

ACADEMIC SENATE PROPOSAL TRACKING SHEET

(Document To Be Originated By the Academic Senate Secretary On Canary Color Paper)

Proposal # 21-16	Title: Applied Equine Management Minor
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(Proposal explanation, submitter and college dean signatures on attached program/degree or course revision form.)

All proposals **MUST** have their originating college faculty body (Ex. Arts & Sciences, Education and Nursing; Technical Sciences) approval and must be signed by the submitter and the college dean before being submitted to the Academic Senate Secretary.

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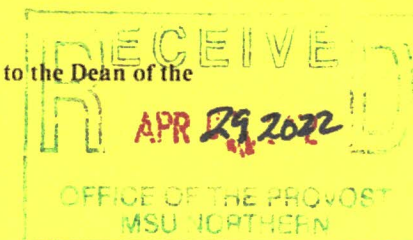
1. Submit all proposals (using the appropriate Academic Senate program/degree and/or course revision forms or General Education Inclusion form) to the Academic Senate Secretary. **NOTE: Level 1 or Level 2 forms must be submitted concurrent with this proposal where applicable. For Education proposals, PEU approval must be received prior to forwarding the proposal to the Senate.**
2. The Academic Senate Secretary logs and numbers items and forwards them to the appropriate Academic Senate subcommittee(s): General Education (if applicable), or Curriculum. A transmittal e-mail will be sent to the Recording Secretary of the receiving committee, cc Provost's Administrative Assistant, by the Academic Senate Secretary. A digital copy of the proposal will be linked on the Academic Senate Proposal page by the Academic Senate Secretary.
3. The Academic Senate subcommittee(s) consider(s) the proposal. If approved, the proposal is returned to the Academic Senate Secretary for forwarding to the next committee. If a committee disapproves the proposal, the originator may request that the item be forwarded to the next body for consideration. The committee will provide written rationale to the originator, via the Academic Senate, when a proposal is disapproved and the proposal is returned to the originator. Upon completion of committee action, the proposal will be returned to the Academic Senate Secretary, and a transmittal e-mail sent by the Committee Recorder to the Senate Secretary, cc Provost's Administrative Assistant.
4. The Academic Senate considers the proposal and recommends approval or disapproval. If approved, the proposal is forwarded to the Provost for consideration. If the Academic Senate disapproves the proposal, the originator may request that the item be forwarded to the Full Faculty for consideration, utilizing the procedures set forth in the Senate Bylaws. The Academic Senate will provide written rationale to the originator when proposals are disapproved and the proposal is returned to the originator.
5. Approved proposals will be forwarded to the Provost. The Provost approves or disapproves the proposal. If approved, the proposal is then forwarded to the Chancellor. From this point forward, the Provost's Administrative Assistant will update the Proposal page on the website.
7. The Chancellor approves or disapproves the proposal.
8. The proposal will then either be implemented or referred to MSU for further action. The tracking page on the Provost site will be updated as required.

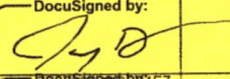
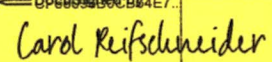
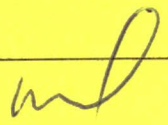
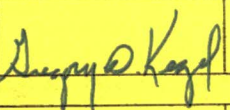
Subcommittee and Academic Senate college representatives will notify their respective colleges' of the progress of submitted proposals or the proposal may be tracked via the web page -- <http://www.msun.edu/admin/provost/senate/proposals.htm>

Documentation and forms for the curriculum process is also available on the web page:
<http://www.msun.edu/admin/provost/forms.htm>

***** (If a proposal is disapproved at any level, it is returned through the Academic Senate secretary and the Senate President, to the Dean of the submitting college who then notifies the originator.

See back for tracking form



	Date	Action Taken	Signature	Date	Comments/Reason for Disapproval	Sent to	Date	Transmittal E-mail sent
*Abstract received by Senate Secretary		Copy to Senate President. Forward to Provost.	0					
*Provost		<input type="checkbox"/> Abstract Approved <input type="checkbox"/> Disapproved						
Received by Senate Secretary		Tracking	DocuSigned by: <i>Debra Bradley</i> 26500ATE6DE64DB...		Forward to Gen Ed Committee	V Guyant		DocuSign
General Education Committee (if applicable)	4/5/2022	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved	DocuSigned by: <i>Valerie Guyant</i> DE995B0729A143B...		Forward to Curriculum	Joseph Todd		DocuSign-
Curriculum Committee (if applicable)	4/6/2022	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved	DocuSigned by:  BP689906CDB4E7...		Forward to Academic Senate	Carol Reifschneider		docusign
Academic Senate	4/18/2022	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved	 6C6C776AE6D7467...		Forward to the Provost	Provost Moisey		DocuSign
Full Faculty (if necessary)		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved						
Provost		<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved		5/24/22				
Chancellor		<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved		5/24/22	will be forwarded to MSU + OCHT after R2P has been approved 5/24/22			
MSU		<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved						
BOR		<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved						
NWCCU		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved						
Provost		Advise originating college and Academic Senate of status. Update Web page.						
Registrar		Catalog/Policy Manual Update						

NOTE: The secretary of the Academic Senate will update the Academic Senate Proposal web page from initial receipt until the proposal reaches the Provost. The Provost's Administrative Assistant will ensure that the current status of each proposal is maintained on the Academic Senate Proposal web page from that point forward. *Abstract and pre-approval required for new programs ONLY.

DATE: February 11th, 2022

TO: MSU-Northern faculty Academic Senate

RE: Applied Equine Management minor

A vote was conducted in the College of Technical Sciences (COTS) to either approve or disapprove of this proposed minor.

