132	Calculus I	3
	LB	118	Calculus I	4
g.	One of the following courses (3 or 4 credits):			
	STT	201	Statistical Methods	4
	STT	224	Introduction to Probability and Statistics for Ecologists	3
	STT	231	Statistics for Scientists	3
	STT	421	Statistics I	3
	STT	464	Statistics for Biologists	3
h.	One of the following courses (3 or 4 credits):			
	CSUS	310	History of Environmental Thought and Sustainability	3
	FW	439	Conservation Ethics	3
	HST	391	Environmental History of North America	3
	PHL	340	Ethics	3
	PHL	342	Environmental Ethics	3
	PHL	380	Nature of Science	3
	PHL	442	Ethics and Animals	3

	PHL	480	Philosophy of Science	4
i.	Two of the following courses (6 or 7 credits):			
	COM	100	Human Communication	3
	COM	225	An Introduction to Interpersonal Communication	3
	COM	240	Introduction to Organizational Communication	4
	COM	275	Effects of Mass Communication	3
	CSUS	433	Grant Writing and Fund Development	3
	JRN	472	Environmental, Science and Health Reporting	3
	WRA	331	Writing in the Public Interest (W)	3
	WRA	333	Writing in Corporate Contexts	3
	WRA	335	Writing in Scientific Contexts	3
	WRA	337	Writing and Public Policy	3
	WRA	453	Grant and Proposal Writing	3
j.	One of the following courses (3 credits):			
	CSUS	464	Environmental and Natural Resource Policy in Michigan	3
	CSUS	465	Environmental and Natural Law	3
	FOR	466	Natural Resource Policy	3
	FW	445	Biodiversity Conservation Policy and Practice	3
	FW	481	Global Issues in Fisheries and Wildlife	3
	IBIO	446	Environmental Issues in Public Policy	3
	MC	450	International Environmental Law and Policy	3
k.	Two of the following courses (6 credits):			
	CSUS	354	Water Resources Management	3
	FW	416	Marine Ecology and Management	3
	FW	417	Wetland Ecology and Management	3
	FW	420	Stream Ecology	3
	FW	472	Limnology	3
	GLG	303	Oceanography	3
l.	One of the following courses (3 or 4 credits):			
	PLB	218	Plants of Michigan	3
	PLB	418	Plant Systematics	3
	ENT	404	Fundamentals of Entomology	4
	ENT	422	Aquatic Entomology	3
	IBIO	306	Invertebrate Biology	4
m.	One of the following courses (3 or 4 credits):			
	FW	423	Principles of Fish and Wildlife Disease	3
	FW	431	Ecophysiology and Toxicology of Fishes	3
	FW	463	Wildlife Disease Ecology	3
	IBIO	313	Animal Behavior	3
	IBIO	328	Comparative Anatomy and Biology of Vertebrates	4
	IBIO	341	Fundamental Genetics	4
	IBIO	483	Environmental Physiology	3
n.	One of the following courses (3 credits):			
	ANP	443	Human Adaptability	3
	ANP	486	Environmental Archaeology	3
	FOR	360	Forest Ecosystems, Carbon and Climate Change	3
	GEO	409	Global Climate Change and Variability	3
	IBIO	357	Global Change Biology (W)	3
	SOC	478	Climate Change and Society	3
o.	Complete a minimum of 3 credits from the following courses (3 or 4 credits):			
	FW	480	International Studies in Fisheries and Wildlife	1 to 3
	FW	490	Independent Study in Fisheries and Wildlife	1 to 3
	FW	493	Professional Internship in Fisheries and Wildlife	1 to 3
	FW	499	Senior Thesis in Fisheries and Wildlife	4

4. Establish a **Bachelor of Science in Wildlife Ecology and Management** in the Department of Fisheries and Wildlife. The University Committee on Undergraduate Education (UCUE) recommended approval of this request at its November 30, 2023 meeting.

a. **Background Information:**

The Department of Fisheries and Wildlife has offered an undergraduate degree program related to conservation of fish, wildlife, and water for more than 70 years. The program currently offers one Fisheries and Wildlife degree, with six concentrations – Conservation Biology, Fisheries Biology and Management, Wildlife Biology and Management, Water Sciences, Fish and Wildlife Disease Ecology and Management, and Pre-veterinary Medicine. The department proposes moving from a single bachelor's degree to offering four degrees, each of which builds on one of our four concentrations with the highest enrollments– Applied Conservation Biology, Fish Ecology and Management, Wildlife Ecology and Management, and Aquatic Ecology and Management.

As the department developed these proposed new majors, they updated the degree requirements (as compared to the existing degree and concentration requirements), to meet the interests and needs of students, and to address the feedback from and demands of employers, so that the program stays competitive and remains a leader among similar programs in Michigan and across the U.S. The academic programs in Fisheries and Wildlife at MSU are recognized within the discipline as being among the top programs across the nation, and the adjustments that have been made to program requirements will help maintain that stature. These adjustments include increased emphasis on global climate change, natural resources policy, and diversity, equity and inclusion. Also added are two new courses: a first-year skills-based 1-credit course, and a 3-credit senior capstone course (filling a gap in the curriculum in terms of synthesis).

The implementation of the four proposed degrees also will help prospective students find fisheries and wildlife earlier in their academic careers. Many students who have changed majors to Fisheries and Wildlife share they hadn't thought they would be interested in Fisheries and Wildlife. By adding majors in Applied Conservation Biology, and Aquatic Ecology and Management, the department will better attract those students as they enroll at MSU, which will promote more timely degree progress for these students.

This proposed major and the other three proposed new majors will continue to be unique among degree programs at MSU, due to the integration of fundamental sciences (biology, ecology, chemistry, geology, etc), management and decision-making techniques, and human dimensions. The department's breadth of research and partnerships, and location in the greater Lansing area, give the program an additional advantage in that it incorporates personnel from several state and federal natural resource agencies (all potential employers of students) into classes and into student experiential opportunities.

There are no accrediting bodies for fisheries and wildlife, but the American Fisheries Society, The Wildlife Society, and the Ecological Society of America all have certification requirements. The curriculum is intentionally designed so that students can choose courses that will allow them to successfully apply for certification upon graduation, if that is what they desire. Students not desiring certification have even broader course options within topic categories.

The department has a strong and successful tradition of offering undergraduate degrees in this field. Many department alumni gain employment with Michigan natural resource agencies (and more broadly) with whom we have strong partnerships. Given the complex and increasingly apparent effects of climate change on natural resources, the program is timelier than ever.

b. **Academic Programs Catalog Text:**

The Bachelor of Science in Wildlife Ecology and Management is for students interested in understanding and managing terrestrial habitats and animals including game, non-game, and endangered species.

Admission as a Junior

To be considered for admission to the major, the student must:

1. Complete at least 56 credits.
2. Complete the following courses with a minimum grade of 2.0 in each course:

FW	101	Fundamentals of Fisheries and Wildlife Ecology and Management	3
FW	101L	Fundamentals of Fisheries and Wildlife Ecology and Management Lab	2
FW	293	Undergraduate Seminar in Fisheries and Wildlife	1
3. Pass the following courses:
 - a. FW 102 Succeeding in Fisheries and Wildlife – New Student Seminar 1
 - b. One of the following courses:

MTH	124	Survey of Calculus I	3
MTH	132	Calculus I	3
LB	118	Calculus I	4

Requirements for the Bachelor of Science Degree in Wildlife Ecology and Management

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 Wildlife Ecology and Management.

The University's Tier II writing requirement for the Wildlife Ecology and Management major is met by completing Fisheries and Wildlife 497 referenced in item 3. below.

Students who are enrolled in the Wildlife Ecology and Management major leading to the Bachelor of Science degree in the Department of Fisheries and Wildlife may complete an alternative track to Integrative Studies in Biological and Physical Sciences by completing BS 161, BS 162 and CEM 141 below. The completion of BS 171 or BS 172 and CEM 161 satisfies the laboratory requirement. Completion of items 3. a., 3. b., and 3. c. below will be counted toward both the alternative track and the requirements for the major.

The completion of the College of Agriculture and Natural Resources mathematics requirement may also satisfy the University mathematics requirement.

2. The requirements of the College of Agriculture and Natural Resources for the Bachelor of Science degree.

Certain courses referenced in requirement 3. below may be counted toward College requirements as appropriate. The completion of item 3. d. and 3. e. below satisfies the College's mathematics requirement.

Students must earn a 2.0 or higher in all FW courses taken to complete major requirements in item 3. below.

Only credits in courses graded on the numerical or Pass-No Grade system may be counted toward the requirements for the major. Students may not enroll in courses required for the major, including courses in other departments, on a Credit-No Credit basis. Only elective courses can be enrolled on a Credit-No Credit basis.

3. The following requirements for the major:

			CREDITS
a.	All of the following courses (34 credits):		
	CSS	210 Fundamentals of Soil Science	3
	FW	101 Fundamentals of Fisheries and Wildlife Ecology and Management	3
	FW	101L Fundamentals of Fisheries and Wildlife Ecology and Management Lab	2
	FW	102 Fundamentals of Fisheries and Wildlife – New Student Seminar	1
	FW	293 Undergraduate Seminar in Fisheries and Wildlife	1
	FW	334 Human Dimensions of Fisheries and Wildlife Management	3

	FW	364	Ecological Problem Solving	3
	FW	410	Upland Ecology and Management	3
	FW	413	Wildlife Research and Management Techniques	3
	FW	417	Wetland Ecology and Management	3
	FW	424	Wildlife Population Analysis and Management	3
	FW	497	Capstone in Fisheries and Wildlife: Conservation and Management Decision Making (W)	3
	IBIO	355	Ecology	3
b.	One of the following groups of courses (6 or 9 credits):			
(a)	BS	161	Cell and Molecular Biology	3
	BS	162	Organismal and Population Biology	3
(b)	LB	144	Biology I: Organismal Biology	4
	LB	145	Biology II: Cellular and Molecular Biology	5
c.	One of the following courses (2 credits):			
	BS	171	Cell and Molecular Biology Laboratory	2
	BS	172	Organismal and Population Biology Laboratory	2
	This requirement is waived if students complete LB 144 or LB 145 in item b.			
d.	One course from each group (5 credits):			
(a)	CEM	141	General Chemistry	4
	LB	171	Principles of Chemistry	4
(b)	CEM	161	Chemistry Laboratory	1
	LB	171L	Principles of Chemistry Laboratory I	1
e.	One of the following courses (3 or 4 credits):			
	MTH	124	Survey of Calculus I	3
	MTH	132	Calculus I	3
	LB	118	Calculus I	4
f.	One of the following courses (3 or 4 credits):			
	STT	201	Statistical Methods	4
	STT	224	Introduction to Probability and Statistics for Ecologists	3
	STT	231	Statistics for Scientists	3
	STT	421	Statistics I	3
	STT	464	Statistics for Biologists	3
g.	One of the following courses (3 or 4 credits):			
	CSUS	310	History of Environmental Thought and Sustainability	3
	FW	439	Conservation Ethics	3
	HST	391	Environmental History of North America	3
	PHL	340	Ethics	3
	PHL	342	Environmental Ethics	3
	PHL	380	Nature of Science	3
	PHL	442	Ethics and Animals	3
	PHL	480	Philosophy of Science	4
h.	Two of the following courses (6 or 7 credits):			
	COM	100	Human Communication	3
	COM	225	An Introduction to Interpersonal Communication	3
	COM	240	Introduction to Organizational Communication	4
	COM	275	Effects of Mass Communication	3
	CSUS	433	Grant Writing and Fund Development	3
	JRN	472	Environmental, Science and Health Reporting	3
	WRA	331	Writing in the Public Interest (W)	3
	WRA	333	Writing in Corporate Contexts	3
	WRA	335	Writing in Scientific Contexts	3
	WRA	337	Writing and Public Policy	3
	WRA	453	Grant and Proposal Writing	3
i.	One of the following courses (3 credits):			
	CSUS	464	Environmental and Natural Resource Policy in Michigan	3
	CSUS	465	Environmental and Natural Law	3
	FOR	466	Natural Resource Policy	3
	FW	445	Biodiversity Conservation Policy and Practice	3
	FW	481	Global Issues in Fisheries and Wildlife	3
	IBIO	446	Environmental Issues in Public Policy	3
	MC	450	International Environmental Law and Policy	3

