** Bachelor of Science: Equine and Ranch Management**

**Program Description:**

The Bachelor of Science: Equine and Ranch Management combines scientific agricultural management courses with a hands-on livestock experience. It incorporates both traditional and progressive ranch management, and performance horse methods. The degree provides a hands-on learning environment with a comprehensive curriculum, outstanding instructional facilities, exceptional full-time faculty and staff, and extensive agriculture industry connections, all to ensure students will acquire the practical, intellectual and communication skills necessary to meet the needs of the agriculture industry.

Students pursuing the Bachelor of Science Degree can choose to take extra courses throughout their time at Feather River College and graduate with both an associates degree and a bachelor’s degree. They can choose to receive an Associate of Science Degree in the Agriculture or Equine Studies Field upon completion of the required courses of these degrees.

**Equine and Ranch Management Bachelor of Science Student Learning Outcomes:**

Upon degree completion, graduates of the Equine and Ranch Management Bachelor of Science Program will acquire the following:

* Theoretical knowledge, practical experience, and skills that reflect the impact of technology and science on agriculture, natural resource conservation and stewardship, equine and bovine production, and facility management.
* Knowledge of ethical concepts and practices for a balance between production and protection of resources (soil, plant, water) and animal welfare.
* A proficiency in critical thinking, reading, writing, and oral language skills and an ability to analyze data and solve problems related to equine and ranch management.
* A proficiency in equine, bovine, and ranch management, business and personnel management.
* Develop and demonstrate business and ethical leadership skills that enhance professional success in the agriculture and equine industry.
* An ability to enter employment or create a successful entrepreneurial business in the field of equine and ranch management, or transfer to a university for an advanced degree in a related field.

**Bachelor’s Degree Credit Summary:**

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| **Lower Division Requirements** |
| General Education 40-43 units  ***-AND-***  Lower Division Major Courses 22 units  **Total Lower Division Units: 62-65 units** |

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| **Bachelor of Science Upper Division Requirements** |
| Upper Division Core Requirements 24 units  Upper Division General Education 9 units  Upper Division Career Electives min. of 9 units  ***-AND-***  Bachelor’s Degree General Electives min. of 16 units  **Total Units for Degree: 58 units** |

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| *Lower Division Units: 62-65 units* |
| *Upper Division Units: 42 units* |
| *Bachelor’s Degree General Electives: 13-16 units* |
| ***Total Completed Units for Degree: 120 units*** |

**Assessment:**

The student’s success in completing the Student Learning Outcomes will be assessed through a series of feedback, testing and a final project in the area of Equine and Ranch Management. Students will also be asked to take an exit survey and will be contacted after graduation for information on job placement and overall reception of their education.

**Job Placement:**

Students will have an opportunity to network with prominent members of the Agriculture community. Graduates of the Bachelor’s Degree Program should be able to find jobs in the Equine Management or Agriculture Industry. If it is their preference, they will also be able to further their education at a graduate level in a related field.