The COTS vote was an overwhelming **APPROVE** for the minor. There were no disapprove votes recorded.



DATE: November 1, 2021

TO: Office of the Commissioner of Higher Education

FROM: Agricultural Technology Advisory Board- Montana State University Northern (MSUN)

SUBJECT: Letter of Support for Establishing a Minor in Applied Equine Studies at Montana State University Northern

The Agricultural Technology Advisory Board has met and reviewed the curriculum proposal presented by the Agricultural Technology faculty and support the establishment of a Minor in Applied Equine Management in the Agricultural Technology Department of the College of Technical Sciences at Montana State University- Northern.

The Agricultural Technology Advisory Board has been a part of the equine minor program since its inception. We have contributed as industry professionals, employers, and community members to help put together a program of study that meets the needs of the area. The curriculum offers students a variety of selective courses that can be individualized based on the students' career goals. At the recommendation of the advisory board, biological sciences were added to provide students with a science-based approach to equine management, should they desire that body of knowledge in their education. The applied nature of the minor fits well with MSU-Northern's mission and goals as a university.

It is the opinion of the Agricultural Technology Advisory Board that the program, as written, will meet the needs of industry employers that desire employee knowledge in equine management. We believe that the combination of the Agriculture Operations Technology B.S. with a minor in Applied Equine Management is an employable education within the agricultural community of Montana. It will also provide a practical knowledge base for those students that wish to engage in equine management at the recreational level.

We appreciate your consideration in this matter and urge you to approve the Minor in Applied Equine Management.

Sincerely

Perry Johnston
Agricultural Technology Advisory Board Chair
Account Manager- CHS Agronomy

COURSE REVISION FORM

NEW X DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Agriculture Date 3-30-22

Submitter  Dean  Date 3-30-22
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

New course added as part of the new Minor in Applied Equine Management.

Please provide the following information:

College: COTS
Program Area: Agriculture
Date: 3-30-22
Course Prefix & No.: EQUUS 202

Course Title: Equine Science 1
Credits: 4

Required by: Minor in Applied Equine Management

Selective in: None
Elective in: None
General Education: None

Lecture:
Lecture/Lab: X
Gradable Lab:
Contact hours lecture: 3
Contact hours lab: 2

Current Catalog Description (include all prerequisites):

None

Proposed or New Catalog Description (include all prerequisites):

Students will learn the basic principles of horse care and nutrition which is essential for the proper development, conditioning, and performance of horses. The student will gain a basic understanding of the nutritional requirements of horses in a variety of life stages, activity levels, and reproductive statuses. Related aspects of basic equine care including gastrointestinal parasite control, anthelmintic, dental care, hoof care, and preventative medicine will also be covered. Students will be expected to demonstrate an understanding and comprehension of course content through class discussion of lecture material, examinations, and other written assignments. Prerequisite: ANSC 100 or BIOB 160/161

Course Outcome Objectives:

Outcome 1: Equine Nutritional Requirements

- Be able to estimate the horse's weight and body condition score.
- Understand equine digestive physiology and the impacts upon it of the various forms of colic.

Outcome 2: Equine Anatomy and Physiology

- Understand equine reproductive and maturation processes.
- Know the hierarchy, types, and functions of cells within the horse
- Be able to describe the primary components, functions, and path of equine blood and understand basic immunology of the horse,
- Understand the anatomy and functions of the equine cardiovascular system and related disease processes,
- Understand equine skeletal anatomy and physiology, including those of the limb and hoof, and the musculoskeletal system, be able to identify elements by palpation and understand basic related disease processes.

Outcome 3: Equine Illness and Disease

- Understand the equine respiratory system and the signs and symptoms of respiratory diseases and fever.
- With reference to the common and scientific names and directional terminology of the body part of the horse, to be able to evaluate the horse's physical condition and vital signs, determine normal and abnormal, including the general signs of shock and serious illness, so as to be able to inform the veterinarian

Outcome 4: Equine Dental and Hoof Care

- Be able to identify the dental anatomy of the horse and know the eruption times of the horse's teeth.

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Lab Fee \$150

COURSE REVISION FORM

NEW X DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Agriculture Date 3-30-22

Submitter [Signature] Dean [Signature] Date 3-30-22
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

New course added as part of the new Minor in Applied Equine Management.

Please provide the following information:

College: COTS
Program Area: Agriculture
Date: 3-30-22
Course Prefix & No.: EQUUS 203

Course Title: Equine Science II
Credits: 4

Required by: Minor in Applied Equine Management

Selective in: None
Elective in: None
General Education: None

Lecture:
Lecture/Lab: X
Gradable Lab:
Contact hours lecture: 3
Contact hours lab: 2

Current Catalog Description (include all prerequisites):

None

Proposed or New Catalog Description (include all prerequisites):

The student will learn the fundamentals of equine anatomy, physiology, and diseases using a step-wise systems approach. The normal anatomy and physiology of each system of the horse are covered initially, and then basic pathological concepts and important diseases of each system are investigated. This second part of the two-part series will cover the nervous system, endocrine system, urogenital system, integumentary system, special senses, and the basics of equine genetics and reproduction. Students will be expected to demonstrate an understanding and comprehension of course content through class discussions, laboratories, examinations, and other written assignments. Prerequisite: EQUUS 202

Course Outcome Objectives:

Outcome 1: Equine Anatomy and Physiology

- Know the anatomy and physiology of the integument
- Know and be able to label the anatomy of the urinary system
- Understand the important functions that occur within the kidneys, including the concepts behind glomerular filtration and acid-base balance

Outcome 2: Equine Diseases

- Understand the various types of disease-causing organisms and how each can be treated or prevented
- Know the disorders that can occur with the skin and some of the treatment options for these disorders

Outcome 3: Equine Nervous, Endocrine, Urogenital, and Integumentary systems

- Understand the importance of the excretory system
- Understand the anatomy and physiology of the neurologic system and how it provides control for the entire body
- Understand the functions of the endocrine system and the various organs and hormones that are involved

Outcome 4: Equine Genetics and Reproduction

- Know the anatomy and physiology of the reproductive system, including reproductive genetics

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Lab Fee \$150

COURSE REVISION FORM

NEW X DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Agriculture Date 3-30-22

Submitter:  Signature _____ Dean:  Signature (indicates "college" level approval) _____ Date 3-30-22

Please provide a brief explanation & rationale for the proposed revision(s):

New course added as part of the new Minor in Applied Equine Management.