j.	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	4
k.	One of the following courses (3 or 4 credits):			
	FOR	204	Forest Vegetation	3
	PLB	218	Plants of Michigan	3
	PLB	418	Plant Systematics	3
l.	One of the following courses (3 or 4 credits):			
	CSS	350	Introduction to Plant Genetics	3
	FOR	340	Forest Ecology	3
	GEO	201	Introduction to Plant Geography	3
	IBIO	485	Tropical Biology	3
	PLB	105	Plant Biology	3
	PLB	301	Introductory Plant Physiology	3
	PLB	402	Biology of Fungi	4
	PLB	441	Plant Ecology	3
	PLB	443	Restoration Ecology	3
m.	One of the following courses (3 or 4 credits):			
	CSS	411	Fire and Environmental Quality	3
	FOR	413	Wildland Fire Ecology and Management	3
	FOR	419	Applications of Geographic Information Systems to Natural Resources Management	4
	FW	423	Principles of Fish and Wildlife Disease	3
	FW	463	Wildlife Disease Ecology	3
	GEO	221	Introduction to Geographic Information and	3
	GEO	221L	Introduction to Geographic Information Laboratory	1
	IBIO	313	Animal Behavior	3
	IBIO	328	Comparative Anatomy and Biology of Vertebrates	4
	IBIO	341	Fundamental Genetics	4
	IBIO	483	Environmental Physiology	3
	SOC	452	Advanced Seminar in Environmental Sociology	3
n.	One of the following courses (3 credits):			
	ANP	443	Human Adaptability	3
	ANP	486	Environmental Archaeology	3
	FOR	360	Forest Ecosystems, Carbon and Climate Change	3
	GEO	409	Global Climate Change and Variability	3
	IBIO	357	Global Change Biology (W)	3
	SOC	478	Climate Change and Society	3
o.	Complete a minimum of 3 credits from the following courses (3 or 4 credits):			
	FW	480	International Studies in Fisheries and Wildlife	1 to 3
	FW	490	Independent Study in Fisheries and Wildlife	1 to 3
	FW	493	Professional Internship in Fisheries and Wildlife	1 to 3
	FW	499	Senior Thesis in Fisheries and Wildlife	4

Effective Fall 2024.

COLLEGE OF EDUCATION

1. Change the requirements for the **Master of Arts** degree in **Education** in the College of Education. The University Committee on Graduate Studies (UCGS) approved this request at its January 22, 2024 meeting.

The primary concentrations in the Master of Arts degree in Education are noted on the student's academic record when the requirements for the degree have been completed.

- a. Under the heading **Requirements for the Master of Arts Degree in Education** make the following change in item 3.:

- (1) Delete the 'Sport Coaching and Leadership' concentration.
- (2) Add the following two concentrations:

Athletic Administration
Athletic Coaching

Effective Fall 2024.

COLLEGE OF HUMAN MEDICINE

1. Change the requirements for the **Professional Program in Human Medicine** leading to the **Doctor of Medicine (M.D.)** degree. The University Committee on Graduate Studies (UCGS) approved this request at its January 22, 2024 meeting.

- a. Under the heading **PROGRAM IN HUMAN MEDICINE** make the following changes:

- (1) Under the heading **Admission to the Program in Human Medicine** add the following to paragraph five:

7. Be immunized per the CDC recommendations for health care providers.

- (2) Under the **Requirements for the Doctor of Medicine Degree**, in item 4., make the following changes:

- (1) Delete MED 635.

- (2) Add the following course:

NOP 630 Senior Clinical Elective in Neurology 6 to 12

- (3) Change the credits of PHD 604 from '6' to '3 to 12'.

Effective Summer 2024.

COLLEGE OF NATURAL SCIENCE

1. Change the requirements for the **Doctor of Philosophy** degree in **Chemistry** in the Department of Chemistry. The University Committee on Graduate Studies (UCGS) approved this request at its January 22, 2024 meeting.
 - a. Under the heading **Requirements for the Doctor of Philosophy Degree in Chemistry** replace the entire entry with the following:
 1. Complete a minimum of one year of teaching requirement
 2. Complete a minimum of 12 to 18 credits of 800-900 level courses through a minimum of 6 courses. Credits earned in requirements 3. and 4. may not be used to fulfill this requirement.
 3. Complete the following courses (2 credits):

CEM	890	Chemical Problems and Reports (section 1 Faculty Seminar)	1
CEM	890	Chemical Problems and Reports (section 2 Second Year Oral)	1
 4. Complete 2 credits of seminar course work from one of the following areas: Analytical, Inorganic, Nuclear, Organic, or Physical to demonstrate research preparedness and as a defense of the dissertation. The student's course work must be planned and approved by their academic advisor.
 5. Satisfactory performance on doctoral comprehensive examinations of the cumulative type is required. Details about these and the qualification examinations may be obtained from the department.
 6. Complete at least 24 credits and no more than 36 credits of CEM 999 Doctoral Dissertation Research.
 7. All students must complete Responsible Conduct of Research Training - <https://grad.msu.edu/recr>
 8. Additional details on applicable course work can be found in the CEM graduate handbook at www.chemistry.msu.edu.

Effective Summer 2024.

COLLEGE OF SOCIAL SCIENCE

1. Change the name of the **Minor in Geographic Information Science to Earth Observation and Geospatial Analytics** in the Department of Geography, Environment, and Spatial Sciences.

No new students are to be admitted to the Minor in Geographic Information Science effective Fall 2024. No students are to be readmitted to the Minor in Geographic Information Science effective Fall 2024. Effective Spring 2029, coding for the Minor in Geographic Information Science will be discontinued and the program will no longer be available in the Department of Geography, Environment, and Spatial Sciences. Students admitted to the minor prior to Fall 2024 will be awarded a Minor in Geographic Information Science in the Department of Geography, Environment, and Spatial Sciences. Students admitted to the minor Fall 2024 and forward will be awarded a Minor in Earth Observation and Geospatial Analytics in the Department of Geography, Environment, and Spatial Sciences.

Effective Fall 2024.

2. Change the requirements for the **Minor in Earth Observation and Geospatial Analytics** in the Department of Geography, Environment, and Spatial Sciences.

a. Under the heading **Minor in Earth Observation and Geospatial Analytics**, replace the entire entry with the following:

1. The following course (3 credits):

	GEO 221	Introduction to Geographic Information	3
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2. Complete a minimum of 9 credits from the following courses:

	FOR 372	Ecological Monitoring and Data Analysis	3
	FOR 419	Applications of Geographic Information Systems to Natural Resources Management	4
	GEO 221L	Introduction to Geographic Information Laboratory	1
	GEO 324	Remote Sensing of the Environment	4
	GEO 325	Geographic Information Systems	3
	GEO 326	Cartographic Design and Production	4
	GEO 363	Introduction to Quantitative Methods for Geographers	3
	GEO 424	Advanced Remote Sensing	4
	GEO 425	Problems in Geographic Information Science (W)	3
	GEO 426	Thematic Cartography	4
	GEO 428	Digital Terrain Analysis	3
	GEO 429	Programming with Spatial Data	3
3. Complete an additional minimum of 3 credits from any GEO electives.

Effective Fall 2024.

3. Change the requirements for the **Minor in Environment and Health** in the Department of Geography, Environment and Spatial Sciences.

a. Under the heading **Requirements for the Minor in Environment and Health** replace the entire entry with the following:

Complete a minimum of 15 credits from the following:

- | | | | CREDITS |
|----|---|--|---------|
| 1. | One of the following courses (3 credits): | | |
| | GEO 151 | Introduction to Human Geography | 3 |
| | GEO 235 | Geography of Environment and Health | 3 |
| 2. | One of the following courses (3 or 4 credits): | | |
| | ANP 204 | Introduction to Medical Anthropology | 3 |
| | EC 498 | Economics of Health Care (W) | 3 |
| | HDFS 225 | Lifespan Human Development in the Family | 3 |
| | HST 425 | American and European Health Care since 1800 | 4 |
| | PSY 320 | Health Psychology | 3 |
| | SOC 252 | Introduction to Environmental Sociology | 3 |
| | SOC 451 | Dynamics of Population | 3 |
| 3. | Complete two of the following courses (6 to 8 credits): | | |
| | AFRE 100 | Decision-making in the Agri-Food System | 3 |
| | AFRE 206 | World Food, Population and Poverty | 3 |
| | ANS 427 | Environmental Toxicology and Society | 3 |
| | CSS 120 | Issues in Food and Agriculture | 3 |
| | CSS 210 | Fundamentals of Soil Science | 3 |
| | CSUS 200 | Introduction to Sustainability | 3 |
| | CSUS 354 | Water Resources Management | 3 |
| | ENT 205 | Pests, Society, and Environment | 3 |
| | EPI 390 | Disease in Society: Introduction to Epidemiology and Public Health | 4 |
| | FOR 372 | Ecological Monitoring and Data Analysis | 3 |
| | FOR 411 | Fire and Environmental Quality | 3 |
| | HNF 150 | Introduction to Human Nutrition | 3 |
| | HNF 385 | Public Health Nutrition | 3 |
| | MC 337 | Global Public Health | 4 |
| | OST 402 | Introduction to Global Health | 3 |
| | PH 101 | Introduction to Public Health | 3 |

	PHL	453	Ethical Issues in Global Public Health	3
	REL	210	Religion and the Environment	3
	STT	224	Introduction to Probability and Statistics for Ecologists	3
	STT	464	Statistics for Biologists	3
4.	Complete one of the following courses (3 credits):			
	ANP	370	Culture, Health, and Illness	3
	GEO	435	Geography of Health and Disease	3

Effective Fall 2024.

4. Change the name of the **Minor in Geography to Human-Environment and Economic Geography** in the Department of Geography, Environment, and Spatial Sciences.

No new students are to be admitted to the Minor in Geography effective Fall 2024. No students are to be readmitted to the Minor in Geography effective Fall 2024. Effective Spring 2029, coding for the Minor in Geography will be discontinued and the program will no longer be available in the Department of Geography, Environment, and Spatial Sciences. Students admitted to the minor prior to Fall 2024 will be awarded a Minor in Geography in the Department of Geography, Environment, and Spatial Sciences. Students admitted to the minor Fall 2024 and forward will be awarded a Minor in Human-Environment and Economic Geography in the Department of Geography, Environment, and Spatial Sciences.

Effective Fall 2024.

5. Change the requirements for the **Minor in Human-Environment and Economic Geography** in the Department of Geography, Environment, and Spatial Sciences.

- a. Under the heading **Minor in Human Environment and Economic Geography**, replace the entire entry with the following:

1.	Complete one of the following courses:			
	GEO	113	Introduction to Economic Geography	3
	GEO	151	Introduction to Human Geography	3
	GEO	204	World Regional Geography	3
	GEO	214	Geography of Drugs	3
	GEO	215	Sports Geography	3
	GEO	235	Geography of Environment and Health	3
2.	Complete a minimum of 9 credits from the following courses:			
	GEO	410	Geography of Food and Agriculture	3
	GEO	413	Urban Geography	3
	GEO	414	Transportation Systems and Sustainable Cities	3
	GEO	435	Geography of Health and Disease	3
	GEO	436	Spatial Analysis of Populations	3
	GEO	440	Geopolitics	3
	GEO	441	Cultural Geography	3
	GEO	453	Metropolitan Environments: Urban Forms and Land Uses	3
3.	Complete an additional minimum of 3 credits from any GEO electives.			