**Bachelor of Science: Equine and Ranch Management**

***Lower Division Requirements***

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| **Lower Division General Education Requirements**  **(40-43 units)** |
| *The following lower division courses are REQUIRED for the Bachelor’s Degree students and will fulfill CSU breadth requirements. Areas with no degree requirements are indicated by the STUDENT CHOICE label. Student can choose any course in that area as long as it fulfills the CSU breadth requirements. Other universities may require specific General Education courses for their degrees. Please contact the Agriculture Academic Advisor for assistance in developing your own individual Student Education Plan.*  **Area A: Communication in the English Language and Critical Thinking 9 units**  ***A1 fulfillment****:*  STUDENT CHOICE 3 units  ***A2 fulfillment:***  STUDENT CHOICE 3 units  ***A3 fulfillment:***  STUDENT CHOICE 3 units  **Area B: The Physical Universe and Its Life Forms 10 - 13 units**  ***B1 fulfillment (choose one):***  AGPS 210/ ENVR 210 Introduction to Soil Science 3 units  CHEM 100 Chemistry and Society 4 units  CHEM 102 General Chemistry 5 units  ***B2 and B3 fulfillment (choose one):***  AGAS 120 Introduction to Animal Science 3 units  AGPS 104 Introduction to Plant Science 3 units  BIOL 100 Concepts in Biology 4 units  BIOL 102 Cellular and Molecular Biology 4 units  BIOL 104 Animal Biology, Evolution and Ecology 4 units  BIOL 106 Plant Biology, Evolution and Ecology 4 units  ***B4 fulfillment:***  MATH 202 Elementary Statistics 4 units  **Area C: Arts, Literature, Philosophy, Foreign Languages 9 units**  ***C1 fulfillment:***  STUDENT CHOICE 3-6 units  ***C2 fulfillment:***  STUDENT CHOICE 3-6 units  *(see US-1 for recommendations)* ***C1 or C2 fulfillment:*** Choose one additional course from either C1 or C2  **Area D: Social, Political Institutions and Behavior, Historical Background 9 units**  STUDENT CHOICE 6 units  *(see US-2 for recommendations)*  ***(Choose one):***  BUS 106 Macroeconomics 3 units  ENVR 180 Environmental Policy 3 units  **Area E: Lifelong Understanding and Self Development 3 units**  STUDENT CHOICE  **American Institutions Requirement .**  ***US-1 fulfillment (counts for Area C2 or D; choose one):***  HIST 108 The United States to 1877 3 units  HIST 110 The United States since 1865 3 units  ***US-2 fulfillment (also counts for Area D):***  POL 101 American Government and Politics 3 units |

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| **Lower Division Major Course Requirements**  **(22 units)** |
| BUS 102 Financial Accounting 4 units  *The study of accounting as an information system, examining why it is important and how it is used by investors, creditors, and others to make decisions. This course covers the accounting information system, including recording and reporting of business transactions with a focus on the accounting cycle, the application of generally accepted accounting principles, the financial statements, and financial analysis. Includes issues relating to asset, liability, and equity valuation, revenue and expense recognition, cash flow, internal controls, and ethics.*  AGEQ 102 Elements of Equine Science 3 units  *A survey of the equine industry, encompassing the evolution and role of the equine species throughout history, breed selection and development, nutrition, disease, preventative health care, reproductive management, basic anatomy and physiology, and equine career options.*  AGAB 110 Introduction to Agriculture Business 3 units  *A survey and basic understanding of the business and economics of the agriculture industry. It is an introduction to the economic aspects of agriculture and their implications to the agricultural producer, consumer, and the food system, The management principles encountered in the day to day operation of an agricultural enterprise are stressed as they relate to the decision making process.*  AGAS 125 Animal Feeds and Nutrition 3 units  *The science of animal nutrition; the fundamentals of digestion and absorption in both ruminants and non-ruminants are discussed. The nutritive value of feeds as they relate to the formulation of livestock rations will be emphasized including by-product feeding.*  AGAB 150 Agriculture Computer Applications 3 units  *Computer use in the workplace with emphasis in agribusiness situations. Computer applications including word-processing, spreadsheets, databases, and presentation managers will be covered. Also included will be instruction on accessing information through the Internet and World Wide Web, telecommunications, an introduction to web page design and other software applications appropriate to agribusiness.*  AGMA 160 Introduction to Mechanical Agriculture 3 units  *Involves basic mechanical skills in woodworking, cold metal, electricity, plumbing, concrete, and project construction skills as related to farm maintenance and repair. Hand and power tool use skills will be developed. Safety practices for all mechanical areas will be covered.*  AGAS 170 Elements of Beef Cattle Science 3 units  *Study of the principles and practices of purebred and commercial beef cattle production throughout the world, United States and California; emphasis on the importance of breeds, breeding principles, selection, nutrition, environmental management, health, marketing and recordkeeping to ensure scientifically based management decisions and consumer product acceptance as applied to beef cattle.*  **Lower Division Major Course Requirements Total 22 units** |