Please provide the following information:

College: COTS
Program Area: Agriculture
Date: 3-30-22
Course Prefix & No.: EQUUS 425

Course Title: Advanced Horse Care & Nutrition
Credits: 4

Required by: Minor in Applied Equine Management

Selective in: None
Elective in: None
General Education: None

Lecture:
Lecture/Lab: X
Gradable Lab:
Contact hours lecture: 3
Contact hours lab: 2

Current Catalog Description (include all prerequisites):

None

Proposed or New Catalog Description (include all prerequisites):

Advanced Horse Care & Nutrition is a knowledge-based course that is intended to further broaden the student's understanding of a horse's health and welfare. Students will combine knowledge gained in EQUUS 202 and EQUUS 303 to more fully understand the interconnections between nutrition and management and the various problems and diseases of horses. Students will demonstrate their understanding of course material via class participation, laboratories, written field and research reports, presentations, and examinations. Prerequisite: EQUUS 303

Course Outcome Objectives:

Outcome 1: Dietary Formulations for Equine Needs

- Recognize important characteristics of equine forage, and pastures
- Assess a horse's body condition and formulate an appropriate feeding program
- Understand the importance of various nutrients as they relate to a horse's health

Outcome 2: Equine Dentistry

- Be able to accurately determine the age of a horse by examining their teeth
- Understand the various methods available to correct dental problems
- Examine a horse's mouth and be able to recognize common dental problems

Outcome 3: Equine Disease Management

- Be able to use scientific research methodologies to find answers and develop solutions to various equine health issues.
- Understand the signs and symptoms of internal and external parasites
- Recognize the importance of proper parasite control and prevention
- Recognize and understand common infectious and non-infectious equine diseases
- Recognize the importance effective methods of disease prevention

Outcome 4: Emergency and Preventative Medicine

- Recognize when to seek a veterinarian's immediate care
- Learn about various diagnostic tools used by veterinarians to determine the source of lameness
- Understand the different types of lameness-acute vs. chronic
- Understand the symptoms associated with equine lameness

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Lab Fee \$100

COURSE REVISION FORM

NEW X DROPPED _____ MAJOR REVISION _____ FOR INFORMATION ONLY _____

College COTS Program Area Agriculture Date 3-30-22

Submitter  Dean  Date 3-30-22
Signature Signature (indicates "college" level approval)

Please provide a brief explanation & rationale for the proposed revision(s):

New course added as part of the new Minor in Applied Equine Management.

Please provide the following information:

College: COTS
Program Area: Agriculture
Date: 3-30-22
Course Prefix & No.: EQUUS 4XX

Course Title: Equine Business Management
Credits: 3

Required by: Minor in Applied Equine Management

Selective in: None
Elective in: None
General Education: None

Lecture: X
Lecture/Lab:
Gradable Lab:
Contact hours lecture: 3
Contact hours lab:

Current Catalog Description (include all prerequisites):

None

Proposed or New Catalog Description (include all prerequisites):

In this course students will explore equine financing, legislation, regulation, transportation, and facility design and maintenance. Students will conduct an examination of equine transportation laws related to domestic and international travel. Students will investigate types of equine housing facilities and determine the most appropriate layout for an operation.

Course Outcome Objectives:

Competency Area 1: Transportation

1. Understand the travel restrictions associated with moving equestrian stock.
2. Explore and understand laws related to equine transportation domestically and internationally.

Competency Area 3: Facilities

1. Understand special equine housing considerations
2. Design an appropriate and functional ranch horse housing facility
3. Demonstrate how to properly care for equine facilities

Competency Area 3: Budgets

1. Explore and understand the financial and capital obligations of owning a horse.
2. Create a one year, variable and fixed costs budget directly related to an equine enterprise

Additional instructional resources needed (including library materials, special equipment, and facilities). Please note: approval does not indicate support for new faculty or additional resources.

Lab Fee \$75

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- 1. Overview of the request and resulting changes.** Provide a one-paragraph description of the proposed program. Will this program be related or tied to other programs on campus? Describe any changes to existing program(s) that this program will replace or modify. *[89/100 words]*

The Agriculture Technology department is putting forward this proposal to add a minor in Applied Equine Management to the Agriculture Technology Department in the College of Technical Sciences at Montana State University- Northern. The Applied Equine Management minor is a practical, industry-based approach to equine production and management. The minor is considered value -adding and can be associated with any academic major. The majority of enrollment is expected to come from the agriculture program. The minor would not change the agriculture major, simply offer another branch of the vast industry.