Effective Fall 2024.

6. Change the name of the **Minor in Climate Science** to **Physical Environment and Climate** in the Department of Geography, Environment, and Spatial Sciences.

No new students are to be admitted to the Minor in Climate Science effective Fall 2024. No students are to be readmitted to the Minor in Climate Science effective Fall 2024. Effective Spring 2029, coding for the Minor in Climate Science will be discontinued and the program will no longer be available in the Department of Geography, Environment, and Spatial Sciences. Students admitted to the minor prior to Fall 2024 will be awarded a Minor in Climate Science in the Department of Geography, Environment, and Spatial Sciences. Students admitted to the minor Fall 2024 and forward will be awarded a Minor in Physical Environment and Climate in the Department of Geography, Environment, and Spatial Sciences. Effective Fall 2024.

7. Change the requirements for the **Minor in Physical Environment and Climate** in the Department of Geography, Environment, and Spatial Sciences.

- a. Under the heading **Minor in Physical Environment and Climate**, replace the entire entry with the following:

1. Complete one of the following courses:

GEO	201	Introduction to Plant Geography	3
GEO	203	Introduction to Meteorology	3
GEO	206	Physical Geography	3
2. Complete a minimum of 9 credits from the following courses:

GEO	206L	Physical Geography Laboratory	2
GEO	302	Climates of the World	3
GEO	303	Severe and Hazardous Weather	3
GEO	306	Environmental Geomorphology	3
GEO	402	Agricultural Climatology	3
GEO	403	Dynamic Meteorology (W)	3
GEO	405	Weather Analysis and Forecasting	4
GEO	407	Regional Geomorphology of the United States	3
GEO	409	Global Climate Change and Variability	3
GEO	411	Stream Systems and Landforms	3
3. Complete an additional minimum of 3 credits from any GEO electives.

Effective Fall 2024.

8. Change the name of the **Bachelor of Arts degree in Human Geography** to **Geography** in the Department of Geography, Environment, and Spatial Sciences.

No new students are to be admitted to the Bachelor of Arts Degree in Human Geography effective Fall 2024. No students are to be readmitted to the Bachelor of Arts Degree in Human Geography effective Fall 2024. Effective Spring 2029, coding for the Bachelor of Arts Degree in Human Geography will be discontinued and the program will no longer be available in the Department of Geography, Environment, and Spatial Sciences. Students admitted to the bachelor's degree prior to Fall 2024 will be awarded a Bachelor of Arts Degree in Human Geography in the Department of Geography, Environment, and Spatial Sciences. Students admitted to the bachelor's degree Fall 2024 and forward will be awarded a Bachelor of Arts Degree in Geography in the Department of Geography, Environment, and Spatial Sciences.

Effective Fall 2024.

9. Change the requirements for the **Bachelor of Arts Degree in Geography** in the Department of Geography, Environment, and Spatial Sciences.

- a. Under the heading **Requirements for the Bachelor of Arts Degree in Geography**, replace the entire entry with the following:

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 Arts degree in Geography.

The University's Tier II writing requirement for the Geography major is met by completing Geography 480. That course is referenced in item 3. below.

2. The requirements of the College of Social Science for the Bachelor of Arts degree. The Experiential Learning requirement is satisfied with a minimum numeric grade of 2.0 in GEO 480.
3. The following courses with a minimum 2.0 grade-point average across all attempted GEO courses (minimum of 30 credits):
 - a. Complete a minimum of 12 credits from the following courses:

GEO 113	Introduction to Economic Geography	3
GEO 151	Introduction to Human Geography	3
GEO 201	Introduction to Plant Geography	3
GEO 203	Introduction to Meteorology	3
GEO 204	World Regional Geography	3
GEO 206	Physical Geography	3
GEO 206L	Physical Geography Laboratory	2
GEO 208	Physical Geography of the National Parks	2
GEO 211	Environmental Policy and Practice	3
GEO 214	Geography of Drugs	3
GEO 215	Sports Geography	3
GEO 221	Introduction to Geographic Information	3
GEO 221L	Introduction to Geographic Information Laboratory	1
GEO 235	Geography of Environment and Health	3
GEO 286	Undergraduate Research in Geography	3
 - b. The following course (3 credits):

GEO 480	Undergraduate Seminar in Geography (W)	3
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 - c. Complete an additional minimum of 15 credits from any GEO course at the 300-level or 400-level.

Students are encouraged to complete a first-year seminar such as UGS 110, as well as an internship experience, which can apply as GEO 498 when approved by the student's academic advisor. Students planning to complete a graduate degree in geography are encouraged to complete GEO 113, GEO 151, GEO 206, GEO 221, and GEO 363.

Effective Fall 2024.

10. Change the name of the **Bachelor of Science degree in Environmental Geography** to **Geography** in the Department of Geography, Environment, and Spatial Sciences.

No new students are to be admitted to the Bachelor of Science Degree in Environmental Geography effective Fall 2024. No students are to be readmitted to the Bachelor of Science Degree in Environmental Geography effective Fall 2024. Effective Spring 2029, coding for the Bachelor of Science Degree in Environmental Geography will be discontinued and the program will no longer be available in the Department of Geography, Environment, and Spatial Sciences. Students admitted to the bachelor's degree prior to Fall 2024 will be awarded a Bachelor of Science Degree in Environmental Geography in the Department of Geography, Environment, and Spatial Sciences. Students admitted to the bachelor's degree Fall 2024 and forward will be awarded a Bachelor of Science Degree in Geography in the Department of Geography, Environment, and Spatial Sciences.

Effective Fall 2024.

11. Request to change the requirements for the **Bachelor of Science Degree in Geography** in the Department of Geography, Environment, and Spatial Sciences.

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

- a. Under the heading **Requirements for the Bachelor of Arts Degree in Geography**, replace the entire entry with the following:

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 Geography.

The University's Tier II writing requirement for the Geography major is met by completing Geography 480. That course is referenced in item 3. below.

2. The requirements of the College of Social Science for the Bachelor of Arts degree. The Experiential Learning requirement is satisfied with a minimum numeric grade of 2.0 in GEO 480. The STEM requirement for the College of Social Science is met by completion of 12 credits as noted below.

3. The following courses with a minimum 2.0 grade-point average across all attempted GEO courses (minimum of 30 credits):

- a. Complete a minimum of 12 credits from the following courses:

GEO	113	Introduction to Economic Geography	3
GEO	151	Introduction to Human Geography	3
GEO	201	Introduction to Plant Geography	3
GEO	203	Introduction to Meteorology	3
GEO	204	World Regional Geography	3
GEO	206	Physical Geography	3
GEO	206L	Physical Geography Laboratory	2
GEO	208	Physical Geography of the National Parks	2
GEO	211	Environmental Policy and Practice	3
GEO	214	Geography of Drugs	3
GEO	215	Sports Geography	3
GEO	221	Introduction to Geographic Information	3
GEO	221L	Introduction to Geographic Information Laboratory	1
GEO	235	Geography of Environment and Health	3
GEO	286	Undergraduate Research in Geography	3

- b. Complete a minimum of 12 credits from one of the following concentrations:

Earth Observation and Geospatial Analytics

FOR	372	Ecological Monitoring and Data Analysis	3
FOR	419	Applications of Geographic Information Systems to Natural Resources Management	4
GEO	324	Remote Sensing of the Environment	4
GEO	325	Geographic Information Systems	3
GEO	326	Cartographic Design and Production	4
GEO	363	Introduction to Quantitative Methods for Geographers	3
GEO	424	Advanced Remote Sensing	4
GEO	425	Problems in Geographic Information Science (W)	3
GEO	426	Thematic Cartography	4
GEO	428	Digital Terrain Analysis	3
GEO	429	Programming with Spatial Data	3

Human-Environment, and Economic Geography

GEO	410	Geography of Food and Agriculture	3
GEO	413	Urban Geography	3
GEO	414	Transportation Systems and Sustainable Cities	3
GEO	435	Geography of Health and Disease	3
GEO	436	Spatial Analysis of Populations	3
GEO	440	Geopolitics	3
GEO	441	Cultural Geography	3
GEO	453	Metropolitan Environments: Urban Forms and Land Uses	3

Physical Environment and Climate

	GEO	302	Climates of the World	3	
	GEO	303	Severe and Hazardous Weather	3	
	GEO	306	Environmental Geomorphology	3	
	GEO	402	Agricultural Climatology	3	
	GEO	403	Dynamic Meteorology (W)	3	
	GEO	405	Weather Analysis and Forecasting	4	
	GEO	407	Regional Geomorphology of the United States	3	
	GEO	409	Global Climate Change and Variability	3	
	GEO	411	Stream Systems and Landforms	3	
c.	Complete the following course:				
	GEO	480	Undergraduate Seminar in Geography (W)	3	
d.	Complete an additional minimum of 3 credits from any GEO electives at the 300-level or 400-level.				
	Students are encouraged to complete a first-year seminar such as UGS 110, as well as an internship experience, which can apply as GEO 498 when approved by the student's academic advisor. Students planning to complete a graduate degree in geography are encouraged to complete GEO 113, GEO 151, GEO 206, GEO 221, and GEO 363.				
e.	Complete 12 credits in Science, Technology, Engineering, and Mathematics (STEM) courses from the following courses. Fulfillment of this requirement satisfies the College of Social Science STEM Graduation Requirement for the Bachelor of Science degree. Courses used may not concurrently satisfy a University requirement.				
	(1)	Complete one of the following courses:			
		LB	118	Calculus I	4
		MTH	124	Survey of Calculus I	3
		MTH	132	Calculus I	3
		MTH	152H	Honors Calculus I	3
	(2)	Complete a minimum of 9 credits from the following courses:			
		AST	101	The Celestial Clockworks	1
		AST	207	The Science of Astronomy	3
		AST	208	Planets and Telescopes	3
		BE	101	Introduction to Biosystems Engineering	1
		BE	230	Engineering Analysis of Biological Systems	3
		BS	161	Cell and Molecular Biology	3
		BS	162	Organismal and Population Biology	3
		BS	171	Cell and Molecular Biology Laboratory	2
		BS	172	Organismal and Population Biology Laboratory	2
		CE	221	Statics	3
		CE	273	Civil and Environmental Engineering Measurements	2
		CE	274	Graphics for Civil and Environmental Engineers	1
		CE	275	GIS for Civil and Environmental Engineers	1
		CEM	141	General Chemistry	4
		CEM	142	General and Inorganic Chemistry	3
		CEM	143	Survey of Organic Chemistry	3
		CEM	151	General and Descriptive Chemistry	4
		CEM	152	Principles of Chemistry	3
		CEM	161	Chemistry Laboratory I	1
		CEM	162	Chemistry Laboratory II	1
		CEM	262	Quantitative Analysis	3
		CHE	201	Material and Energy Balances	3
		CHE	210	Modeling and Analysis of Transport Phenomena	3
		CMSE	201	Computational Modeling and Data Analysis I	4
		CMSE	202	Computational Modeling and Data Analysis II	4
		CSE	102	Algorithmic Thinking and Programming	3
		CSE	231	Introduction to Programming I	4
		CSS	101	Introduction to Crop Science	3
		CSS	210	Fundamentals of Soil Science	3
		CSUS	200	Introduction to Sustainability	3

ECE	101	Introduction to Electrical and Computer Engineering	1
ECE	201	Circuits and Systems I	3
ECE	202	Circuits and Systems II	3
ECE	203	Electric Circuits and Systems Laboratory	1
ECE	230	Digital Logic Fundamentals	3
ECE	280	Electrical Engineering Analysis	3
EGR	100	Introduction to Engineering Design	2
EGR	102	Introduction to Engineering Modeling	2
ENE	280	Principles of Environmental Engineering and Science	3
ENT	205	Pests, Society and Environment	3
FOR	101	Michigan's Forests	3
FOR	202	Introduction to Forestry	3
FOR	204	Forest Vegetation	3
FOR	222	Forestry Field Methods	2
FW	101	Fundamentals of Fisheries and Wildlife Ecology and Management	3
FW	110	Conservation and Management of Marine Resources	3
FW	181	Introduction to Science, Technology, the Environment, and Public Policy	3
FW	207	Great Lakes: Biology and Management	3
GLG	200	Introduction to Environmental Science and Global Change	4
GLG	201	The Dynamic Earth	4
ME	201	Thermodynamics	3
ME	222	Mechanics of Deformable Solids	3
ME	280	Graphic Communications	2
MSE	200	Materials and Society	2
MSE	250	Materials Science and Engineering	3
MSE	260	Electronic, Magnetic, Thermal, and Optical Properties of Materials	3
MTH	133	Calculus II	4
MTH	234	Multivariable Calculus	4
MTH	235	Differential Equations	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
PHY	215	Thermodynamics and Modern Physics	3
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
PLB	105	Plant Biology	3
PLB	106	Plant Biology Laboratory	1
PLB	203	Biology of Plants	4
PLB	218	Plants of Michigan	3
STT	180	Introduction to Data Science	4
STT	200	Statistical Methods	3
STT	201	Statistical Methods	4
STT	224	Introduction to Probability and Statistics for Ecologists	3
STT	231	Statistics for Scientists	3

Effective Fall 2024.