**Bachelor of Science: Equine and Ranch Management**

***Upper Division Requirements and Electives***

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| Upper Division Core Requirements  (24 units) |
| AGPS 300 Rangeland, Pasture and Forage Management 3 units  *Characteristics, history and multiple uses of pasture and rangeland. Principles of plant physiology and ecology in relation to forage conditions, trends, utilization and improvement practices. Principles of proper grazing practices and nutrition of livestock*.  AGAS 313 Equine and Bovine Health and the Prevention and Control of Disease 3 units  *Important diseases of livestock. Immunity, disease mechanisms, infectious agents, diagnostic procedures, and post-mortem techniques as well as a survey of selected but generally well-recognized diseases of livestock.*  AGAB 335 Equine and Ranch Management Entrepreneurship 3 units  *Tools to be a successful agricultural entrepreneur. Equips students with foundational knowledge and explore the strengths and weaknesses entrepreneurial plans. Topics include defining and refining the idea, developing the opportunity, and planning and delivering the business venture. The importance of the business plan as preparation for launching a business venture, managing the business and obtaining investor dollars.*  AGMA 404 Livestock Facilities Maintenance and Management 3 units  *The interaction between the physical design and business management of equine and cattle enterprises. Principles of equine and cattle facility design and maintenance with particular emphasis on the application of skills related to managing an equine and/or cattle facility.*  AGAB 418 Equine and Ranch Management Internship 1-6 units  *Student will spend time with an approved agricultural firm engaged in production or related business. Time will be spent applying and developing production and managerial skills and abilities.*  AGAB 465 Equine and Ranch Enterprises 3 units  *A capstone course evaluating agribusiness organization and management. A variety of Equine, Agriculture, and Ranch management businesses will be evaluated and examined either through case studies and/ or facility tours. Discussion topics will include evaluation of business plans, location, costs, natural resource management, environmental regulations, and human resource management. Budgeting, output-input relationships, and enterprise analysis in decision making.*  Choose from one of the following Production and Management Courses:  AGAS 421 Equine Production and Management 3 units  *Knowledge and skills for the application of current management practices in the area of horse production and management. Emphasis on nutrition, disease, preventative health care, reproductive management, anatomy and physiology and facility development and maintenance. (Also counts as a Career Elective)*  *OR*  AGAS 423 Beef Cattle Production and Management 3 units  *Knowledge and skills for the application of current management practices in the area of beef cattle production and management. Emphasis on reproduction, breeding, nutrition, health care and facility development and maintenance. (Also counts as a Career Elective)*  Upper Division Core Requirements Total 24 units |

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| Upper Division General Education  (9 units) |
| Writing & Communication Requirement  ENGL 310 Applied Professional and Technical Communication and Composition 3 units  *Provides experience and feedback on writing effective and concise professional and technical communications such as memos, emails, letters, reports, technical papers, proposals, reports, social media, pamphlets, and other communications medias such as working in teams, preparing and giving presentations essential in the professional field.. The purpose of this course is to improve the writing and presentation ability of students in their professional communication with others.*  ENGL 416 Research Methods in Equine and Ranch Management Current Topics and Issues 3 units  *Research in current equine and ranch management topics through critical exploration of research language, ethics, and approaches. The course introduces the elements of the research process within quantitative, qualitative, and mixed methods approaches, and emphasizes industry related topics including animal welfare and ethical training methods.*  Social and Behavior Science Requirement: A minimum of 3 units should be chosen from the list below.  ENVR 480 Human Dimensions of Natural Resources 3 units  *The values, attitudes, and behaviors of humans related to natural resources. Students will explore their own beliefs, biases, and prejudices through the use of case studies in controversial topics such as grazing on public lands, the expansion of wolves into new habitat, listing of endangered species such as sage grouse, and recreation conflicts.*  HIST 400 The American West 3 units  *Study of the history of the American West from Europe contact to the present. Topics will include the role of the US government and the effects of American expansionism with particular focus on the environment, economic development, and conflicts over resources and land as well as the historiography of the West.*  Upper Division General Education Total 9 units |