- 2. Relation to institutional strategic goals.** Describe the nature and purpose of the new program in the context of the institution's mission and core themes. *[126/200 words]*

The Applied Equine Management minor is designed with practicality in mind. The program is a value -adding minor that would prepare students for professional and technical careers that involve care and contact with horses. A minor in Applied Equine Management would allow students to explore their interests in equitation while engaging in rigorous coursework focused on the skills needed to pursue careers with equine related extensions such as a ranch or stable manager, mounted tour guide, manager of a guest ranch, as well as general horse ownership. Using an industry-based approach, students will learn the fundamentals of caring for horses used in recreation, work, and sport. Elements of horsemanship including western riding, horse handling, confirmation, and evaluation will be explored through the expansion of agricultural course offerings.

- 3. Process leading to submission.** Briefly detail the planning, development, and approval process of the program at the institution. *[82/100 words]*

The minor in Applied Equine Management has been a student, industry, and community driven program. By working with individuals on campus, in the community, and within the equine industry, we have been able to assemble a program of study that will actively engage students in the practical knowledge needed to produce and manage equine stock. Approval of this program is respectfully submitted to the College of Technical Science, Faculty Senate, Provost, Chancellor, Montana State University Bozeman and the Montana Board of Regents.

- 4. Program description.** Please include a complete listing of the proposed new curriculum in Appendix A of this document.

The Applied Equine Management minor is designed to give students the practical knowledge and experience needed to own or work with horses. Students enrolled in the minor will learn basic animal science, basic equine science, feeding, nutrition, basic riding, and management practices. This minor allows students to pursue elective courses that supplement equine business and range management practices. This minor will be a supplementary program of study intended to increase the value and employability of a graduate who wishes to include this body of knowledge and skills in their career.

Program of Study

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Freshman Year

ANSC 100 Introduction to Animal Science (3 Credits) **OR** BIOB 160/161 Principles of Living Systems w/ lab (5 credits)

EQUUS 202 Equine Science I (4 Credits with integrated lab)

Sophomore Year

NRSM 260/261 Rangeland Management (4 Credits) **OR** ANSC 202/203 Livestock Feeding and Nutrition (4 Credits) **OR** BIOC 380/381 Zoology w/ lab (5 credits)

EQUUS 203 Equine Science II (4 Credits in integrated lab)

Junior Year

EQUUS 4xx Equine Business Management (3 Credits)

AGTE 410 Agriculture Technology Management (4 Credits) **OR** BMGT 335 Management and Organization (3 credits)

Senior Year

EQUUS 425 Advanced Horse Care and Nutrition (4 Credits with integrated lab)

- a. List the program requirements using the following table.

	Credits
Credits in required courses offered by the department offering the program	26
Credits in required courses offered by other departments	13
Credits in institutional general education curriculum	0
Credits of free electives	0
Total credits required to complete the program	25

- b. List the program learning outcomes for the proposed program. Use learner-centered statements that indicate what students will know, be able to do, and/or value or appreciate as a result of completing the program.

Students who successfully complete a minor in applied equine management will be able to:

1. Demonstrate how to balance a ration for a horse taking into consideration the equine digestive anatomy.
2. Demonstrate safe handling and work practices keeping both the horse and worker in mind.

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3. Demonstrate the evaluation of a horse based on confirmation and anatomy.
 4. Demonstrate an understanding of, and treatment plan for, common disease, parasites, injury and nutrition-related illnesses
 5. Demonstrate an understanding of specific equine-related facilities and housing practices.
- 5. Need for the program.** To what specific student, regional, and statewide needs is the institution responding to with the proposed program? How will the proposed program meet those needs? Consider workforce, student, economic, societal, and transfer needs in your response as appropriate. *[114/250 words]*

The need for a minor in Applied Equine Management is demonstrated by the parties putting forth this proposal. The students of the MSUN rodeo team have a desire to expand their knowledge of horse ownership, production and management. The ranch industry in Northern Montana sees a need for workers with a particular skill set of working with equine stock. Considering a number of our students not only own equine stock, but will eventually work with equine stock, a minor program of study is not only appropriate but necessary given the specialty nature of equine management and production. This program of study takes into consideration the practical aspects of owning and working with equine stock.

- 6. Similar programs.** Use the table below to identify and describe the relationship between any similar programs within the Montana University System.

Institution Name	Degree	Program Title
UM- Western	Minor	Equine Studies Related Area
	A.A.S	Equine Studies Management Option
Dawson Community College	A.A.S	Animal Science- Equitation Option
Miles Community College	A.A.S	Equine Studies
	C	Agriculture & Equine Studies
	A.A	Equine Management Emphasis
MSU Bozeman	B.S	Animal Science- Equine Science Option

- a. If the proposed program substantially duplicates another program offered in the Montana University System, provide a rationale as to why any resulting duplication is a net benefit to the state and its citizens. *[169/200 words]*

The proposed curriculum, as written, is for a minor associated with an existing bachelor's degree. The only program that duplicates this minor would be the Minor in Equine Studies Related Area offered at the University of Montana Western. This is not a substantial duplication because the Minor in Equine Studies Related Area consists only of EQUUS coded courses and does not include studies in business technology,

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biology, general animal science, or rangeland management. The Equine Studies Related Area minor consists of only four credits of upper division courses and includes four credits related to Equine Selection and Judging. The minor of Applied Equine Management, as proposed, covered selection and judging as a component of the Equine Science I & II courses. A minor in Applied Equine Management is a net benefit to the State of Montana and its citizens because it prepares the future generation of agricultural workers to own, operate, or participate in sustainable equine business enterprises as well as those businesses utilizing equine power for regular operations.

- b. Describe any efforts that were made to collaborate with similar programs at other institutions. If no efforts were made, please explain why. *[75/200 words]*

Communications with institutions housing similar programs of study have been made at all levels within the University. The effort to bring forth this program has come from both administration and faculty within the University. Faculty collaboration included receiving course Syllabi for FLOC'd courses that would be offered at MSU Northern as well as general advising from those program faculty on how to go about implementing the minor and recruiting students that will populate the minor.