12. Change the administrative responsibility of the **Bachelor of Arts** degree in **Interdisciplinary Studies in Social Science: Social Science Education** from the College of Social Science to the Department of History.

Effective Fall 2024.

13. Change the name of the **Bachelor of Arts** degree in **Interdisciplinary Studies in Social Science: Social Science Education to History: Social Studies Education** in the Department of History. The Teacher Education Council (TEC) approved this request at its January 22, 2024 meeting.

No new students are to be admitted to the Bachelor of Arts degree in Interdisciplinary Studies in Social Science: Social Science Education effective Fall 2024. No students are to be readmitted to the Bachelor of Arts degree in Interdisciplinary Studies in Social Science: Social Science Education effective Fall 2024. Effective Fall 2024, coding for the Bachelor of Arts degree in Interdisciplinary Studies in Social Science: Social Science Education will be discontinued and the program will no longer be available in the College of Social Science. Students admitted to the major prior to Fall 2024 will be awarded a Bachelor of Arts degree in Interdisciplinary Studies in Social Science: Social Science Education in the College of Social Science. Students admitted to the major Fall 2024 and forward will be awarded a Bachelor of Arts degree in History: Social Studies Education in the Department of History.

Effective Summer 2024.

14. Change the requirements for the **Bachelor of Arts** degree in **History: Social Studies Education** in the Department of History. The Teacher Education Council (TEC) approved this request at its January 22, 2024 meeting.

- a. Under the heading **Requirements for the Bachelor of Arts Degree in History: Social Studies Education** make the following changes:

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

IAH	201	United States and the World (D)	4
IAH	202	Europe and the World (I)	4
IAH	203	Latin America and the World (I)	4
IAH	204	Asia and the World (I)	4
IAH	205	Africa and the World (I)	4
IAH	210	Middle East and the World (I)	4

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

HST	489	Seminar in Digital History (W)	3
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- (3) Delete items 3. e. and 3. f. and add the following new item 3. e.:

CEP	240	Introduction to Exceptional Learners	3
TE	101	Social Foundations of Justice and Equity in Education	3
TE	102	Pedagogy and Politics of Justice and Equity in Education	3
TE	150	Reflections on Learning	3
TE	302	Literacy and Adolescent Learners in School and Community Contexts	3
TE	325	Clinical Experience in Social Studies Education I	3
TE	341	Teaching and Learning of (Bi)Multilingual Learners	3
TE	425	Clinical Experience in Social Studies Education II	3
TE	426	Seminar in Social Studies Education I	3
TE	427	Seminar in Social Studies Education II	3
TE	428	Student Teaching Internship in Social Studies Education	6

Effective Fall 2024.

15. Change the name of the **Bachelor of Arts** degree in **Child Development: Birth to Kindergarten and Special Education** to **Child Development and Early Childhood Education: Birth to Kindergarten and Special Education** in the Department of Human Development and Family Studies. The Teacher Education Council (TEC) approved this request at its January 22, 2024 meeting.

No new students are to be admitted to the Bachelor of Arts degree in Child Development: Birth to Kindergarten and Special Education effective Summer 2024. No students are to be readmitted to the Bachelor of Arts degree in Child Development: Birth to Kindergarten and Special Education effective Fall 2024. Effective Summer 2024, coding for the Bachelor of Arts degree in Child Development: Birth to Kindergarten and Special Education will be discontinued and the program will no longer be available in the Department of Human Development and Family Studies. Students admitted to the major prior to Summer 2024 will be awarded a Bachelor of Arts degree in Child Development: Birth to Kindergarten and Special Education in the Department of Human Development and Family Studies. Students admitted to the major Summer 2024 and forward will be awarded a Bachelor of Arts degree in Child Development and Early Childhood Education: Birth to Kindergarten and Special Education in the Department of Human Development and Family Studies.

Effective Summer 2024.

16. Change the requirements for the **Bachelor of Arts** degree in **Child Development and Early Childhood Education: Birth to Kindergarten and Special Education** in the Department of Human Development and Family Studies. The Teacher Education Council (TEC) approved this request at its January 22, 2024 meeting.

a. Under the heading **Requirements for the Bachelor of Arts Degree in Child Development and Early Childhood Education: Birth to Kindergarten and Special Education**, make the following changes in item 3.:

(1) Delete the following course:

CEP	451	Models of Special Education Administration and Services	3
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Add the following course:

CEP	351	Special Education Law and Policies	3
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(2) Delete the following course:

TE	301	Children's Literacy Development (W)	3
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Add the following course:

TE	301A	Children's Literacy Development PK-3 (W)	3
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Effective Summer 2024.

17. Change the name of the **Bachelor of Arts** degree in **Human Capital and Society** to **Human Resources and Labor Relations** in the Department of Resources and Labor Relations.

No new students are to be admitted to the Bachelor of Arts degree in Human Capital and Society effective Summer 2024. No students are to be readmitted to the Bachelor of Arts degree in Human Capital and Society effective Fall 2024. Effective Summer 2024, coding for the Bachelor of Arts degree in Human Capital and Society will be discontinued and the program will no longer be available in the Department of Human Resources and Labor Relations. Students admitted to the major prior to Summer 2024 will be awarded a Bachelor of Arts degree in Human Capital and Society in the Department of Human Resources and Labor Relations. Students admitted to the major Summer 2024 and forward will be awarded a Bachelor of Arts degree in Human Resources and Labor Relations in the Department of Human Labor and Relations.

Effective Summer 2024.

18. Change the requirements for the **Bachelor of Arts** degree in **Human Resources and Labor Relations** in the Department of Human Resources and Labor Relations.

a. Under the heading **Requirements for the Bachelor of Arts Degree in Human Resources and Labor Relations**, make the following changes in item 3. d.:

(1) Under **General** add the following course:

HRLR 490 Special Topics in Human Resources and Labor Relations 3

Effective Summer 2024.

19. Change the requirements for the **Bachelor of Arts** degree in **Political Science (General)** in the Department of Political Science.

a. Under the heading **Requirements for the Bachelor of Arts Degree in Political Science (General)** make the following changes:

(1) Under item 3. a. change the credits of 'PLS 200' from '4' to '3'.

(2) Under item 3. b. change the credits of 'PLS 201' from '4' to '3'.

(3) Under item 3. d. change the credits of 'PLS 422 and PLS 481' from '4' to '3'.

(4) Under item 3. f. change 'Complete a minimum of four' to 'Complete a minimum of five' and change the credits of 'PLS 422 and PLS 481' from '4' to '3'.

(5) Under item 3. g., **International Politics**, delete the following course:

PLS 362 American Foreign Policy and National Security 3

Effective Fall 2024.

20. Change the requirements for the **Bachelor of Arts** degree in **Political Science-Prelaw** in the Department of Political Science.

a. Under the heading **Requirements for the Bachelor of Arts Degree in Political Science-Prelaw** make the following changes:

(1) Under item 3. a. change the credits of 'PLS 200' from '4' to '3'.

(2) Under item 3. b. change the credits of 'PLS 201' from '4' to '3'.

(3) Under item 3. e. change the credits of 'PLS 422 and PLS 481' from '4' to '3'.

(4) Under item 3. g. change 'Complete a minimum of three' to 'Complete a minimum of four' and change the credits of 'PLS 422 and PLS 481' from '4' to '3'.

(5) Under item 3. h., **International Politics**, delete the following course:

PLS 362 American Foreign Policy and National Security 3

Effective Fall 2024.

21. Change the requirements for the **Bachelor of Arts** degree in **Public Policy** in the Department of Political Science.

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

- (1) In item 3. a. (1) change the credits of 'PLS 200' from '4' to '3'.
- (2) In item 3. a. (2) change the credits of 'PLS 201' from '4' to '3'.
- (3) In item 3. a. (5) change the requirement from 'Complete a minimum of three' to 'Complete a minimum of four' and delete the following courses:

PLS	331	Political Parties and Interest Groups	3
PLS	362	American Foreign Policy and National Security	3

- (4) In item 3. a. (6) change the credits of 'PLS 422 and PLS 481' from '4' to '3'.

Effective Fall 2024.

22. Change the requirements for the **Bachelor of Arts** degree in **World Politics** in the Department of Political Science.

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

- (1) Under item 3. a. (1) change the credits of 'PLS 200' from '4' to '3'.
- (2) Under item 3. b. (2) change the credits of 'PLS 201' from '4' to '3'.
- (3) Under item 3. a. (4) change 'Complete a minimum of four' to 'Complete a minimum of five' and delete the following course:

PLS	362	American Foreign Policy and National Security	3
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- (4) Under item 3. a. (5) change the credits of 'PLS 422 and PLS 481' from '4' to '3'.

Effective Fall 2024.

23. Change the requirements for the **Bachelor of Arts** degree in **Psychology** in the Department of Psychology.

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

- (1) In item 4. a. add the following course:

MTH	116	College Algebra and Trigonometry	5
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Effective Fall 2024.

24. Change the requirements for the **Bachelor of Science** degree in **Psychology** in the Department of Psychology.

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

(1) In item 5. a. add the following courses:

BS	162	Organismal and Population Biology	3
BS	182H	Honors Organismal and Population Biology	3
LB	145	Biology II: Cellular and Molecular Biology	5

Effective Fall 2024.