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| Upper Division Career Electives  (9 units) |
| AGAS 302 Advanced Techniques in Equine Training Fall 2 units  *Mastering advanced principles and applications of training young horses under saddle. Course includes groundwork, philosophy of colt starting, problem solving, equine behavior modification. Training young horses in beginning maneuvers under saddle with special emphasis on continuing the fall training of two year olds started in the spring*.  AGAS 303 Advanced Techniques in Equine Training Spring 2 units  *Mastering advanced principles and applications of training young horses under saddle. Course includes groundwork, philosophy of colt starting, problem solving, equine behavior modification. Training young horses in beginning maneuvers under saddle with special emphasis on starting the two-year old horse in the spring.*  AGAS 307 Advanced Techniques in Equine Sale Preparation I 2 units  *Fitting and showing horses. Students gain experience training, conditioning, grooming, showing and /or selling horses. Training young horses in advanced maneuvers under saddle including cow work, rope work, trail, versatility, and reining patterns. Techniques and applications of fitting a horse in preparation for horse sale or show.*  AGAS 308 Advanced Techniques in Equine Sale Preparation II 2 units  *Culminating further experience in training, conditioning, grooming, showing and/or selling horses. Training young horses in advanced maneuvers under saddle including cow work, rope work, trail, versatility, and reining patterns. Techniques and applications of fitting a horse in preparation for horse sale or show.*  AGAS 350 Reproduction, Breeding Systems, and Genetics of Livestock 3 units  *A study of the mechanisms of livestock reproduction, genetics, and animal breeding systems with an emphasis on beef cattle and horses. Physiological mechanisms of livestock reproduction including gonad function, endocrine relationships, fertility, and factors affecting reproduction efficiency; genetics including study of the genetic basis of selection, kinds of gene action, principles of physical and chemical basis of heredity, mutations, sex-linkage, chromosome mapping, multiple alleles and chromosomal abnormalities. Breeding systems including the application of genetic principles to livestock improvement and development of breeding programs based on principles of population genetics.*  AGAS 360 Technical Veterinary Skills 3 units  *Restraint and handling of animals, physical examination, necropsy procedure, basic wound management, applied pharmacology. Reproduction and herd health programs.*  AGAB 364 Promotion and Marketing in the Equine and Beef Cattle Industry 3 units  *Marketing strategies, planning, budgeting, research, product development, pricing, branding, communications and promotions, with applications specific to the equine and beef cattle industry. Students will become acquainted with multimedia marketing techniques and event planning in the agriculture industry.*  AGPS 370 Soil Fertility and Plant Nutrition 4 units  *A fundamental understanding of plant nutrition, soil fertility, and nutrient management. An emphasis on quantitative and chemical factors that control and measure soil and plant nutrient content, as well as background on the essential plant nutrients. Provides an understanding of the environmental implications of fertility management and operations.*  AGAS 402 Training of the Hackamore Horse 2 units  *Techniques and applications involved in the training of a hackamore horse. This course will continue the advancement of the training of the young horse in the hackamore. Course includes advanced riding techniques, philosophy of equine behavior modification, and the function of the hackamore. Training young horses in advanced maneuvers under saddle with special emphasis on continuing the fall training of three year olds and progressing to a hackamore.*  AGAS 403 Training the Bridle Horse 2 units  *Techniques and applications involved in the training of a bridle horse. This course will continue the advancement of the training of the young horse in the bridle. Course includes advanced riding techniques, philosophy of equine behavior modification, and the function of the bridle. Training young horses in advanced maneuvers under saddle with special emphasis on continuing the spring training of the four year old horse and progressing to the bridle.*  AGAB 410 Equine and Ranch Management Leadership Seminar 3 units  *The study of leadership traits. Knowledge, skills and attitudes that enhance personal effectiveness and professional success. Goal attainment, personal organization and critical thinking strategies are emphasized. Principles and practices in planning, developing, conducting, and evaluating leadership programs for agricultural groups. Improving group communication; becoming effective leaders and members of groups; improving leadership and personal development skills; assessing leadership situations, determining and administering appropriate leadership strategies, and evaluating results.*  AGAS 450 Applied Beef Cattle Reproductive Management 1-2 units  *An advanced course in bovine reproductive management. Further explores the principles of reproduction management of cattle by emphasizing current cattle breeding techniques and practices, management and care of the cow and calf, management and care of the bull. Emphasis on development of technical skills.*  AGAS 455 Applied Equine Reproductive Management 1-2 units  *An advanced course in equine reproductive management. Further explores the principles of reproduction management of horses by emphasizing current horse breeding techniques and practices, management and care of the broodmare and neonatal foal, and management and care of the stallion. Emphasis on development of technical skills.* |

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| General Electives |
| *May consist of lower or upper division courses to satisfy a minimum of 120 units required for a bachelor degree.* |