- 7. Implementation of the program.** When will the program be first offered? If implementation occurs in phases, please describe the phased implementation plans. *[94/100 words]*

Phase one: Initial Course Offerings will be rolled out as follows:

Spring 2022: EQUUS 202 initial offering

Fall 2022: EQUUS 203 initial offering

Spring 2023: EQUUS 4xx (Equine Business Management) initial offering. EQUUS 202 offered in the regular schedule.

Fall 2023: EQUUS 425 initial offering. Resume regular offering of EQUUS 303

Spring 2024: First graduates with a minor in Applied Equine Studies. Regular spring schedule offering EQUUS 202, EQUUS 4xx

Phase Two: Regular course offerings. After reviewing graduate exit surveys, changes will be made and EQUUS courses will be offered on a regular schedule.

- a. Complete the following table indicating the projected enrolments in and graduates from the proposed program.

Fall Headcount Enrollment					Graduates				
AY21/22	AY22/23	AY23/24	AY24/25	AY24/25	AY24	AY25	AY26	AY___	AY___
10	15	30	25	30	10	5	5		

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- b. Describe the methodology and sources for determining the enrollment and graduation projections above. *[80/200 words]*

Initial headcounts for the population of EQUUS 202 are based on actual enrollment numbers in ANSC 100 (prerequisite course). Some of those students are A.A.S students, however, the Agriculture Technology A.A.S program has 9 built-in advisor approved electives leaving space for students to take EQUUS courses, should they choose to do so. A.A.S. students enrolled in the lower division EQUUS courses would not result in a graduate with a minor in Applied Equine Studies, but does impact the course headcounts.

- c. What is the initial capacity for the program?

Given the hands-on nature of the program and the required use of live animal stock, the initial capacity of the program would need to be set at a maximum of 15 for safety reasons. As interest in the program grows, enrollment capacity will need to be adjusted to accommodate more students at which time safety concerns for larger class sizes will need to be addressed. Possible solutions include offering two sections of lower division courses to accommodate those A.A.S students taking EQUUS as elective options as well as hiring a teaching assistant to assist the professor in monitoring students.

- 8. Program assessment.** How will success of the program be determined? What action would result if this definition of success is not met? *[55/150 words]*

Success of the program will be determined through a rigorous assessment plan, discussions with graduates, and input from the agricultural advisory board. This includes annual assessment reports and plans submitted to the Office of Teaching and Learning Excellence. If success is not being achieved changes to the program will be discussed and proposed as appropriate.

- a. Describe the assessment process that will be used to evaluate how well students are achieving the intended learning outcomes of the program. When will assessment activities occur and at what frequency? *[123/150 words]*

This program will be evaluated each year in the program assessment and submitted to the Office of the Provost. In this assessment, program-level student outcomes are reviewed, artifacts and data are collected and analyzed, and a summary of findings is provided. Based on the outcome of this assessment, an Assessment Plan is created for the upcoming year. This includes all program learning outcomes, assessment mapping, and assessment methods. Program learning outcomes are assessed on a cycle/schedule and continuous improvement is implemented as needed. Rubrics are used to assess program learning outcomes, as recommended by the Office of Teaching and Learning Excellence. These reports and assessments are completed annually and due to the Office of the Provost on Sept. 30 of every academic year.

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- b. What direct and indirect measures will be used to assess student learning? [72/100 words]

Direct measures include completion and success of course formative assessments. This may include tests, demonstrations, presentations, and overall completion of course materials. Indirect measures of assessment will come from the employers of our students and the success they are seeing in students they hire. Employer-initiated assessments will be brought forward during biannual agriculture advisory board meetings as well as in discussions with industry professionals at career fairs, conferences, and general department meetings.

- c. How will you ensure that the assessment findings will be used to ensure the quality of the program? [64/100 words]

As outlined above, the assessment plan includes implementing any changes that need to be made to the program including assessment methods or necessary changes to learner outcomes. Any program changes that need to be made will require a Program/Degree Revision submitted to the faculty senate for review. Changes in assessment methods will be changed at the discretion of the course instructors as deemed appropriate.

- d. Where appropriate, describe applicable specialized accreditation and explain why you do or do not plan to seek accreditation. [26/100 words]

The minor in Applied Equine Management would be reviewed, on schedule, with the other degree programs in the agricultural technology department as required for program assessment.

9. Physical resources.

- a. Describe the existing facilities, equipment, space, laboratory instruments, computer(s), or other physical equipment available to support the successful implementation of the program. What will be the impact on existing programs of increased use of physical resources by the proposed program? How will the increased use be accommodated? [113/200 words]

The existing facilities housed in Brockmann Center would be sufficient for the lecture components associated with the minor program of study. The computer laboratory in Brockmann center provides adequate computing resources for minors. Considering this is a minor program of study, the lab objectives can be achieved using existing facilities in the community. The impact of this program of study would be the increased use of equine facilities in the Havre community and an increased use of agricultural academic areas on campus. The agriculture classroom is a dedicated room for the agriculture program and increased use of the space would not impede the scheduling of other academic courses offered in the building.

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- b. List needed facilities, equipment, space, laboratory instruments, etc., that must be obtained to support the proposed program. (Enter the costs of those physical resources into the budget sheet.) How will the need for these additional resources be met? *[48/150 words]*

Given that this is a minor program of study, the current facilities, equipment, space, laboratory instruments, computers, and other physical equipment would be sufficient to facilitate the learning necessary for successful completion. If the program outgrows the current facilities, and equipment, expansion can be discussed at that time.