PART II - NEW COURSES

DEPARTMENT OF ACCOUNTING AND INFORMATION SYSTEMS

- ITM 843 Career Management
Spring of every year. 1(1-0) R: Open to graduate students in the Business Data Science and Analytics Major or approval of department.
Career development theory through experiential and skill-based learning--focused on the unique requirements of the Data Science and Analytics industry. Active practice of career management, networking, negotiation, goal setting, and development planning skills.
Offered first half of semester.
Effective Spring Semester 2024
- ITM 887 Analytics Proseminar
Spring of every year. 1(1-0) R: Open to graduate students in the Business Data Science and Analytics Major or approval of department.
External speaker perspectives and/or lectures on topics related to the field of business data science and analytics.
Effective Spring Semester 2025

COLLEGE OF ARTS AND LETTERS

- XA 111 Introduction to Accessibility in Experience Architecture
Fall of every year. 1(1-0) A student may earn a maximum of 3 credits in all enrollments for this course. RB: Completion of Tier I Writing Requirement
Introduction to experience architecture and humanities-focused understanding of accessibility and disability theories and practices. Interdisciplinary introduction to principles and products to improve accessibility. Discussion of the ethics of human and technology interactions for accessibility.
SA: AL 111
Effective Spring Semester 2024
- XA 291 Special Topics
Fall of every year. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. P: (XA 242) and completion of Tier I writing requirement R: Open to students in the Experience Architecture Major.
Researching and designing special topics in Experience Architecture. Topics vary.
Effective Spring Semester 2024
- XA 491 Special Topics
Fall of every year. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. P: (XA 242) and completion of Tier I writing requirement R: Open to undergraduate students in the Experience Architecture Major and open to graduate students.
Researching and designing advanced special topics in Experience Architecture. Topics vary.
Effective Fall Semester 2024

DEPARTMENT OF BIOSYSTEMS AND AGRICULTURAL ENGINEERING

- BE 475 International Studies in Biosystems Engineering
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of department; application required.
- REINSTATEMENT Study abroad emphasizing biosystems and agricultural engineering issues affecting food, energy, environment, and health in world, national, and local communities.
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 2024

DEPARTMENT OF COMMUNICATION

- COM 903 Advanced Research Methods in Communication
Fall of every year. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P: COM 901 and COM 902 or approval of department RB: COM 801 and COM 802 R: Open to doctoral students.
Advanced communication methods including but not limited to computational communication, network analysis, and communication neuroscience.
Effective Fall Semester 2024

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

- CSE 801C Introduction to Python Programming
Fall of every year. Spring of every year. 3(2-2) R: Not open to students in the Department of Computer Science and Engineering. Not open to students with credit in CSE 231.
Programming using Python. Design, implementation and testing of programs to solve problems such as those in engineering, mathematics and science. Programming fundamentals, functions, objects, and use of libraries of functions.
Effective Fall Semester 2024

DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES

- GLG 200 Introduction to Environmental Science and Global Change
Fall of every year. Spring 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 Spring Semester 2024
- GLG 203 Geology of the Great Lakes Region
Spring of every year. 3(3-0) P: (PHY 183 or PHY 231 or PHY 193H or PHY 221) and (CEM 141 or CEM 151 or LB 171 or CEM 181H) RB: Physical science, environmental engineering, civil engineering R: Open to undergraduate students in the Department of Civil and Environmental Engineering. Not open to students with credit in GLG 201 or GLG 301.
Geological, physical and chemical processes related to the origin and evolution of the Earth, North American continent, and the Great Lakes environment. Soils, hydrology, Earth structure and materials, geologic hazards.
Effective Fall Semester 2023
- GLG 203L Geology of the Great Lakes Region Laboratory
On Demand. 1(0-2) P: (GLG 203 or concurrently) or (GLG 301 or concurrently) 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 Fall Semester 2023
- GLG 380 Natural Resources, the Energy Transition, and the Environment
Fall of every year. 3(3-0)
Introduction to natural resources in the context of the coming energy transition. Overview of the key concepts, challenges, and opportunities associated with natural resource origin, management, energy transition, and environmental sustainability.
Effective Fall Semester 2024

- GLG 422 Field Methods in 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)
Introduction to field methods in enviro sciences, conceptual design, sample collection, and analysis. Field trips required. Offered first half of semester.
Effective Fall Semester 2024
- 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) 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 2024
- 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) 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 2024
- GLG 828 Biogeochemical Cycles Through Time
Fall of even years. 3(3-0) RB: Introductory chemistry or equivalent
Introduction to chemical tracers for elucidating biogeochemical process on multiple timescales. Overview of modern spatiotemporal biogeochemical gradients, pathways of their geologic preservation, and records of biogeochemical cycles across key events in Earth history.
Effective Fall Semester 2024
- GLG 844 Cosmochemistry
Spring of odd years. 3(2-2) Interdepartmental with Astronomy and Astrophysics RB: Introductory chemistry (CEM 142 or equivalent), introductory physics (PHY 174 or equivalent), calculus 1 (MTH 124 or equivalent), and introductory earth or planetary science (GLG 201 or AST 208 or equivalent) Not open to students with credit in GLG 444.
Chemical composition of the universe, the Sun, the planets, and their building blocks. Origin of the elements, astrophysical sites of nucleosynthesis, and their galactic chemical evolution. Chemically and isotopically trace cosmic genetic relationships, date important events such as formation of the first solids in the Solar System. Processes that segregate elements and isotopes into different astrophysical and planetary reservoirs. Observe primitive and evolved meteoritic and planetary materials in the laboratory.
Effective Spring Semester 2024
- GLG 845 Planetary Sciences
Spring of even years. 3(3-0) RB: Introductory chemistry (CEM 142 or equivalent), introductory physics (PHY 174 or equivalent), calculus 1 (MTH 124 or equivalent), and introductory earth or planetary science (GLG 201 or AST 208 or equivalent) Not open to students with credit in GLG 445.
Surface and internal properties and processes of planets and their natural satellites, asteroids, and comets. Origin, composition, structure, tectonics, volcanism, impact phenomena, atmospheric evolution, atmosphere-surface interactions, habitability, and history of solar system bodies. Results of recent space exploration programs and missions.
Effective Spring Semester 2024

DEPARTMENT OF ECONOMICS

EC 423 Model-Based Data Analytics
Fall of every year. 3(3-0) P: EC 420
Modern statistical learning and predictive modeling, applications and analysis of economic models and data, regression analysis, classification.
Effective Fall Semester 2024

DEPARTMENT OF FISHERIES AND WILDLIFE

FW 102 Succeeding in Fisheries and Wildlife - New Student Seminar
Fall of every year. Spring of every year. 1(1-0) R: Open to undergraduate students in the Department of Fisheries and Wildlife.
Exploration of academic, social, personal and career decisions that students face in college, with a primary focus on succeeding in Fisheries and Wildlife; and the skills needed to be successful.
Request the use of the Pass-No Grade (P-N) system.
Effective Spring Semester 2024

FW 497 Capstone in Fisheries and Wildlife: Conservation and Management Decision Making (W)
Fall of every year. Spring of every year. 3(3-0) P: (FW 334) and (CSUS 354 or FW 410 or FW 416 or FW 417 or FW 424 or FW 444 or FW 479) and Completion of Tier I Writing Requirement R: Open to seniors in the Department of Fisheries and Wildlife and open to seniors in the Lyman Briggs College.
Senior capstone. Emphasis on modes of decision making in natural resources conservation and management, role of models and uncertainty in decision making, and effective communication practices to overcome barriers to decision making.
Effective Fall Semester 2024

DEPARTMENT OF HISTORY

HST 366 Modern Southeast Asia
Spring of even years. 3(3-0)
REINSTATEMENT Southeast Asia from 1500 to the present. Foundations of southeast Asian cultures. Religious revolutions and the rise of absolutist states. Trade and early contacts with the West. Indigenous and European empires. Forms of and responses to colonialism. Nationalist movements and independence.
Effective Fall Semester 2024

SCHOOL OF HUMAN RESOURCES AND LABOR RELATIONS

HRLR 490 Special Topics in Human Resources and Labor Relations
Spring of every year. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P: HRLR 201 or approval of department
Special issues in human resources and labor relations.
Effective Fall Semester 2024

SCHOOL OF JOURNALISM

JRN 429 Social Media News and Information
Fall of every year. 3(3-0) P: Completion of Tier I Writing Requirement R: Open to undergraduate students. Not open to students with credit in JRN 821.
New technologies relevant to journalism. Assessing impact on the field. Use of these technologies in their work.
Effective Fall Semester 2024

MSU COLLEGE OF LAW

- LAW 501P State and Local Taxation
On Demand. 0 to 6 credits. R: Open to students in the MSU College of Law.
State and local taxation in the United States, with special emphasis on constitutional limitations and the mechanics of taxing income, sales, and property.
SA: LAW 572B
Effective Spring Semester 2024
- LAW 534A Media Law
On Demand. 0 to 6 credits. R: Open to Law students in the MSU College of Law.
Introduction to the law that applies to the media as it gathers and disseminates information in a democratic society.
Effective Spring Semester 2024
- LAW 540F Law and the Family in the Digital Age
On Demand. 0 to 6 credits. RB: ((LAW 541E or concurrently) or (LAW 541F or concurrently)) or Prior coursework in Family Law R: Open to students in the MSU College of Law.
Recent changes in society and the increasing use of technology like smart devices, social media, and surveillance technology has changed and shaped family law. Examine how law is responding to these changes or failing to respond and the consequences for one of the foundational institutions of society.
Effective Spring Semester 2024
- LAW 593M Shareholder Democracy
On Demand. 0 to 6 credits. P: LAW 500M or concurrently R: Open to students in the MSU College of Law.
Legal issues related to increasing shareholder engagement in corporate decision-making.
Effective Spring Semester 2024

DEPARTMENT OF MATHEMATICS

- MTH 483 Mathematical Machine Learning
Spring of every year. 3(3-0) P: (MTH 309 or MTH 314 or MTH 317H) and (CSE 231 or CMSE 201)
Regression, clustering, dimension reduction, density estimation, anomaly detection, classification, and related methods (e.g., k-nearest neighbors, support vector machines, neural networks, decision trees, random forests), autoencoders, generative adversarial networks, and existing machine learning tools, training methods, and software.
Effective Fall Semester 2024
- MTH 929 Complex Analysis II
Spring of even years. 3(3-0) RB: MTH 828 and MTH 829 R: Open to doctoral students in the College of Natural Science or approval of department.
- REINSTATEMENT Continuation of MTH 829. Topics include Phragmen-Lindelof method, Analytic continuation and Riemann surfaces, Hadamard's theorem, Runge's theorem, Weierstrass factorization theorem, Mittag-Leffler theorem, Picard's theorem, Hp-spaces, Blaschke products.
Effective Spring Semester 2024
- MTH 989 Representation Theory II
Spring of even years. 3(3-0) P: MTH 988 or approval of department
- REINSTATEMENT Basic objects and notions of representation theory: associative algebras, algebras defined by generators and relations, group algebras, quivers and path algebras, basic general results of representation theory, representations of finite dimensional algebras and semi simple algebras, extensions of representations, representations of quivers.
Effective Spring Semester 2024

COLLEGE OF NURSING

- NUR 914 Biostatistics for the APRN
Fall of every year. Spring of every year. 3(3-0)
The application of descriptive statistics, bivariable and multivariable inferential statistics (parametric and non-parametric), and essential epidemiological concepts
Effective Fall Semester 2024

COLLEGE OF OSTEOPATHIC MEDICINE

- OST 595 Modern Applications of Osteopathic Science
Fall of every year. Spring of every year. 1(1-0) A student may earn a maximum of 6 credits in all enrollments for this course. R: Open to osteopathic medicine students in the College of Osteopathic Medicine.
Aspects of Osteopathic care that focuses specifically on mechanisms of self-healing in the physical, emotional, mental, and spiritual realms of health.
Request the use of the Pass-No Grade (P-N) system.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 1 semester after the end of the semester of enrollment.
Effective Spring Semester 2024

DEPARTMENT OF PHILOSOPHY

- PHL 482 Topics in Ethics in Science
Spring of every year. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. RB: Completion of one IAH course or one philosophy course
Ethical issues in scientific research. Topics such as human subject research, the use of animals in research, dangerous research, community-based research.
Effective Fall Semester 2024

DEPARTMENT OF PSYCHOLOGY

- PSY 399 Psychology Service and Engagement
On Demand. 1 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: PSY 101 or approval of department R: Approval of department.
Preparation and participation in service that supports domestic or international community needs. Reflection and application of psychological theory and research.
Effective Fall Semester 2024

DEPARTMENT OF PUBLIC HEALTH (CS MOTT)