10. Personnel resources.

- a. Describe the existing instructional, support, and administrative resources available to support the successful implementation of the program. What will be the impact on existing programs of increased use of existing personnel resources by the proposed program? How will the quality and productivity of existing programs be maintained? *[124/200 words]*

The current agriculture technology faculty members have the skill set to teach the courses coded EQU. Doug Kallenberger is both a faculty member and rodeo coach and will be able to teach the courses as they are sequentially rolled out. Upon the hiring of a new Agriculture-Precision Technology instructor, the courses will be offered on a regular schedule as there will be space in Doug's teaching schedule. The remaining courses housed in the agriculture program would continue to be taught by the agriculture faculty. Courses in other departments would be taught by the regular faculty members. Quality and productivity of all programs is maintained through annual assessment. Increased enrollment in these courses will not impact the quality and productivity of existing programs on campus.

- b. Identify new personnel that must be hired to support the proposed program. (Enter the costs of those personnel resources into the budget sheet.) What are the anticipated sources or plans to secure the needed qualified faculty and staff? *[58/150 words]*

The current faculty in the agriculture department have the necessary skill set and training to be able to teach courses in equine studies. Should an adjunct need to be hired, to avoid faculty overload teaching, the maximum cost associated with an adjunct faculty would be \$900 per credit, though most courses are adjunct taught at \$750 per credit.

11. Other resources.

- a. Are the available library and information resources adequate for the proposed program? If not, how will adequate resources be obtained? *[43/100 words]*

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The campus library and information resources are adequate. If other libraries or information resources are needed, the Agriculture Department will reach out to community members, the advisory board, and other professionals to determine what materials are appropriate and how best to obtain them.

- b. Do existing student services have the capacity to accommodate the proposed program? What are the implications of the new program on services for the rest of the student body? [45/150 words]

The existing student services have the ability to accommodate the proposed program. The remainder of the student body, not enrolled in the minor of Applied Equine Management, should not experience any lapse in student services due to the addition of the minor program of study.

- 12. Revenues and expenditure.** Describe the implications of the new program on the financial situation of the institution. [97/100 words]

Revenue for the program is based on \$119.33 per credit net tuition revenue per FTE for undergraduates at MSU-Northern as stated by the Office of the Commissioner of Higher Education. Associated lab fees based on projected enrollment are included in the fiscal analysis form. Once the program reaches sustainable enrollment in year four, a net income of \$3,847 is realized. The \$29,974.00 expense of the program during its first years of establishment are based on the lowest anticipated enrollment and the highest anticipated costs which will be recovered over a seven-year period once the program is fully established.

- a. Please complete the following table of budget projections using the corresponding information from the fiscal analysis form for the first three years of operation of the new program.

	Year 1	Year 2	Year 3
Revenues	Tuition Fees Lab Fees	Tuition Fees Lab Fees	Tuition Fees Lab Fees
Expenses		Tenure Track Faculty Salary+benefits Fees associated with the use of the fairgrounds for ground work	0.5 Tenure Track Faculty Salary+Benefits 1.0 Adjunct Faculty Salary Fair Ground Fees Consumable materials and computer software
Net Income/Deficit (Revenues-expenses)	Deficit	Deficit	income

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- b. Describe any expenses anticipated with the implementation of the new program. How will these expenses be met? *[162/200 words]*

In the first year of operations, one agriculture faculty member will teach 4 EQUUS credits a semester (1/3 FTE) costing \$14,783. In the second year of operation, one agriculture faculty member will teach 15 EQUUS credits over two semesters (2/3 FTE) costing \$35,478. In the third year of operation, the program is at sustainable enrollment. One adjunct faculty member teaches 8 credits per year at \$750/credit and one full-time faculty member teaches 7 credits per year (1/3 FTE) for a total faculty cost of \$23,739. In all consecutive years, one full-time agriculture faculty member will dedicate 0.5 FTE teaching time to EQUUS courses and one adjunct faculty member will teach 4 credits per year for a total faculty cost of \$32,565.

Other expenses include fees associated with the use of the fairgrounds riding arena (Bigger Better Barn) for ground work and other live animal work, consumable supplies, and computer software and upgrades. These other expenses are anticipated at a maximum of \$6000

- i. If funding is to come from the reallocation of existing state appropriated funds, please indicate the sources of the reallocation. What impact will the reallocation of funds in support of the program have on other programs? *[86/150 words]*

The initial cost of establishing the program is entirely the cost of faculty. This faculty members salary is already considered in the budget. With the addition of a new Precision Agriculture faculty member there is existing room in the agriculture programs course offerings preventing the faculty member from reaching overload. Funds will not need to be reallocated to support faculty members salary. The adjunct faculty members fees can be paid out of net tuition income from the enrolled students in the Applied Equine Management minor.

- ii. If an increase in base funding is required to fund the program, indicate the amount of additional base funding and the fiscal year when the institution plans to include the base funding in the department's budget.

There is not an anticipated base funding increase requirement associated with the establishment of a minor in Applied Equine Management.

- iii. If the funding is to come from one-time sources such as a donation, indicate the sources of other funding. What are the institution's plans for sustaining the program when that funding ends? *[17/150 words]*

There are not currently any donations associated with the establishment of a minor in Applied Equine Management

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- iv. Describe the federal grant, other grant(s), special fee arrangements, or contract(s) that will be valid to fund the program. What does the institution propose to do with the program upon termination of those funds? [50/150 words]

There are not currently any federal grants, other grants, or contracts associated with the establishment of a minor in Applied Equine Management. The special fee arrangement with the rodeo team to split the cost of using the fairgrounds will be covered in future years with the usage of course fees.

- 13. Student fees.** If the proposed program intends to impose new course, class, lab, or program fees, please list the type and amount of the fee.