- PH 102 Social Justice and Determinants of Health: United States
Fall of every year. Spring of every year. Summer of every year. 3(3-0) RB: PH 101
Introduction to the role of social justice in public health, and the determinants of health, specifically the socio-economic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities.
Effective Spring Semester 2024
- PH 103 Social Justice and Health Equity: Global Perspectives
Fall of every year. Spring of every year. Summer of every year. 3(3-0) RB: PH 101 and PH 102
Exploration of critical transnational challenges in global public health such as food insecurity, the refugee and migrant crisis, slums and the global housing crisis, population growth, complex humanitarian emergencies, global mental health, interpersonal violence, among others. Topics will be considered from a social justice and health equity perspective, including the influence of social, economic, political and environmental systems on global health outcomes.
Effective Fall Semester 2024

DEPARTMENT OF RELIGIOUS STUDIES

- REL 108 Black Religious Worlds
Fall of even years. 3(3-0)
Survey of Black religious expressions, beliefs, and communities, including, African traditional religions, Slave Religion, Black Christianity, Conjure, Hoodoo, Vodou, Islam, and Catholicism.
Effective Fall Semester 2024
- REL 411 Modern Jewish Thought (W)
Spring of even years. 3(3-0) P: Completion of Tier I Writing Requirement R: Not open to freshmen or sophomores.
- REINSTATEMENT Representative Jewish thought from the Enlightenment to the present.
Effective Fall Semester 2024

DEPARTMENT OF TEACHER EDUCATION

- TE 903 Social Justice Teacher Education: Pedagogy, Theory, and Practice
Fall of every year. 3(3-0) P: TE 901 and TE 902 R: Open to doctoral students.
Multiple epistemological, ontological, and pedagogical perspectives of a pedagogy of social justice teacher education; rationale for and design of courses, programs and other experiences for prospective and practicing teachers to develop practices that foster equity and justice; examining the politics of teaching and learning as a teacher educator.
Effective Fall Semester 2024

DEPARTMENT OF WRITING, RHETORIC, AND CULTURES

- WRA 308 Invention in Writing
Fall of odd years. 3(3-0) P: (WRA 202 or concurrently) or (WRA 260 or concurrently) R: Open to students in the Professional and Public Writing Major or approval of department.
- REINSTATEMENT Theory and practice of invention and creative practices in professional and public writing. Strategies and theories for brainstorming, ideating, and innovating in civic and professional writing contexts. Orientation toward wide range of knowledges and approaches to knowledge-making and writing.
SA: AL 308
Effective Spring Semester 2024

PART III – COURSE CHANGES

COLLEGE OF ARTS AND LETTERS

- AL 111 Introduction to Accessibility in the Humanities
Fall of every year. 1(1-0)
Introduction to humanities-focused understanding of accessibility and disability theories and practices. Interdisciplinary introduction to principles and products to improve accessibility. Discussion of the ethics of human and technology interactions for accessibility.
DELETE COURSE
Effective Fall Semester 2024

BIOLOGICAL SCIENCE PROGRAM

- BS 182H Honors Organismal and Population Biology
Fall of every year. 3(3-0) ~~Interdepartmental with Plant Biology, Plant Biology~~ Not open to students with credit in LB 144.
Diversity and basic properties of organisms, with emphasis on genetic principles, ecological interactions, and the evolutionary process. Historical approach to knowledge discovery.
SA: BS 148H, BS 110
Effective Summer Semester 2024
- BS 192H Honors Organismal and Population Biology Laboratory
Fall of every year. 2(1-3) ~~Interdepartmental with Plant Biology, Plant Biology~~ P: BS 182H or concurrently Not open to students with credit in LB 144.
Nature and process of organismal biology, including experimental design and statistical methods, hypothesis testing, genetics, ecology, and evolution.
SA: BS 158H, BS 110
Effective Summer Semester 2024

THE ELI BROAD COLLEGE OF BUSINESS

- BUS 491 Special Topics in Business
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. ~~R: Open to juniors or seniors in the Eli Broad College of Business and The Eli Broad Graduate School of Management and not open to students in the School of Hospitality Business.~~ R: Open to undergraduate students in the Accounting major or in the Business - Admitted major or in the Finance Major or in the Human Resource Management Major or in the Management Major or in the Marketing Major or in the Supply Chain Management Major or approval of college.
Advanced study of interrelatedness of business functions not typically found in the business academic departments.
Effective Fall Semester 2024
- MBA 845 Integrative Action Projects
Fall of every year. Spring of every year. ~~1 to 2 credits.~~ 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open to MBA students.
Multi-day intensive action-based learning experience in which students apply business theories and concepts to real business issues.
Effective Fall Semester 2023

DEPARTMENT OF CHEMICAL ENGINEERING AND MATERIALS SCIENCE

- CHE 433 Process Design and Optimization I
Fall of every year. ~~4(5-0)~~ 4(4-0) P: (CHE 311 and CHE 312 and CHE 321 and CHE 431) and completion of Tier I writing requirement R: Open to seniors in the Chemical Engineering Major. Applications of chemical engineering principles in design calculations. Selection of optimum design. Influence of design on capital investment, operating cost, product loss and quality. Mathematical programming methods for optimization.
Effective Fall Semester 2024

DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES

- GLG 201 ~~The Dynamic Earth~~ Introduction to Earth and Planetary Sciences
Fall of every year. Spring of every year. 4(3-2) Not open to students with credit in GLG 301. ~~Physical and chemical processes related to the past, present and future behavior of the earth system, and the energy systems that drive these processes. A study of the earth's materials, the earth's surface and the earth's interior. Physical and chemical processes related to the past, present, and future behavior of Earth systems, and the energy systems that drive them. Earth and planetary materials, interior and surface processes, and associated natural resources and hazards.~~
Effective Fall Semester 2024
- GLG 401 Global Tectonics and Earth Structure (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) 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) R: Open to seniors or graduate students.~~
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.
SA: GLG 371
Effective Summer Semester 2024
- GLG 412 Glacial Geology and the Record of Climate Change
Spring of every year. 4(3-2) ~~Interdepartmental with Geography~~ 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.
Effective Summer Semester 2024

DEPARTMENT OF ECONOMICS

- EC 425 Law and Economics (W)
Fall of every year. 3(3-0) ~~Interdepartmental with Finance~~ P: (EC 251H or EC 301) and Completion of Tier I Writing Requirement
Application of economic analysis to the law. Property rights, takings, the Coase Theorem. The economics of regulation, crime and punishments, liability law, and public choice.
Effective Fall Semester 2024

DEPARTMENT OF EPIDEMIOLOGY AND BIostatISTICS

- EPI 812 ~~Causal Inference in Epidemiology~~ Foundations of Population Health
Fall of every year. 3(3-0) ~~P: EPI 810~~ P: EPI 810 and EPI 829 or approval of department ~~RB: LCS 829~~ R: Open to graduate students in the Department of Epidemiology and Biostatistics or approval of department.
~~Causality in epidemiology. Application of theoretical concepts to the design, analysis, and assessment of epidemiologic research.~~ Fundamentals of population health research including prevention and intervention strategies for improving population health, and the disparities that exist in morbidity, mortality, and quality of life.
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: HM 812
Effective Summer Semester 2024
- EPI 836 Practicum in Epidemiological Methods
Fall of every year. 3(3-0) ~~P: (EPI 812 or concurrently) and (EPI 826 or concurrently)~~ P: EPI 810 and EPI 829 and EPI 851 and EPI 852 R: Open to graduate students in the Department of Epidemiology and Biostatistics or approval of department.
Data management, analysis, interpretation and presentations using public data sets.
Effective Fall Semester 2024

DEPARTMENT OF FINANCE

- FI 250 Careers in Finance
Fall of every year. Spring of every year. 1(1-0) ~~R: Open to sophomores or juniors in the Business - Admitted major or in the Finance Major or approval of department.~~ R: Open to freshmen or sophomores or juniors in the Business - Admitted major and open to freshmen or sophomores or juniors in the Finance Major or approval of department.
Exploration of the various specialty areas within the field of finance, including career options for new college graduates and employment trends. Understanding the minors offered to supplement the major, the student organizations that augment classroom learning, and the professional certifications desired by employers.
Request the use of the Pass-No Grade (P-N) system.
Effective Fall Semester 2024

DEPARTMENT OF FOOD SCIENCE AND HUMAN NUTRITION

- FSC 816 ~~Codex Alimentarius - The Food Code~~ International Food Standards, Codex Alimentarius
Spring of every year. 3(3-0) RB: (FSC 810) or food science, law, food safety, international development or related disciplines. Not open to students with credit in LAW 810F.
How Codex Alimentarius formulates and harmonizes food standards for hygiene, contaminants, food additives, veterinary drugs, and pesticide residues, including its role in the World Trade Organization (WTO) Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT) Agreements.
Effective Summer Semester 2024
- FSC 821 ~~Wine, Beer, and Spirits - Laws and Regulations~~ Beer, Wine, and Spirits - Laws and Regulations
~~Spring of every year.~~ Spring of every year. 3(3-0) RB: (FSC 811) or prior coursework in food safety, food laws, or food science Not open to students with credit in LAW 810Y.
Laws, regulations, and policies that govern alcoholic beverages in the United States.
Effective Summer Semester 2024

DEPARTMENT OF GEOGRAPHY, ENVIRONMENT, AND SPATIAL SCIENCES

- GEO 208 Physical Geography of the National Parks
~~Fall of odd years.~~ On Demand. 2(2-0)
Physical features such as geology, landforms, biota, and waters of United States and Canadian national parks, forests, seashores and lakeshores. Emphasis on formation and distribution.
Effective Fall Semester 2024
- GEO 211 Environmental Policy and Practice
~~Fall of every year.~~ Spring of every year. 3(3-0)
Systematic study of environmental policy and resource management practices in the United States and the broader global context, emphasizing geographical and other social sciences perspectives.
Effective Fall Semester 2024
- GEO 286 Undergraduate Research in Geography
~~Fall of even years.~~ On Demand. 3(3-0)
Supervised research on a topic or topics determined by the instructor. Applications of geographic tools and theory.
Effective Fall Semester 2024
- GEO 414 ~~Geography of Transportation~~ Transportation Systems and Sustainable Cities
~~Fall of odd years.~~ Spring of odd years. 3(3-0) ~~Interdepartmental with Urban Planning, Urban Planning~~ Interdepartmental with Civil Engineering, Supply Chain Management, Urban Planning, Urban Planning P: GEO 113 RB: GEO 113
Spatial principles of transportation. Theories of interaction, network structures, and location-allocation models. Role of transport and transport planning.
Effective Fall Semester 2024
- GEO 415 Location Theory and Land Use Analysis
Fall of even years. 3(3-0) ~~Interdepartmental with Urban Planning, Urban Planning P: GEO 113 or UP 201 RB: EC 201 or EC 202~~
Classical and neoclassical, static and dynamic models of industrial location and spatial organization. Land rent theory. Central place theory. Multi-locational organization. Growth transmission.
DELETE COURSE
Effective Fall Semester 2024

DEPARTMENT OF HISTORY

- HST 418 ~~History and Art through Technology~~ History and Art through Technology (W)
Fall of every year. 3(3-0) ~~Interdepartmental with History of Art P: (HST 201 or HST 251 or HA 101 or HA 210) and completion of Tier I writing requirement~~ P: Completion of Tier I Writing Requirement R: Not open to freshmen.
Approaches in History and Art History to visual, material, textual, and other historical sources using digital technologies to explore a particular region, time period, or thematic topic.
Effective Fall Semester 2024

DEPARTMENT OF HUMAN DEVELOPMENT AND FAMILY STUDIES

- HDFS 138 Introduction to Financial Literacy
Fall of every year. 2(1-0) R: Open to freshmen or sophomores. Not open to students with credit in HDFS 238.
Design, develop, and integrate a comprehensive plan to achieve financial goals. Topics will have an immediate impact on everyday life to achieve financial freedom and success.
Effective Fall Semester 2024

HDFS 812 ~~Adolescence in the Family: Ecological Perspectives~~
Adolescence and Emerging Adulthood in Ecological Context
Spring of even years. 3(3-0)
Ecological factors that influence family functioning and adolescent outcomes.
SA: FCE 812
Effective Fall Semester 2024

HDFS 847 Theories of the Family
Spring of every year. 3(3-0) RB: HDFS 845
Perspectives on the family. Relationships of theory, research, and practice.
SA: FCE 847
DELETE COURSE
Effective Fall Semester 2024

SCHOOL OF HUMAN RESOURCES AND LABOR RELATIONS

HRLR 201 ~~Human Capital and Society~~ Human Capital, Human Resources, and Labor Relations
Fall of every year. Spring of every year. Summer of every year. 3(3-0)
Human capital and society from cultural, organizational, and worker perspectives.
Interdisciplinary and professional aspects of human resources and labor relations.
Effective Fall Semester 2024

HRLR 315 Research Methods and Analysis
Fall of every year. Spring of every year. 3(3-0) P: STT 200 or STT 201
~~Social science research methodology and analysis techniques as applied to human capital issues.~~ Social science research methodology and analysis techniques as applied to human resources and labor relations issues.
Effective Fall Semester 2024

HRLR 316 ~~Economics of Human Capital~~ Economics of Human Capital and Human Resources
Fall of every year. 3(3-0) P: EC 201
~~Economic and strategic aspects of human capital analysis and development in organizations.~~ Foundational economic concepts related to the labor market, individuals' human capital investment decisions, and organization-level human resource considerations.
Effective Fall Semester 2024

HRLR 420 ~~Comparative Human Capital Systems~~
Comparative Human Resources and Labor Relations Systems
Fall of every year. 3(3-0) P: HRLR 313 and (HRLR 201 or concurrently)
Institutional networks and practices in human capital systems in selected countries. Labor and employment laws, employment relations, and human resources practices.
Effective Fall Semester 2024

HRLR 465 ~~Capstone in Human Capital and Society~~ Capstone in Human Resources and Labor Relations
Fall of every year. Spring of every year. 3(3-0) P: (HRLR 201 and HRLR 315 and HRLR 313 and HRLR 314 and (HRLR 410 or concurrently)) and completion of Tier I writing requirement
Comparative and international employment relations. Contemporary labor market trends and issues. High performance work systems and organizational effectiveness. Diverse stakeholders and worker outcomes.
Effective Fall Semester 2024

HRLR 493 ~~Internship in Human Capital and Society~~ Internship in Human Resources and Labor Relations
Fall of every year. Spring of every year. Summer of every year. 3 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. RB: HRLR 201 R: Open to undergraduate students in the College of Social Science or approval of school. Not open to students with credit in SSC 493.
Faculty-guided internship in field related to human capital & society
Request the use of the Pass-No Grade (P-N) system.
Effective Fall Semester 2024

- HRLR 494 ~~Undergraduate Research in Human Capital and Society~~
Undergraduate Research in Human Resources and Labor Relations
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. A student may earn a maximum of 8 credits in all enrollments for this course. P: HRLR 201 and (HRLR 315 or concurrently) R: Open to undergraduate students in the College of Social Science or approval of school. Not open to students with credit in SSC 494.
~~Faculty-guided undergraduate research in disciplines encompassed in human capital and society.~~
Faculty-guided undergraduate research in disciplines encompassed in human resources and labor relations.
Effective Fall Semester 2024

DEPARTMENT OF MANAGEMENT

- MGT 817 Managing the Learning Organization
Fall of every year. Spring of every year. Summer of every year. 1 to 3 credits. ~~P: MGT 810 or concurrently~~ R: Open to master's students in the Eli Broad College of Business and The Eli Broad Graduate School of Management.
~~Assessing knowledge, skills, and abilities within the organization. Matching future employee skill needs with appropriate learning strategies. Linking employee knowledge, skills, and abilities with overall organizational strategies. Exploration of processes by which individuals, teams, and organizations acquire new knowledge, skills, and understanding. Focuses on the role of management and leadership in facilitating learning, generating new ideas, and connecting the learning process to strategic initiatives.~~
Assessing knowledge, skills, and abilities within the organization. Matching future employee skill needs with appropriate learning strategies. Linking employee knowledge, skills, and abilities with overall organizational strategies. Exploration of processes by which individuals, teams, and organizations acquire new knowledge, skills, and understanding. Focuses on the role of management and leadership in facilitating learning, generating new ideas, and connecting the learning process to strategic initiatives.
Effective Fall Semester 2024

DEPARTMENT OF MARKETING

- IBUS 211 Business and Culture Seminar
Fall of every year. Spring of every year. Summer of every year. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. ~~R: Open to undergraduate students in the Accounting major or in the Finance Major or in the Hospitality Business Major or in the Human Resource Management Major or in the Management Major or in the Supply Chain Management Major or in the Business—Admitted major or in the Business Preference major or in the Marketing Major or approval of college.~~ R: Open to undergraduate students or approval of college.
International speaker series providing an overview of the business and cultural environment in a particular world region.
SA: MKT 211
Effective Spring Semester 2024
- IBUS 292 Special Topics In Business Abroad
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. ~~R: Open to undergraduate students in the The Eli Broad College of Business or in the Accounting major or in the Business—Admitted major or in the Business Preference major or in the Finance Major or in the Hospitality Business Major or in the Human Resource Management Major or in the Management Major or in the Marketing Major or in the Supply Chain Management Major or approval of college.~~ R: Open to undergraduate students in the The Eli Broad College of Business or approval of college.
Education abroad emphasizing an introduction to the functional fields in business abroad and their interrelationships. Review of fundamental concepts and principles of business abroad.
SA: BUS 292
Effective Spring Semester 2024

IBUS 310 International Business
Fall of every year. Spring of every year. Summer of every year. 3(3-0) R: Open to juniors or seniors in the Accounting major or in the Business - Admitted major or in the Finance Major or in the Hospitality Business Major or in the Human Resource Management Major or in the Management Major or in the Supply Chain Management Major or in the Marketing Major or in the Applied Engineering Sciences Major.
International and cross-cultural study of business decisions, enterprises, markets, and institutions. Globalization of industries and firm competitiveness. International business transactions and entry strategies.
~~SA: MSC 310, MKT 310~~ SA: MKT 310, MSC 310
Effective Spring Semester 2024

IBUS 394 Business Service Learning Abroad
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. ~~R: Open to undergraduate students in the The Eli Broad College of Business or in the Accounting major or in the Business—Admitted major or in the Business Preference major or in the Finance Major or in the Hospitality Business Major or in the Human Resource Management Major or in the Management Major or in the Marketing Major or in the Supply Chain Management Major or approval of college.~~ R: Open to undergraduate students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or approval of college.
Civil engagement practices and theories. Impact of non-profit organizations, practices of engaged citizenship. Volunteer placements at civic organizations.
SA: BUS 393
Effective Spring Semester 2024

IBUS 492 Advanced Topics Abroad
Fall of every year. Spring of every year. Summer of every year. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. ~~R: Open to undergraduate students in the The Eli Broad College of Business or in the Accounting major or in the Finance Major or in the Hospitality Business Major or in the Human Resource Management Major or in the Management Major or in the Marketing Major or in the Supply Chain Management Major or approval of college.~~ R: Open to undergraduate students in the Eli Broad College of Business and The Eli Broad Graduate School of Management or approval of college.
Education abroad emphasizing an advanced study of interrelatedness of business functions abroad not typically found in business academic departments.
SA: BUS 492
Effective Spring Semester 2024

DEPARTMENT OF MATHEMATICS

MTH 396 Capstone in Mathematics for Secondary Education (W)
~~Spring of every year. Fall of every year.~~ 3(3-0) ~~P: (MTH 309 or MTH 317H or approval of department) and (MTH 310 or MTH 418H or approval of department) and (MTH 320 or MTH 327H or approval of department) and Completion of Tier I Writing Requirement P: (MTH 309 or MTH 317H or approval of department) and (MTH 310 or MTH 418H or approval of department) and (MTH 320 or MTH 327H) and Completion of Tier I Writing Requirement~~ R: Approval of department. R: Open to students in the Mathematics-Secondary Education Major. Not open to students with credit in MTH 496.
A capstone course for secondary education math majors. High school mathematics from an advanced viewpoint.
Effective Fall Semester 2024

COLLEGE OF OSTEOPATHIC MEDICINE

OST 582 ~~Transitions I: Board Preparation~~ Preclerkship Board Preparation
~~Summer of every year. Spring of every year.~~ 6 credits. 4(4-0) R: Open to graduate-professional students in the College of Osteopathic Medicine.
Selected topics in preparation for licensure board exams.
Request the use of the Pass-No Grade (P-N) system.
Effective Spring Semester 2024

- OST 591 ~~Medical Case Study Journal Review~~ Medical Case Studies
Fall of every year. Spring of every year. Summer of every year. 1(2-0) A student may earn a maximum of 4 credits in all enrollments for this course. R: Open to graduate-professional students in the College of Osteopathic Medicine.
Analysis and presentation of published clinical case reports in the context of basic science principles and biomedical concepts.
Request the use of the Pass-No Grade (P-N) system.
Effective Summer Semester 2024
- OST 597 Biomedical Research Structure and Methods
Spring of every year. 2(2-0)~~P: OST 598~~ P: OST 598 or OST 520
Intensive review of biomedical research methods and statistical analyses for mentored clinical research projects.
Request the use of the Pass-No Grade (P-N) system.
Effective Summer Semester 2024

DEPARTMENT OF PLANT BIOLOGY

- PLB 499 Senior Seminar (W)
Spring of every year. 1(1-0)~~P: (PLB 498) and completion of Tier I writing requirement~~ P: (PLB 498 or PLB 495) and completion of Tier I writing requirement
A capstone experience that focuses on current developments and issues in plant biology.
Scientific writing and oral presentation.
SA: BOT 499
Effective Summer Semester 2024

DEPARTMENT OF POLITICAL SCIENCE

- PLS 200 Introduction to Political Science
Fall of every year. Summer of every year. ~~4(4-0)~~ 3(3-0)
~~The science of politics. Theory construction, model building, empirical testing, and inductive inference. Examples from American, international and comparative politics.~~ The scientific study of politics. Examples from American, international, and comparative politics subfields.
Effective Fall Semester 2024
- PLS 201 Introduction to Methods of Political Analysis
Fall of every year. Spring of every year. Summer of every year. ~~4(4-0)~~ 3(3-0)
Philosophy of social science. Principles of research design, measurement, hypothesis testing, measures of association, cross tabulations, and regression analysis.
Effective Fall Semester 2024
- PLS 364 Politics of the United Nations and International Organizations
Spring of every year. 3(3-0)~~Not open to students with credit in MC 322.~~
History and evolution. League of Nations, United Nations. Growth and role of regional, specialized, and non-governmental organizations. Impact of new states. Politics, functions, and problems.
Effective Fall Semester 2024
- PLS 422 Seminar in Political Science (W)
Fall of every year. Spring of every year. ~~4(4-0)~~ 3(3-0) ~~A student may earn a maximum of 12 credits in all enrollments for this course.~~ A student may earn a maximum of 9 credits in all enrollments for this course. P: (PLS 201) and completion of Tier I writing requirement RB: Political Science major or student with background in political science or international studies.
Variable topics including legislative behavior, policy analysis, political development, human rights, international conflict, foreign policy, international political economy, and constitutionalism.
Effective Fall Semester 2024

PLS 481 Undergraduate Research Seminar (W)
Fall of every year. Spring of every year. ~~4(4-0)~~ 3(3-0) ~~A student may earn a maximum of 8 credits in all enrollments for this course. A student may earn a maximum of 6 credits in all enrollments for this course.~~ P: (PLS 201 or concurrently) and completion of Tier I writing requirement RB: Political Science major or student with background in political science or international studies.
Advanced research seminar for students in the political science program.
Effective Fall Semester 2024