Lab Fee Schedule

EQUUS 202: \$150

EQUUS 203: \$150

EQUUS 4xx: \$75

EQUUS 425: \$100

- 14.** Complete the fiscal analysis form.

See Attached **Appendix A- Fiscal Analysis**

See Attached: **Appendix B- Program Overview**

See Attached **Appendix C- Proposed New Curriculum: EQUUS 202, EQUUS 203, EQUUS 425, Equine Business Management**

Signature/Date

College or School Dean:



Chief Academic Officer:

Chief Executive Officer:

Flagship Provost*:

Flagship President*:

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*Not applicable to the Community Colleges.

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Appendix A- Fiscal Analysis

Academic Degree Program Proposal - Fiscal Analysis Form						
CAMPUS: Montana State University						
AWARD LEVEL: Minor						
PROGRAM NAME: Applied Equine Management						
PROGRAM CODE:						
		FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
ENROLLMENT PROJECTIONS						
Headcount						
annual unduplicated headcount of students with declared major or minor within the program		10	25	30	25	30
Credit Hours						
annual avg. credits hours earned per student in program related curriculum		4	8	8	8	8
Student FTE						
Undergrad: (Headcount x CH)/30 Graduate: (Headcount x CH)/24		1.666666667	8.333333333	10	8.333333333	10
Completions						
Annual number of program completers		0	0	10	5	5
EXPENDITURES						
Tenure Track Faculty	FTE	0.3	0.6	0.3	0.5	0.5
	Salary + Benefits	\$59,131	\$59,131	\$59,131	\$59,131	\$59,131
Non-tenure Track Faculty <small>*Includes Adjunct Instructors</small>	FTE			1.0	1.0	1.0
	Salary + Benefits			\$6,000	\$3,000	\$3,000
Graduate Teaching Assistants	FTE					
	Salary + Benefits					
Staff	FTE					
	Salary + Benefits					
Total Faculty & Staff	FTE	0.3	0.5	1.3	1.3	1.3
	Salary + Benefits	\$14,783	\$35,478	\$23,739	\$32,565	\$32,565
Operations (supplies, travel, rent, etc)			\$6,000	\$6,000	\$6,000	\$6,000
Start-up Expenses (OTO)						
Total Expenses		\$14,783	\$41,478	\$29,739	\$38,565	\$38,565
Student FTE to Faculty (TT + NTT) Ratio		6.7	13.9	7.7	5.6	6.7
Net Income/Deficit (Revenue - Expenses)		-\$8,509	-\$21,465	\$4,485	\$3,847	\$3,847

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Appendix B: Program Overview**MINOR IN APPLIED EQUINE MANAGEMENT REQUIREMENTS**

Required Courses	Credits	Grade	Year	Semester	Substitution (Prefix, #, & Place)
ANSC 100 Introduction to Animal Science OR BIOB 160/161 Principles of Living Systems w/ lab	3 5	1		FA SP SU	
EQUS 202 Equine Science I	4	1		FA SP SU	
NRSM 260/261 Rangeland Management OR ANSC 202/203 Livestock Feeding and Nutrition OR BIOO 380/381 Zoology w/lab	4 4 5	2		FA SP SU	
EQUS 303 Equine Science II	4	2		FA SP SU	
EQUS 4xx Equine Business Management	3	3		FA SP SU	
AGTE 410 Agriculture Technology Management OR BMGT 335 Management and Organization	4 3	3/4		FA SP SU	
EQUS 425 Advanced Horse Care and Nutrition	4	4		FA SP SU	
Total Minor Credits	25/29				

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Appendix C: Proposed New Curriculum

EQUUS 202 Equine Science I

Prerequisite: ANSC 100 or BIOB 160/161

4 Credits

Lecture with Integrated Lab

Lab Fee: \$150

Course Description

Students will learn the basic principles of horse care and nutrition which is essential for the proper development, conditioning, and performance of horses. The student will gain a basic understanding of the nutritional requirements of horses in a variety of life stages, activity levels, and reproductive statuses. Related aspects of basic equine care including gastrointestinal parasite control, anthelmintic, dental care, hoof care, and preventative medicine will also be covered.

Students will be expected to demonstrate an understanding and comprehension of course content through class discussion of lecture material, examinations, and other written assignments.

Course Outcomes

Outcome 1: Equine Nutritional Requirements

- Be able to estimate the horse's weight and body condition score.
- Understand equine digestive physiology and the impacts upon it of the various forms of colic.

Outcome 2: Equine Anatomy and Physiology

- Understand equine reproductive and maturation processes.
- Know the hierarchy, types, and functions of cells within the horse
- Be able to describe the primary components, functions, and path of equine blood and understand basic immunology of the horse,
- Understand the anatomy and functions of the equine cardiovascular system and related disease processes,
- Understand equine skeletal anatomy and physiology, including those of the limb and hoof, and the musculoskeletal system, be able to identify elements by palpation and understand basic related disease processes.

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Outcome 3: Equine Illness and Disease

- Understand the equine respiratory system and the signs and symptoms of respiratory diseases and fever.
- With reference to the common and scientific names and directional terminology of the body part of the horse, to be able to evaluate the horse's physical condition and vital signs, determine normal and abnormal, including the general signs of shock and serious illness, so as to be able to inform the veterinarian

Outcome 4: Equine Dental and Hoof Care

- Be able to identify the dental anatomy of the horse and know the eruption times of the horse's teeth.