DEPARTMENT OF PSYCHOLOGY

PSY 280 ~~Abnormal Psychology~~ Psychological Disorders
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: PSY 101
Theory and research on dynamics, characteristics, and treatment of psychological disorders. Therapies and theories of prevention.
Effective Fall Semester 2024

PSY 382 Internship in Psychology
~~Summer of every year.~~ On Demand. 3 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: PSY 101 R: Approval of department; application required.
Internship employing knowledge and skills acquired in psychology courses.
Request the use of the Pass-No Grade (P-N) system.
Effective Fall Semester 2024

PSY 401 Expertise and Skill (W)
Fall of every year. 3(3-0) ~~P: PSY 200 and ((PSY 295 or STT 231) and completion of Tier I writing requirement)~~ P: (PSY 200) and ((PSY 295 or STT 231) and completion of Tier I writing requirement) R: Open to juniors or seniors in the Department of Psychology or in the Cognitive Science Minor.
Contemporary models of expertise and skill acquisition and the role of basic cognitive abilities and capacities in complex performance.
Effective Fall Semester 2024

PSY 409 Psychobiology of Behavioral Development (W)
Spring of every year. 3(3-0) P: (PSY 209 or NEU 300 or IBIO 405) and ((PSY 295 or STT 231) and completion of Tier I writing requirement) R: Open to juniors or seniors in the Department of Psychology or in the Lyman Briggs Neuroscience Coordinate Major or in the Neuroscience Major.
Biological approaches to the understanding of behavioral development in human and non-human animals. Role of the nervous system in this process.
Effective Fall Semester 2024

PSY 410 Neuroscience of Learning and Memory (W)
Fall of every year. 3(3-0) P: (PSY 200 or PSY 209 or PSY 301 or NEU 300 or IBIO 405) and ((PSY 295 or STT 231) and completion of Tier I writing requirement) R: Open to juniors or seniors in the Department of Psychology or in the Cognitive Science Minor or in the Lyman Briggs Neuroscience Coordinate Major or in the Neuroscience Major.
Neural mechanisms responsible for learning and memory.
SA: PSY 308
Effective Fall Semester 2024

PSY 411 Hormones and Behavior (W)
Spring of every year. 3(3-0) P: (PSY 209 or NEU 300 or IBIO 405) and ((PSY 295 or STT 231) and completion of Tier I writing requirement) R: Open to juniors or seniors in the Department of Psychology or in the Lyman Briggs Neuroscience Coordinate Major or in the Neuroscience Major.
Current research on biological mechanisms that control motivation in humans and non-human species.
Effective Fall Semester 2024

- PSY 413 Laboratory in Behavioral Neuroscience (W)
Fall of every year. 4(2-4) Interdepartmental with Integrative Biology P: (PSY 209) and ((PSY 295 or STT 231) and completion of Tier I writing requirement) ~~R: Open to juniors or seniors in the Department of Psychology or in the Cognitive Science Minor or in the Integrative Biology major or in the Lyman Briggs Neuroscience Coordinate Major or in the Neuroscience Major.~~
Theory and laboratory experience in the study of behavioral neuroscience. Relationship among hormones, brain, and behavior.
SA: PSY 309
Effective Fall Semester 2024
- PSY 424 Child and Family Psychopathology (W)
Fall of every year. Spring of every year. Summer of every year. 3(3-0) P: (PSY 295) and completion of Tier I writing requirement ~~R: Open to juniors or seniors in the Department of Psychology.~~ R: Open to juniors or seniors in the Department of Psychology or in the Psychology Disciplinary Teaching Minor.
Description, etiology, and developmental patterns of behavior problems of children, adolescents, and their families. Child and family interventions.
Effective Fall Semester 2024
- PSY 444 Developmental Psychology: Adolescence Through Youth (W)
Fall of every year. 3(3-0) ~~P: (PSY 101 and PSY 244 and PSY 295) and completion of Tier I writing requirement~~ P: ((PSY 101 and PSY 295) and completion of Tier I writing requirement) and (PSY 238 or PSY 244 or HDF5 225) ~~R: Open to juniors or seniors in the Department of Psychology or in the Youth and Society Minor or in the Psychology Disciplinary Teaching Minor.~~
Theory and research in physical, cognitive, emotional, and social development from puberty to early adulthood.
SA: PSY 344
Effective Fall Semester 2024
- PSY 455 Advanced Topics in Organizational Psychology (W)
Fall of every year. 3(3-0) P: (PSY 255 and PSY 295) and completion of Tier I writing requirement ~~R: Open to juniors or seniors in the Department of Psychology or in the Bachelor of Arts in Interdisciplinary Studies in Social Science Major or in the Bachelor of Science in Interdisciplinary Studies in Social Science Major.~~ R: Open to juniors or seniors in the Department of Psychology.
Applied research related to human resource issues in work organizations. Selection, training, motivation, leadership, and organizational change.
Effective Fall Semester 2024
- PSY 493 Issues in Psychology (W)
Fall of every year. Spring of every year. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. ~~P: PSY 101 and ((PSY 295 or STT 231) and completion of Tier I writing requirement)~~ P: (PSY 101) and ((PSY 295 or STT 231) and completion of Tier I writing requirement) ~~R: Open to juniors or seniors in the Department of Psychology.~~
Current information, research, and practice in psychology.
Effective Fall Semester 2024

DEPARTMENT OF PUBLIC HEALTH (CS MOTT)

- PH 825 Transition to Graduate Academic Writing
Fall of every year. Spring of every year. Summer of every year. 1(1-0) RB: completion of Tier 2 writing assignment or undergraduate degree R: Open to students in the Public Health Major and open to juniors or seniors or graduate students or approval of college.
Identify and analyze scholarly articles and published research studies to develop effective writing skills within the genre of academic writing and scholarship.
~~Request the use of the Pass No Grade (P-N) system.~~
SA: HM 825
Effective Summer Semester 2024

DEPARTMENT OF RADIOLOGY

- ANTR 350 Human Gross Anatomy for Pre-Health Professionals
Fall of every year. Spring of every year. Summer of every year. ~~3(4-0)~~ 4(4-0) P: BS 161 or BS 181H or LB 145 R: Not open to freshmen or approval of department.
Survey of human systemic gross anatomy with clinical illustrations. Structural basis of organ system physiology. Introduction to medical terminology and clinical language.
Effective Fall Semester 2024
- ANTR 355L Human Gross Anatomy Laboratory
Fall of every year. Spring of every year. Summer of every year. ~~4(0-3)~~ 2(0-4) P: ANTR 350 or concurrently ~~R: Approval of department.~~ R: Not open to freshmen. Approval of department; application required. Not open to students with credit in KIN 217.
Introductory, structured laboratory survey of human regional gross anatomy using prosections, medical imaging, and multimedia for students in allied medical fields. Correct usage and pronunciation of medical terminology.
SA: ANTR 381
Effective Summer Semester 2024
- ANTR 485 Directed Study in Human Prosection
Fall of every year. Spring of every year. Summer of every year. ~~2(0-6)~~ 3(0-6) ~~A student may earn a maximum of 14 credits in all enrollments for this course. A student may earn a maximum of 12 credits in all enrollments for this course.~~ P: ANTR 350 or IBIO 328 or KIN 217 or IBIO 320 ~~R: Open to juniors or seniors. Approval of department.~~ R: Open to juniors or seniors. Approval of department; application required.
Prosection of selected regions and isolated structures of preserved human cadavers.
Effective Summer Semester 2024
- ANTR 585 Directed Study in Human Prosection
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. ~~P: ANTR 551 or ANTR 540~~ P: ANTR 510 or OST 510 R: Open to human medicine students or osteopathic medicine students. Approval of department.
Prosection of selected regions and isolated structures of preserved human cadavers. Oral presentation.
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 2024
- ANTR 590 Independent Study in Clinical Human Morphology
Fall of every year. Spring of every year. Summer of every year. 1 to 5 credits. A student may earn a maximum of 10 credits in all enrollments for this course. P: OST 510 or ANTR 510 RB: Admission to the College of Human Medicine or the College of Osteopathic Medicine or graduate program in the College of Nursing R: Open to human medicine students and open to osteopathic medicine students and open to graduate students in the College of Nursing. Approval of department.
Independent study of a specific topic from gross anatomy, histology, radiological anatomy, cytology, neuroscience, or embryology.
Request the use of the Pass-No Grade (P-N) system.
Request the use of ET-Extension to postpone grading.
The work for the course must be completed and the final grade reported within 1 semester after the end of the semester of enrollment.
Effective Summer Semester 2024
- ANTR 880 Advanced Human Gross Anatomy for Education or Research
~~Fall of every year.~~ Spring of odd years. ~~5(4-1)~~ 5(3-4) R: Approval of department.
Human gross anatomy using prosections, medical imaging, and multimedia resources.
Effective Spring Semester 2025

DEPARTMENT OF ROMANCE AND CLASSICAL STUDIES

- ITL 250 Topics in Italian Cultures for English Speakers
~~Summer of every year. Fall of every year. Spring of even years. Summer of every year.~~ 3(3-0) A student may earn a maximum of 3 credits in all enrollments for this course. ~~P: Completion of Tier I Writing Requirement~~
Analyze diverse forms of culture from Italy and from other countries where Italian is spoken. Read and discuss written and audiovisual materials such as Italian newspapers, films, and TV, among others. Course is conducted in English, but some primary materials are in Italian. Basic introduction in Italian to understand primary materials.
Effective Spring Semester 2024
- LTN 499 Senior Thesis
Fall of every year. Spring of every year. 1(1-0) A student may earn a maximum of 2 credits in all enrollments for this course. P: (LTN 206 or concurrently) or (LTN 208 or concurrently) or (LTN 211 or concurrently) or (LTN 221 or concurrently) or approval of department R: Approval of department. C: LTN 406 concurrently or LTN 408 concurrently or LTN 421 concurrently
Senior thesis capstone under the direction of a faculty member.
Effective Fall Semester 2024
- SPN 440 The Structure of Spanish
Fall of every year. Spring of every year. 3(3-0) ~~P: SPN 330 and (LIN 200 or LIN 401 or ENG 302)~~ P: SPN 330 and LIN 401
Overview of linguistic approaches to understanding the Spanish language.
Effective Fall Semester 2024

SCHOOL OF SOCIAL WORK

- SW 873 Social Work in Educational Settings
~~Fall of every year. Summer of every year. Fall of every year. Summer of every year.~~ 3(3-0) RB: Training and/or experience working with children, families and schools. Enrolled in or have graduated from an accredited MSW program. ~~R: Open only to graduate students in the School of Social Work or approval of School. R: Open to graduate students in the School of Social Work or approval of school.~~
Roles and functions of social workers within a complex ecological system of home, school, and community. Impact of societal laws and values on the school and on the students' schooling experience. Implications for social work practice involving prevention and intervention with a variety of client systems. Social work practice in educational settings. Overview of theoretical foundation and policy context, educational mandates for students with disabilities, foundations for multi-tiered interventions and evidence-informed practice. Needs of students, families, teachers, administrators, and the larger school community. Challenges/opportunities facing diverse client groups. Social justice, diversity and inequality, human rights. Roles/opportunities of interdisciplinary leadership, collaboration, advocacy.
Effective Spring Semester 2024

DEPARTMENT OF TEACHER EDUCATION

- TE 963 Critical Race Theory in Education
~~Spring of even years.~~ Spring of every year. 3(3-0) R: Open to doctoral students.
Critical race theory as an analytical framework that provides race epistemology, methodological, and pedagogical approaches to study everyday inequalities in P-20 education.
Effective Fall Semester 2024