EQUUS 203 Equine Science II

Prerequisite EQUUS 202**4 credits****Lab Fee: \$150****Lecture with Integrated Lab****Course Description**

Students will build on the knowledge gained in EQUUS 202 and develop a deeper understanding of the fundamentals of equine anatomy, physiology, and diseases using a step-wise systems approach. The normal anatomy and physiology of each system of the horse are covered initially, and then basic pathological concepts and important diseases of each system are investigated. This second part of the two-part series will cover the nervous system, endocrine system, urogenital system, integumentary system, special senses, and the basics of equine genetics and reproduction.

Students will be expected to demonstrate an understanding and comprehension of course content through class discussions, laboratories, examinations, and other written assignments.

Course Outcomes**Outcome 1: Equine Anatomy and Physiology**

- Know the anatomy and physiology of the integument
- Know and be able to label the anatomy of the urinary system
- Understand the important functions that occur within the kidneys, including the concepts behind glomerular filtration and acid-base balance

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Outcome 2: Equine Diseases

- Understand the various types of disease-causing organisms and how each can be treated or prevented
- Know the disorders that can occur with the skin and some of the treatment options for these disorders

Outcome 3: Equine Nervous, Endocrine, Urogenital, and Integumentary systems

- Understand the importance of the excretory system
- Understand the anatomy and physiology of the neurologic system and how it provides control for the entire body
- Understand the functions of the endocrine system and the various organs and hormones that are involved

Outcome 4: Equine Genetics and Reproduction

- Know the anatomy and physiology of the reproductive system, including reproductive genetics

EQUUS 425 Advanced Horse Care & Nutrition

Prerequisite EQUUS 303**4 Credits****Lab Fee: \$100****Lecture Based with Integrated Lab****Course Description**

Advanced Horse Care & Nutrition is a knowledge-based course that is intended to further broaden the student's understanding of a horse's health and welfare. Students will combine knowledge gained in EQUUS 202 and EQUUS 303 to more fully understand the interconnections between nutrition and management and the various problems and diseases of horses. Students will demonstrate their understanding of course material via class participation, laboratories, written field and research reports, presentations, and examinations.

Course Outcome**Outcome 1: Dietary Formulations for Equine Needs**

- Recognize important characteristics of equine forage, and pastures
- Assess a horse's body condition and formulate an appropriate feeding program
- Understand the importance of various nutrients as they relate to a horse's health

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Outcome 2: Equine Dentistry

- Be able to accurately determine the age of a horse by examining their teeth
- Understand the various methods available to correct dental problems
- Examine a horse's mouth and be able to recognize common dental problems

Outcome 3: Equine Disease Management

- Be able to use scientific research methodologies to find answers and develop solutions to various equine health issues.
- Understand the signs and symptoms of internal and external parasites
- Recognize the importance of proper parasite control and prevention
- Recognize and understand common infectious and non-infectious equine diseases
- Recognize the importance effective methods of disease prevention

Outcome 4: Emergency and Preventative Medicine

- Recognize when to seek a veterinarian's immediate care
- Learn about various diagnostic tools used by veterinarians to determine the source of lameness
- Understand the different types of lameness-acute vs. chronic
- Understand the symptoms associated with equine lameness

Equine Business Management

400 Level- Undergraduate

3 Credits

Lab Fee: \$75

Course Description

In this course students will explore equine financing, legislation, regulation, transportation, and facility design and maintenance. Students will conduct an examination of equine transportation laws related to domestic and international travel. Students will investigate types of equine housing facilities and determine the most appropriate layout for an operation.

Performance Objectives

Outcome 1: Transportation

- Understand the travel restrictions associated with moving equestrian stock.

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- Explore and understand laws related to equine transportation domestically and internationally.

Outcome 2: Facilities

- Understand special equine housing considerations
- Design an appropriate and functional ranch horse housing facility
- Demonstrate how to properly care for equine facilities

Outcome 3: Budgets

- Explore and understand the financial and capital obligations of owning a horse.
- Create a one year, variable and fixed costs budget directly related to an equine enterprise



PROGRAM SHEET			
M0?-APPLIED EQUINE MANAGEMENT			
26 TOTAL SEMESTER CREDITS REQUIRED			
<i>Name:</i>		<i>Student ID:</i>	
LASTNAME	FIRSTNAME	MIDDLENAME	

MINOR IN APPLIED EQUINE MANAGEMENT REQUIREMENTS
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Required Courses	Crs	Grade	Year	Semester	Substitution (Prefix, #, & Place)
ANSC 100 Introduction to Animal Science OR	3	1		<u>FA</u> SP SU	
BIOB 160/161 Principles of Living Systems w/ lab	5			FA <u>SP</u> SU	
EQUUS 202 Equine Science I	4	1		FA <u>SP</u> SU	
NRSM 260/261 Rangeland Management OR	4	2		FA SP <u>SU</u>	
ANSC 202/203 Livestock Feeding and Nutrition OR	4			FA SP <u>SU</u>	
BIOO 380/381 Zoology w/lab	5			FA SP <u>SU</u>	
EQUUS 203 Equine Science II	4	2		<u>FA</u> SP SU	
EQUUS 4xx Equine Business Management	3	3		FA <u>SP</u> SU	
AGTE 410 Agriculture Technology Management OR	4	3/4		FA SP <u>SU</u>	
BMGT 335 Management and Organization	3			FA SP <u>SU</u>	
EQUUS 425 Advanced Horse Care and Nutrition	4	4		<u>FA</u> SP SU	
Total Minor Credits	25/29				

Minor GPA:	2.25 Required	Earned:	
Credits Earned at Northern:	10 Required	Earned:	
Total Credits Earned:	26 Required	Earned:	

Required

Student Signature

Date

Minor Advisor Signature

Date

Minor Chair/Director Signature

Date

Minor Dean, College of Technical Sciences Signature

Date